THE UNIVERSITY OF MELBOURNE

BOTANY FOUNDATION
ANNUAL REPORT 2017

CONTENTS

BOTANY *FOUNDATION*

The University of Melbourne Botany Foundation supporting the discipline of Botany – the study of plants and plant processes

The Foundation supports excellence in education and research in the School of BioSciences through student awards and scholarships, support for research programs, and a partnership with the Royal Botanic Gardens Victoria. Plant science contributes to Australia's National science and research priorities and capacity building in the areas of biosecurity, agriculture and food production, the environment, conservation and health.

REPORT FROM THE FOUNDATION
BOARD CHAIRMAN

The Botany Foundation's Trust accounts now exceed a total of $7.9 million. Investment income in 2017 continued to support plant science research, students, and community engagement.

Our awards, prizes and scholarships supported 15 students, including doctoral, masters and undergraduate students. The projects of four students, on grazing pressure on buloke woodlands, taxonomy of native flora, and micronutrient enhancement in wheat and rice, are reported on pages 7 to 10, highlighting the quality and significant contribution of the postgraduate plant science research.

Professor Mark Burgman FAA, who held the Adrienne Clarke Chair of Botany, departed this year to take up the prestigious position of Director of the Environmental Science Centre at Imperial College London. Although we were sorry to lose him, we were pleased to have supported Mark as the inaugural appointee to the Adrienne Clarke Chair, which was established in 2007 through the fund-raising activities of the Foundation. We are working with the Dean of the Science Faculty and the new Head of the School of BioSciences to make a new appointment in an important area of botanical research.

The new Head of School, Professor Herbert Kronzucker commenced his position mid 2017. Herbert is a distinguished professor of plant physiology from The University of Toronto, Canada, and he has enthusiastically joined the Foundation's Board.

Early career travel scholarships

This year, the foundation supported a new initiative, providing support to four Early Career Researchers (ECRs) for their travel to international and national conferences (p.13). Three ECRs travelled to China, one to participate in the International Conference on Cell Wall Biology and two to participate in the XIX International Botanical Congress, while the fourth ECR researcher attended the COMBIO conference in Adelaide.

Celebrating Australian native orchids

The Foundation hosted an exhibition in the School of photographs of native orchids by Dr Gordon Leckie. The event allowed the Foundation to keep in touch with alumni and colleagues who attended our celebratory opening on Sunday afternoon 26th March 2017. In addition to viewing the superb orchid images, Dr Michael Whitehead and Herbarium Curator Dr Jo Birch gave talks on orchid biology and herbarium-based research (p. 14).

The Board is very grateful for the continued support of our donors and alumni, with significant funds having been received this year towards the University of Melbourne Herbarium Fund (see p. 17).

Dr Tony Gregson AM FTSE
Chairman, Botany Foundation

Foundation Chairman Dr Tony Gregson AM FTSE

BOTANY FOUNDATION *BOARD MEMBERS 2017*

Dr Tony Gregson AM FTSE, External Chairman

Professor Pauline Ladiges AO FAA, Deputy Chairman

Ms Sally Browne, External Member

Professors Michael McCarthy (to June 2017) and Herbert Kronzucker, Head School of BioSciences (from July 2017)

Professor Adrienne Clarke AC FAA FTSE

Dr Alex Johnson, School of BioSciences

Professor Karen Day, Dean Faculty of Science

Associate Professor John King AM, External Member

Associate Professor Ed Newbigin, School of BioSciences

Dr Janet Schapper, External Member

Student Karen Hayley Buchanan

Supported by Ms Robyn Trethowan and Ms Penny Fairbank (Faculty of Science)

SCHOLARSHIPS, AWARDS *AND PRIZES IN BOTANY*

The Foundation's endowed scholarships allow students to achieve their potential for the future of Australia. Prizes recognise their excellence and achievements. Each award is governed by the Foundation's University Trust Regulation, and eligibility criteria relate to the wishes of the original donors.

Student research is contributing to: our understanding of how plants function, finding better ways to control fungal diseases of crops, insect pests of plants, controlling weeds, bio-availability of iron in food plants, how to use fire in managing ecosystems, understanding drug targets for malaria, and discovering new terrestrial and marine species.

Students recognised in 2017

Twenty-four students applied for awards this year and the successful recipients included 9 PhD students, 3 Masters students and three 3 undergraduate students. The awardees were:

Botany Prize
Oakley Germech, *Top 3rd year botany major in 2016*

Bruce Knox Honours Prize
Demi Gamble *Top honours student in 2016*

David H Ashton Scholarship (shared)
Linda Riquelme "Estimating biomass for the management of total grazing pressure in the endangered Buloke *(Allocasuarina luehmannii)* woodlands of Wyperfeld National Park"

Emily Baldwin "Optimising buloke regeneration for woodland restoration"

David Ashton Travel Award
Juan Manuel Valero Rodríguez, "Bioremediation of nitrogen enriched environments by macroalgae"

Sophie Ducker Postgraduate Scholarship
Catherine Clowes "*Spyridium parvifolium:* an investigation into the genus phylogeny and the species morphology, genetic diversity, phylogeography and ecology"

Ethel McLennan Award
Andrew Lonsdale "Bioinformatics approaches to leaderless secretory proteins (LSPs) in plants"

Megan Klemm Postgraduate Research Award (shared)
Melissa Bain "Understanding the mechanism of (1,3; 1,4)-ß-D-glucan or mixed linkage glucan synthesis, an important soluble fibre in cereals"

Zheng Li "Exploring the transition from primary to secondary cell wall"

Kingsley Rowan Marine Botany Prize
Sonja Repetti (3rd year student)

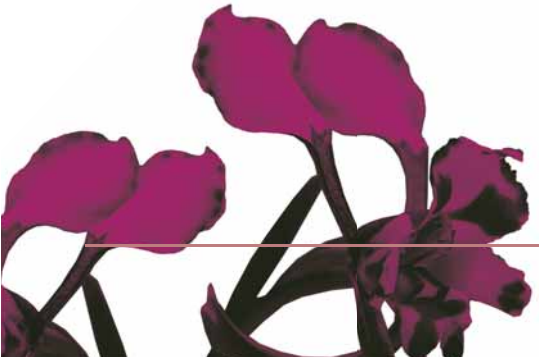
Gretna Weste Plant Pathology and Mycology Scholarship
Reynaldi Darma "Characterisation of a secondary metabolite gene cluster in *Leptosphaeria maculans"*

G.A.M. Scott Research Award (shared)
Caitlin Selleck "Factors affecting black slug cup moth caterpillars herbivory on blue mallee"

Michelle Freeman "From Little Things Big Things Grow – How do trees succeed in Australian savannas?"

John S. Turner Post-graduate Scholarship (shared)
Jesse Beasley "Investigating micronutrient transport and end-use quality characteristics in Iron and Zinc biofortified Bread Wheat"

Ronan Broad "Molecular and phenotypic characterization of Vitamin C enriched rice *(Oryza sativa* L.*)*"



WHEAT AND RICE RESEARCH *TACKLES GLOBAL MALNUTRITION*

— By Jesse Beasley and Ronan Broad, *PhD Students, who were jointly awarded the John S Turner Postgraduate Scholarship. This scholarship honours the late Professor of Botany, J.S. Turner OBE FAA (1908-1991)*

Human iron (Fe) deficiency is the most prevalent nutritional disorder in the world and manifests as a range of health issues including fatigue, impaired cognitive development and increased mortality.

Micronutrient supplements and fortificants are frequently used to increase human Fe intake yet these strategies require continuous investment and frequently miss rural populations; Fe biofortified crops represent a powerful alternative. At the University of Melbourne's Nutrition Lab we investigate novel ways to improve grain Fe concentration and bioavailability in rice and wheat.

Enhancing Iron availability in bread wheat: Jesse Beasley

Nicotianamine, a non-protein amino acid found within all higher plants, is capable of chelating and remobilising Fe from vegetative to reproductive tissues. Overexpression of a rice nicotianamine synthase gene in bread wheat increases grain Fe concentration, alters grain Fe distribution and binds grain Fe in a readily bioavailable form.

My PhD thesis aims to investigate the mechanism of grain Fe accumulation, Fe bioavailability and several end-use characteristics in nicotianamine biofortified bread wheat to accelerate its deployment as a more nutritious staple crop. The John S Turner Scholarship partially funded my research visit to Cornell University in 2017 to measure Fe bioavailability in white flour and bread produced from field grown biofortified bread wheat.

Jesse Beasley in a biofortified wheat field, Merredin, Western Australia

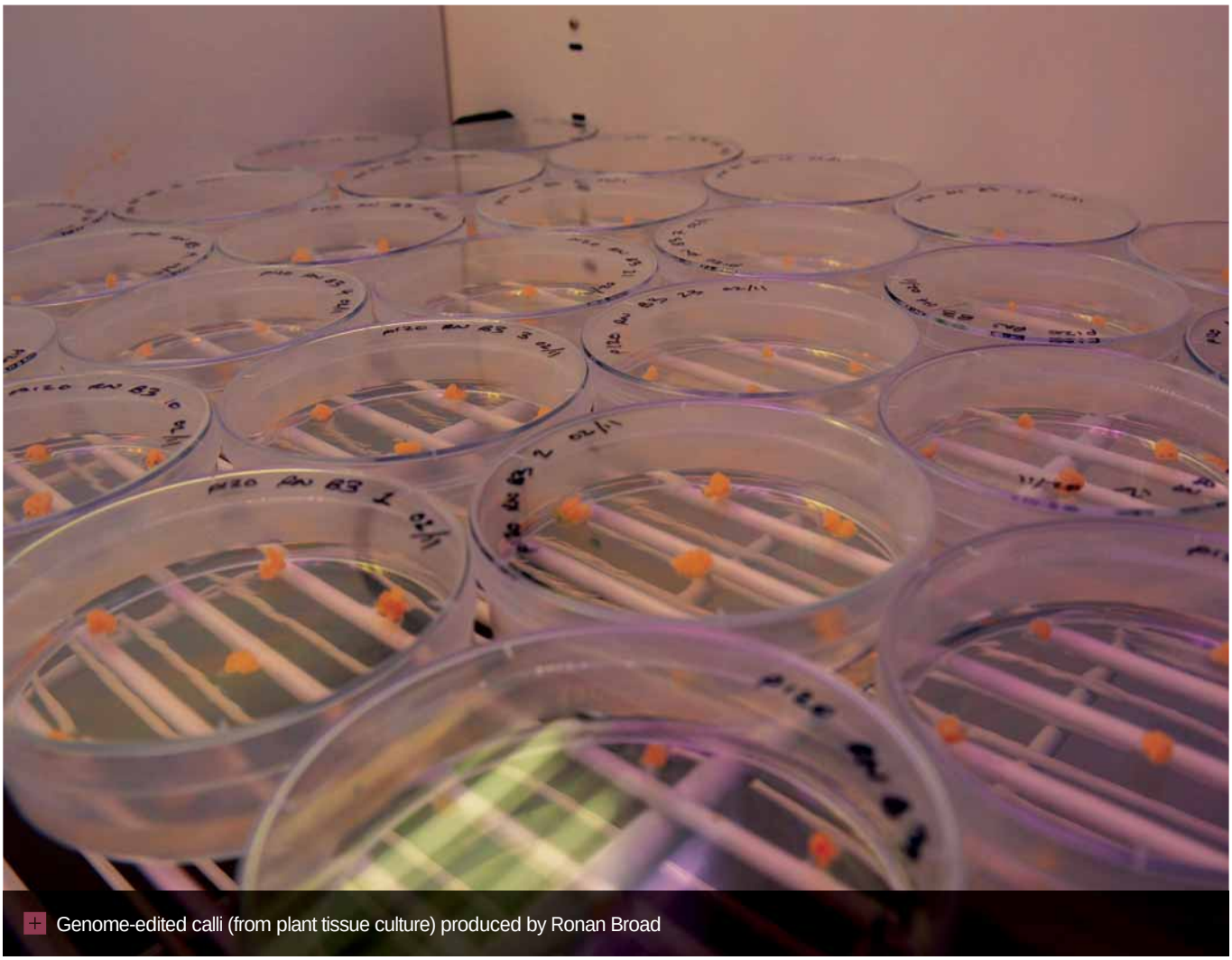
VITAMIN C ENRICHED RICE:
RONAN BROAD

Ascorbate, also known as vitamin C, is a potent enhancer of Fe bioavailability and is able to overcome strong inhibitors of Fe absorption in the human digestive process.

As many major staple crops have little to no ascorbate, biofortification of crops with ascorbate could represent a novel means of improving human Fe nutrition.

My PhD research aims to increase ascorbate concentrations in rice, including exploring new strategies to increase ascorbate using genome editing, and to elucidate the effect the elevated ascorbate may have on grain Fe bioavailability.

The John S. Turner Scholarship contributed costs towards my research visit to the Queensland University of Technology to explore the effect that a range of novel ascorbate biosynthetic genes have on ascorbate concentrations in a transient gene expression system.



Genome-edited calli (from plant tissue culture) produced by Ronan Broad

GENETIC VARIATION AND PHYLOGEOGRAPHY *OF SPYRIDIUM PARVIFOLIUM*

— Catherine Clowes, *PhD student awarded the Sophie Ducker Postgraduate Scholarship*

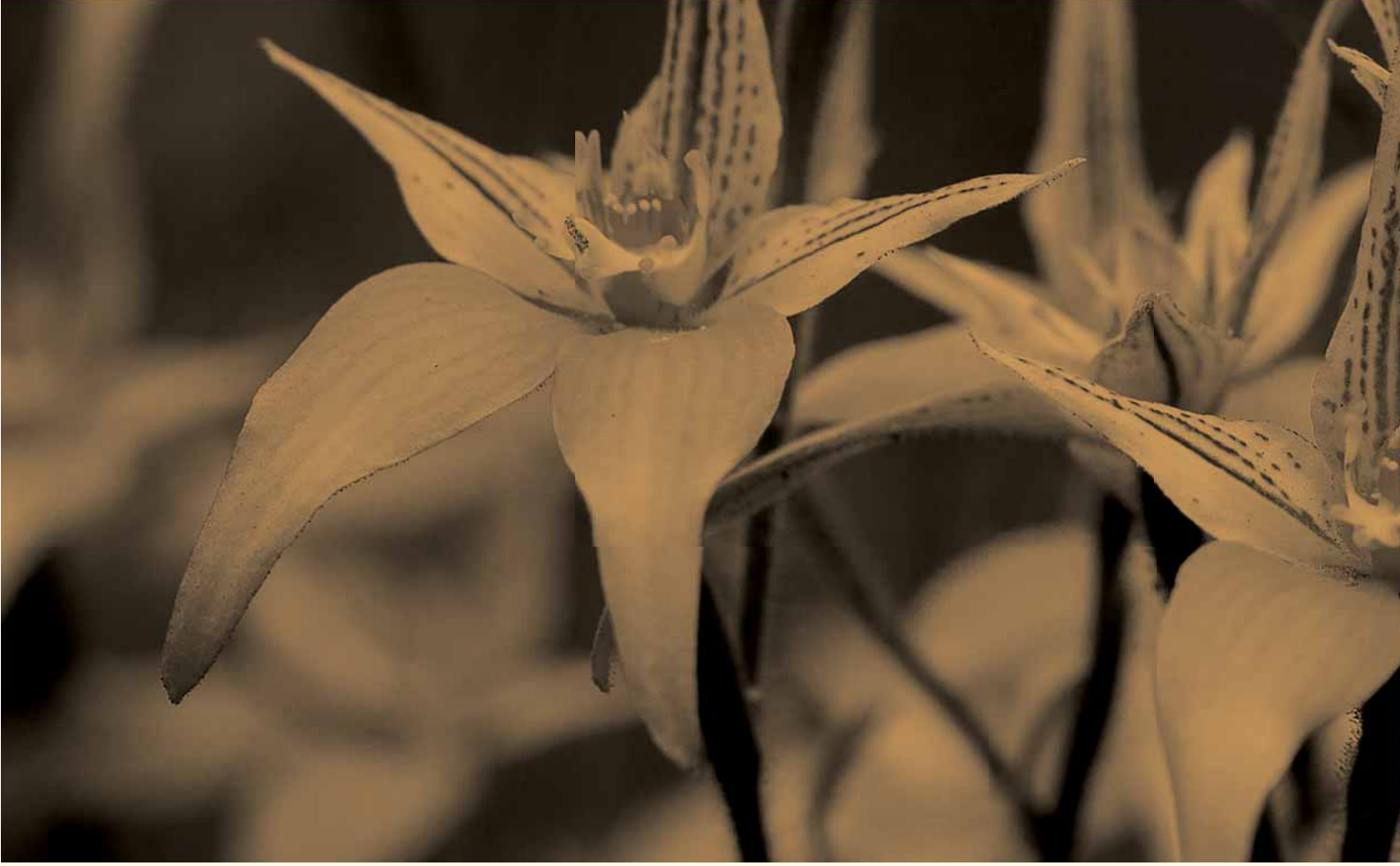
In addition to investigating the phylogeny of the genus *Spyridium* (plant family Rhamnaceae), I am sampling the extremely variable species *Spyridium parvifolium* to determine morphological and genetic variation, which will inform whether new species, subspecies or varieties should be recognised and their conservation status.

Spyridium parvifolium (Dusty Miller) is a shrub with a widespread but disjunct distribution, found in South Australia, Victoria, New South Wales and Tasmania. Some variants have been recognised taxonomically. Var. *molle* is found on Bass Strait islands and Tasmania, where it is listed as a threatened taxon, although it may prove to be similar to plants on Wilson's Promontory and in far eastern Victorian coastal heatlands. In Victoria, var. *hirsutissimum* occurs in the northern Grampians, var. *grande* in the Dandenong Ranges, and another un-named form occurs in the Brisbane Ranges.

I am sampling plants from the field and using next-generation DNA sequencing methods to estimate the level of genetic variation across the species geographic range. Genetic information is not only essential for assessing the number of taxa that should be recognised, their geographic boundaries, rarity and conservation status, but it will allow me to assess the factors that have shaped the observed pattern of variation including historical geographic isolation, dispersal and/or hybridisation.

Spyridium parvifolium flower clusters

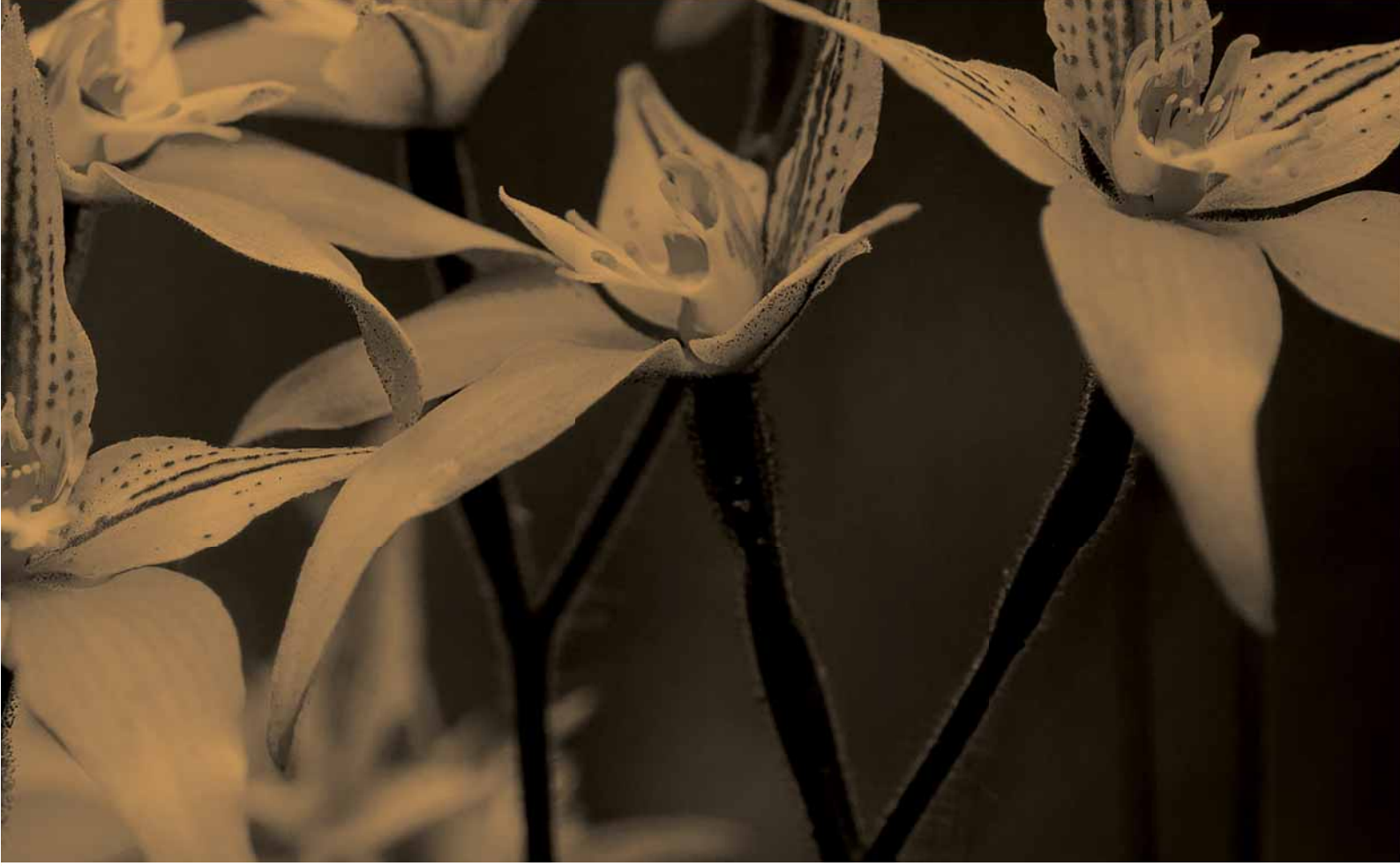
PhD student Catherine Clowes on a field trip to collect *Spyridium* species in Western Australia, with the help of her children



ESTIMATING GRASS BIOMASS *FOR MANAGEMENT OF WILDLIFE IN BULOKE WOODLAND*

— Linda Riquelme, PhD student, shared the David H Ashton Scholarship

The Buloke Woodlands of the Riverina and Murray Darling Depression Bioregions are an Endangered Ecological Community. Cleared over much of their original range for livestock grazing, the largest areas of woodland are now located inside national parks, but these remnants are badly degraded. Park managers hoped that by removing livestock the Woodlands would regenerate naturally but, so far, this has failed to happen.



The remaining populations of the dominant tree species, buloke (*Allocasuarina luehmannii*), belah (*Casuarina pauper*) and slender cypress pine (*Callitris gracilis*) are aging, and there are few seedlings and saplings coming up to take their place. Unfortunately, recruitment is not the only problem Buloke Woodlands face; the palatable shrub and herb species were decimated during the period of pastoralism, and most woodland patches have few of the original native understorey species. Missing are important species such as wattles and peas, once common in this community. Nonetheless, the recruitment of canopy species is fundamental to preserving the structure of the community.

Linda Riquelme is estimating grass biomass for kangaroo management

Can native herbivore feeding patterns be predicted with remotely-sensed data?

For her PhD, Linda Riquelme is studying how satellite imagery can be used to estimate grass biomass so as to help Park managers refine their kangaroo management strategy.

One of Park Victoria's most scrutinised management actions is the control of western grey kangaroo populations by culling. Western greys are thought to be the main native grazer responsible for failure of the trees to regenerate. Kangaroo numbers are controlled (as are introduced herbivores) so that native seedlings may survive and reach reproductive maturity.

Buloke and pine seedlings are not the favourite food of kangaroos. However, it is thought that when native grass declines, kangaroos switch to other food sources, such as seedlings of buloke, pine, shrubs and forbs. Therefore, managers need to be able to forecast how much grassy forage is available to better target kangaroo control to times when the risk of over-grazing is high. Linda's research will help to identify cost-effective means for monitoring the threat to regeneration of this important plant community.

Linda Riquelme is a PhD student with Associate Professor Peter Vesk. This article was adapted from David H Duncan, "The Last Stand for Endangered Buloke Woodlands", in Science for Saving our Species, September 2017 issue of the magazine of the National Environmental Science Programme's Threatened Species Hub.

THE MELBOURNE POLLEN COUNT – IDENTIFYING WHAT'S *IN MELBOURNE'S AIR USING DNA BARCODING*

— Lachlan Tegart and Ed Newbigin

People who donate to the Melbourne Pollen Count often ask how the Botany Foundation supports its activities. One important way is through the support the Foundation provides to research aimed at identifying far more of the diversity of airborne pollen in Melbourne's air than is currently achieved using microscopy.

Lachlan Tegart showing part of a Burkard pollen trap

The research is part of Lachlan Tegart's Master of Science project entitled "Taxonomic and allergenic assessment of Melbourne's airborne flora".

Lachlan's project involved collecting a 24 hour sample of air onto a special filter once a week between July 2016 and April 2017 using a device called a high volume sampler that was located on the roof of the Earth Sciences building at the University of Melbourne. The filter traps airborne particulates such as pollen. DNA extracted from the trapped material was used to amplify short genetic markers called DNA barcodes, which can help identify each species in the sample. Next Generation sequencing technology was then used to read the DNA barcodes in a total of 40 samples of air.

Bioinformatic processing of the barcodes provided an assessment of plant taxonomic diversity in Melbourne's air compared with the diversity found using the standard microscopy-based method. DNA barcoding identified all 19 types of pollen using the standard approach plus pollen from an additional 66 plants families.

Lachlan's findings will be relevant to clinical allergists, patients with a range of allergy conditions, and to researchers studying how pollen allergies contribute to the burden of disease in the community.

The Melbourne Pollen Count, established in 1991, is now part of AusPollen, funded through the National Health and Medical Research Council (NHMRC). In 2017 the Melbourne Pollen Count also helped establish a network of pollen monitoring stations across Victoria and is working with the Bureau of Meteorology and the Victorian Government's Department of Health and Human Services to deliver thunderstorm asthma forecasts for the state.

EARLY CAREER RESEARCHER *TRAVEL AWARDS 2017*

The Botany Foundation Board agreed to provide financial support to early career plant science researchers (ECR's) in the School of BioSciences to travel to local and overseas conferences, including the International Botanical Congress. Applications were called for and four ECR's were funded:

Dr René Schneider (International Conference, Cell Wall Biology, China July 2017), Dr Tanya Schuster and Dr Michael Whitehead (International Botanical Congress, China July 2017) and Dr William Wing Ho (COMBIO conference, Adelaide Oct 2017).

Dr Michael Whitehead reported on his trip to China

"With the generous support of the Botany Foundation, I attended the International Botanical Congress in July, presenting my work on the influence of pollinator behaviour on plant gene flow. This year there were 7000 delegates in attendance, making it the largest meeting of plant scientists, and certainly the largest conference I have ever attended. This conference offered outstanding professional benefit to me in the following ways:

- High exposure for my work in front of research leaders in a special symposium for plant mating. This was especially useful in promoting my current work on pollinator shifts and motion-capture cameras
- I attended a special dinner for experts in plant reproductive ecology, with many of the leading people in that field
- Formed a new collaboration with Dr Karl Duffy from University of Leuven, Belgium where we generated ideas on which to build a new paper about Australian orchid distributions. We are now rapidly progressing to analysis on this project
- Meeting and progress on previous collaboration with Professor Steve Johnson (University KwaZulu-Natal, South Africa). Paper is now in late draft stage
- Meeting and progress with co-author Associate Professor Jeff Karron (University of Wisconsin-Milwaukee, USA) on a paper that has been submitted since that time
- Made new connections with colleagues in my field: Professor Jeff Ollerton (UK), Dr Haiqin Sun (China), Dr Martin Breed (Adelaide)

Lastly, as this was my first time in China, I derived great personal benefit from the trip. What I experienced and learnt about Chinese culture and society in that short time was impressive, fascinating, and a valuable life experience. I am grateful to the Botany Foundation for their support of this trip."

Dr René Schneider reported on his international conference

"I am very grateful for the support of the Botany Foundation, which enabled me to register to the 6th International Conference on Plant Cell Wall Biology which took place in Dalian, China, from 16th to 20th July 2017. Having transitioned only recently to plant cell wall biology, this conference allowed me to immerse myself – for the first time – in the international plant cell wall community and present my research in front of world-leading scientists. I was able to connect with fellow early career researchers from China and Europe, which holds great potential to trigger established research collaborations in the near future. The awarded amount of $1500 was fully spent on return flight tickets from Melbourne to Dalian and hotel accommodation in Dalian.

I benefitted two-fold from the award: firstly, via the award itself, which will strengthen my applications for independent research positions in the upcoming year, and secondly, through the connections I made with fellow established and early career scientists, respectively, from all over the world. I strongly encourage the Botany Foundation to intensify efforts to support young researchers during their early careers."

Dr René Schneider

CELEBRATING *AUSTRALIAN ORCHIDS*

The Melbourne Botany Foundation invited alumni and colleagues to an exhibition of photographs of native orchids on Sunday afternoon 26th March 2017.

Presentations highlighted the extraordinary pollination biology of orchids and the research collection of the University Herbarium, for which the Foundation is raising funds to support research and curation into the future.

An exhibition of orchid photographs by Dr Gordon Leckie was a highlight of the event. Dr Leckie has spent his working life as an anaesthetist. Since retiring, his photographic interest has centred on capturing images of Australian orchids in the wild.

Sex, lies and pollination: Deception and mimicry in Australian orchids was presented by Dr Michael Whitehead, McKenzie Fellow in the School of BioSciences. Michael reported that most flowering plants employ animals to carry out pollination offering rewards of nectar or pollen. Many orchid species masterfully deceive pollinators through false promises of sex and food. Michael illustrated recent discoveries about pollination in rewardless orchid flowers. Michael graduated from The Australian National University in 2012 and has studied plants and pollinators in Western Australia, South Africa, and the USA.

Collection-based research at the University of Melbourne Herbarium and Rupp's orchids was the topic of the presentation by Dr Jo Birch, Curator of the University of Melbourne Herbarium housed in the School of BioSciences.

The University of Melbourne Herbarium (MELU) is the oldest (from 1926) and largest (c. 150,000 specimens) university herbarium in Australia. Its foundation collection was the orchid collection of Reverend Rupp. Jo discussed her research project on a major group of monocotyledon plants, the order Asparagales (from grasses to lilies) highlighting the use of herbarium specimens for genomic research. Jo was awarded her PhD from the University of Hawaii in 2011 and was a postdoctoral fellow at the Royal Botanic Gardens Victoria.

Viewing Dr Leckie's orchid photographs at the exhibition

Drs Michael Whitehead and Jo Birch presented talks on orchid pollination biology and the Herbarium

GROWING THE *HERBARIUM FUND*

Built up over nearly a century, the University of Melbourne Herbarium houses 150,000 specimens of plants, fungi and algae, including historically important collections and artwork.

Named MELU, it is part of Australia's network of herbaria, is represented on the Council of Heads of Herbaria and is registered with the Convention on International Trade in Endangered Species (CITES) and Australian Quarantine. It is a significant botanical research and cultural collection.

Our new subtrust "The University of Melbourne Herbarium Fund", was established in 2016 and we have made significant progress towards our goal of raising $1million.

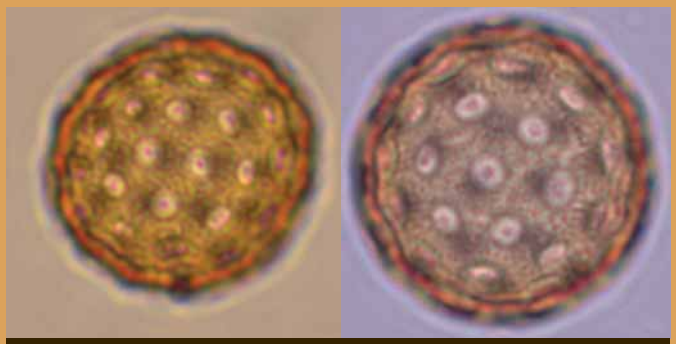
Why are we raising funds?

- To modernise and enhance the herbarium capability beyond what one curator can achieve
- To improve the curation of the collections for users including for research
- To ensure the taxonomy of the plant collections is up-to-date for users
- To make the collection and associated information broadly accessible by digitising specimens and contributing to Australia's Virtual Herbarium.

Mining the herbarium records

During the period 2010-2015, 71 scientific publications resulted from the herbarium collection used by staff and students.

- Herbarium specimens provide samples for DNA analysis, which reveal genetic relationships and population variation and inform taxonomy. For example, herbarium samples have been used to measure genetic variation tussock grass Poa labillardierei, which includes two named varieties in south-eastern Australia. Tussock grass is an important food source and habitat for wildlife

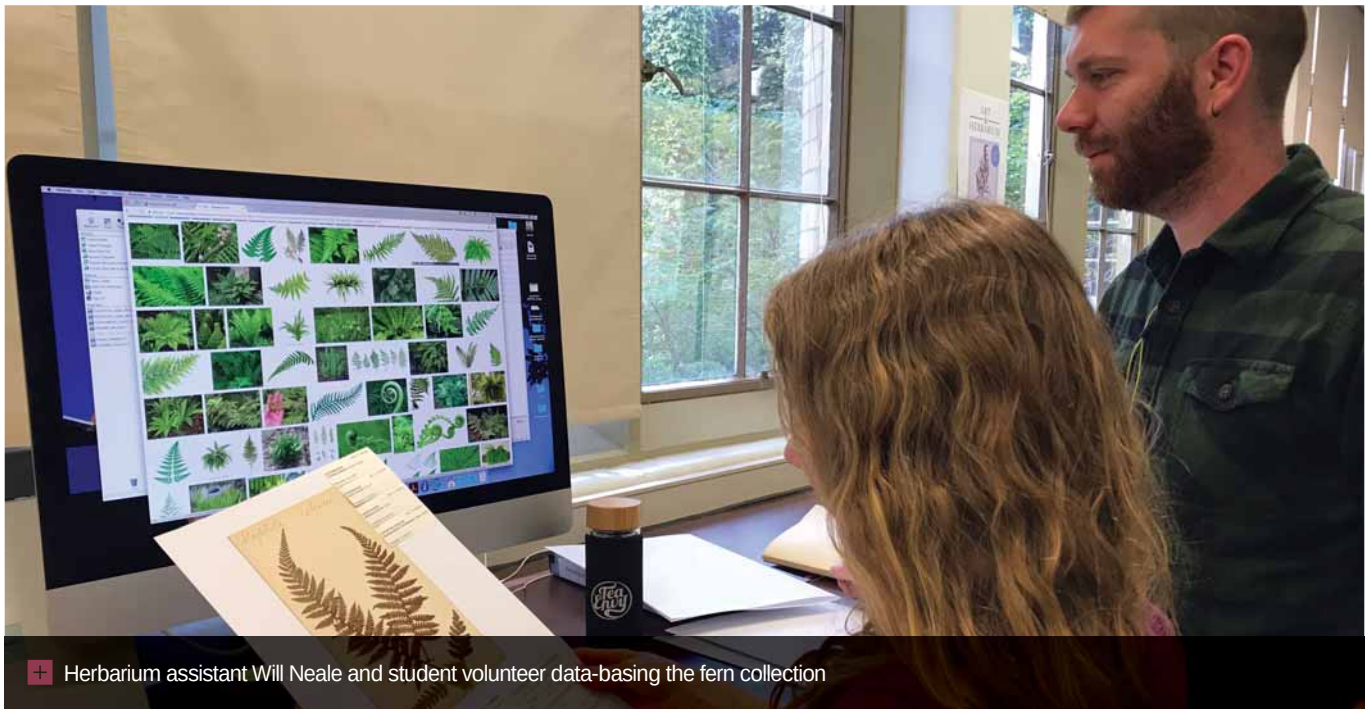


Fossil pollen (left) was identified as chenopod type pollen based on the living pollen (right) extracted from a MELU specimen collected by B. Easterbrook, 1948, *Eriochiton sclerolaenoides* (Woolly-fruit bluebush, family Chenopodiaceae). Bar = 10 microns

- Herbarium specimens were recently used by research student Kia Matley to prepare a reference collection of pollen to enable her to identify the species of fossil pollen and hence the vegetation that grew near caves on the Nullarbor in the geological past. The microscope slides and photographs of the living plants have been lodged in the herbarium for future research
- Data-basing the collection is contributing to Australia's Virtual Herbarium (AVH) and Atlas of Living Australia (ALA). These feed into international biodiversity data portals such as the Global Biodiversity Information Facility (GBIF). In the last 12 months, there have been 699,129 downloads: 35% ecology, 30% research, 5.5% education and 1% environmental assessment.

DIGITISING THE FERN *COLLECTION*

Two of the Foundation's subtrusts are able to provide support for work on ferns. These are the V Sarafis Research Fund established from a bequest from the late Professor Vassilios Sarafis (for research on various groups of living and fossil land plants), and the Fern Research Fund, established by a gift from the Victorian Fern Society.



Herbarium assistant Will Neale and student volunteer data-basing the fern collection

During 2017, the Foundation Board approved a small grant to Dr Jo Birch. She employed a casual assistant for 75 hours to curate the MELU herbarium's Pteridophyte (fern) collection. The casual staff member gained curatorial skills, a working knowledge of the collection management database ('Specify'), and experience training volunteers in MELU protocols. Four herbarium volunteers contributed 20 volunteer hours to this project and in doing so developed collection-based data management skills (e.g. digitisation and curatorial protocols) and knowledge of Australian biodiversity (e.g. protocols for field-based collections, scientific nomenclature, and taxonomy).

Two hundred and seventy three specimens were fully curated in this project. A Specify Workbench template was generated to enable direct data digitisation by volunteers into the collection management database to replace the excel csv file template previously in use. Curation included remounting of specimens whose treatment didn't meet current standards, nomenclatural updates to names accepted in the Australian Plant Census, and data digitisation including quality control of data captured by botany undergraduate students in 2016. The rate and quality of volunteer's digitisation efforts increased due to the functionality of the Workbench interface.

DONATIONS
2017

Adrienne Clarke Chair of Botany
Professor Adrienne E Clarke AC
Associate Professor Ed J Newbigin

David Ashton Travel Award
Mrs Frances Coogan Agar

David H Ashton Scholarship
Anonymous
Mr Leon Costermans
Mr Michael Kottek
Mr Brian Snape AM

Sophie Ducker Postgraduate Scholarship
Dr Juliet Flesch
Miss Ann Rusden
Mr Richard Tudor OAM
& Dr Elizabeth Tudor

Bruce Knox Prize
Ms Julie Anne Quinn

Ethel McLennan Award
Dr Donald Gaff

Kingsley Rowan Marine Botany Prize
Dr Jenneth Sasse

John S Turner Postgraduate Scholarship
Anonymous
Professor Emeritus Carrick Chambers AM & Mrs Margaret Chambers
Dr Richard Groves &
Mrs Margaret Groves

Pauline Ladiges Plant Systematics Research Fellowship
Mr Leon Costermans
Mrs Susan Morgan
Professor Gareth Nelson
Dr Jenneth Sasse
Ms Jennifer Steinicke

Plant Systematics Research Fund
Royalty income, Pearson Australia
Fee for service income,
Murdoch University
Dr Peter Adams & Dr Sheryl Lawson
Dr Josephine Kenrick
Professor Gareth Nelson

Unrestricted Research
Anonymous
Mrs Frances Coogan Agar
Dr John Anderson
Mr Michael Bertie
Professor Emeritus Trevor Clifford OAM
& Mrs Gillian Clifford
Dr Tony Gregson AM FTSE
Mr Ho Tuck Keong
Mr Allan Myers AC QC
Dr Mary Playford
Dr Valerie Tarrant OAM
Dr Barrie Thompson
Mr Edward Vellacott

Protist Systematics Research Fund
Dr Roberta Cowan

The Fern Research Fund
Mrs Margaret Regan

The University of Melbourne Herbarium Fund
Anonymous
Dr Michael Bayly
Ms Denise Dawson
Dr Donald Gaff
Dr Tony Gregson AM FTSE
Dr Emanuela Handman
Professor Pauline Ladiges AO
Dr Philip Moors AO
Mrs Susan Morgan
Mr Allan Myers AC QC
Ms Julie Anne Quinn
Dr Max Richards AM &
Mrs Margaret Richards

Women in Science of the Environment Fellowship
Consultancy income

Melbourne Pollen Count
Anonymous x 2
Mr James Moore

FOUNDATION FINANCIAL *SUMMARY 2017*

	Balance at 01.01.2017 ($)	Income[1] ($)	Awards & Expenses[2] ($)	Revaluation[3] ($)	Balance at 31.12.2017 ($)
Adrienne Clarke Chair of Botany Trust[4]	3,325,731	131,735	-3,633	189,003	3,642,835
Botany Foundation Trust					
Research Unrestricted Funds[5]	1,236,136	-47,320	-30,191	63,189	1,221,814
David Ashton Travel Award	43,091	1,721	-1,442	2,532	45,902
David H Ashton Scholarship	118,763	6,558	-4,106	6,172	127,387
Sophie Ducker Postgraduate Scholarship	69,943	3,983	-2,361	3,500	75,066
Megan Klemm Research Award	102,929	3,768	-3,589	5,160	108,268
Bruce Knox Prize	39,851	1,552	-1,335	2,042	42,111
Pauline Ladiges Plant Systematics Research Fellowship	1,153,317	50,008	-42,415	63,321	1,224,231
Ethel McLennan Award	56,330	2,029	-1,948	2,774	59,185
Plant Systematics Research Fund	258,166	13,214	-8,222	12,758	275,917
Protist Systematic Research Fund	49,082	3,631	-41	2,458	55,131
Kingsley Rowan Marine Botany Prize	23,049	1,015	-820	1,193	24,436
G.A.M. Scott Research Fund	127,009	4,505	-4,413	6,584	133,687
John S. Turner Postgraduate Scholarship	79,086	3,786	-2,771	4,154	84,256
Gretna Weste Plant Pathology & Mycology Scholarship	36,302	1,314	-1,233	1,938	38,321
The Fern Research Fund[6]	25,820	6,518	-25	1,543	33,855
V Sarafis Research Fund[6]	53,246	2,236	-56	3,469	58,894
The University of Melbourne Herbarium Fund	475,898	56,579	-482	28,954	560,949
Women in Science of the Environment (WISE) Fellowship	0	108,228	-81	4,618	112,765
Botany Foundation Trust - Total	3,948,019	223,326	-105,531	216,359	4,282,173
Total of the Two Trusts	7,273,750	355,061	-109,164	405,361	7,925,008

NOTES

1. Income includes donations and earnings on investments
2. Expenses include administration charges
3. Revaluation amounts represent the change in unit price of the capital units during 2017
4. Chair vacant in 2017 with departure of Prof. M. Burgman
5. Unrestricted funds support research, including the pollen count, travel awards and events; income figure includes internal transfers to the Fern Research Fund and WISE Fellowship subtrusts.
6. 2017 award expenses to be accounted in 2018

Visit the Botany Foundation web site for information and how to donate:

science.unimelb.edu.au/engage/giving-to-science/botany-foundation

Orchid images courtesy of Dr Michael Whitehead

FOR FURTHER ENQUIRIES

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THE UNIVERSITY OF MELBOURNE