





the big
profile

Words/Denise Gadd

The Royal Botanic Gardens' new guardian believes in beauty before science, but only just.

ALL THAT BLOOMS

Photography/Isamu Sawa

In a world of exotic flowers and verdant foliage, Professor Tim Entwisle is a passionate defender of the humble algae. The soon-to-be head of Melbourne's Royal Botanic Gardens says the simple, rootless plant is much misunderstood – in fact, it's an environmental hero. While a lot of algae can be fairly innocuous, floating around on the surface of rivers, lakes and ponds, it's the nasty ones such as blue-green algae bloom and the red tide that get the most press for closing beaches and wrecking fun. But Entwisle declares algae to be the good guys in our ecosystem and he has devoted a large part of his scientific life to the maligned plant species. It's a passion that has taken him from one side of the world to the other – and now back again.

Victorian-born Entwisle, 52, is leaving his job as executive director of conservation, living collections and estates at London's Royal Botanic Gardens in Kew after two years and returning to Australia with his wife, Lynda, to become director and chief executive of Melbourne's Royal Botanic Gardens next month.

A plant scientist who grew up in Nhill, studied botany at the University of Melbourne (where he met Lynda) and went on to hold senior roles at both Melbourne's and Sydney's Royal Botanic Gardens, Entwisle is no reserved botanical nerd. A keen tweeter and blogger and a coffee nut – he is looking forward to returning to Melbourne's baristas – the father of two's other passions run to indie rock music acts such as the all-female post-punk Savages, the four-piece Palma Violets and San Francisco psych-pop muso Ty Segall. In London, he saw many noisy bands, he says, "much to the irritation of some people".

When he's not drifting in his kayak down rivers to collect algae – since his university days, he has described dozens of new species, two new genera and a new family – or ruminating over seeds or writing books (more than 70), he reads fiction (Martin Amis, Cormac McCarthy) and non-fiction, including *The Mathematics of Life* by Ian Stewart (about the relationship between maths and biology) and *The Old Ways* by nature writer Robert Macfarlane. His latest find was a "wonderful little book" by the late Czech writer Bohumil Hrabal, which he discovered while dining in a Prague pub that had once been a haunt of Hrabal's. "The walls were lined with his quotes and photos so I tracked down his book *I Served the King of England*, which lived up to its title – quirky, funny and insightful."

Entwisle has spent many pleasant hours drifting along the Thames – just as he has done in Sydney Harbour and the Yarra – his hand just under the surface trawling for algae, which he pickles in alcohol or formalin to preserve or dry like a traditional plant specimen. "The first algae I ever collected was from the Yarra catchment in my kayak," he says. "People in Melbourne have worked on some of those algae samples and I'll collect some more when I get there."

So what does he hope to bring to Melbourne's treasured Botanic Gardens? "I would want the Botanic Gardens to feature more strongly in the cultural life of the city," he says. "There is so much cultural 'noise' in London it's hard to rise above the pack. I'd also like to be generating a buzz around plants and gardens, with Melbourne's two botanic gardens (South Yarra and Cranbourne) as the focus. Another major difference between the botanic gardens in London and Melbourne is the hugely diverse and unusual native flora in Victoria, unlike the UK. So, although I'll miss the muscle of Kew, I'm looking forward to leading a quick-witted and wily botanic garden in Melbourne, making it an international

Walk in the Royal Botanic Gardens at dusk with volunteer guides on Wednesdays and Thursdays in February (\$10) and hear resident harpist Michael Johnson every Tuesday (\$25) www.rbg.vic.gov.au

cultural attraction at the same time as leading science-based conservation and catering for those who are simply passionate about plants – or, for that matter, fungi and algae.” Botanic gardens should inspire people with beautiful landscapes, be places of discovery and reflect a strong conservation ethos, showing the use of science in the quest for conservation, he says. “These three principles come out strongly already at Melbourne. It’s an inspiring garden with a strong discovery element and conservation program.”

In Kew, where scientists have given new life to the world’s smallest water lily, which had been endangered to the point of extinction, the conservation program has been vital, he says. “One of the things I will take away from Kew is what botanical gardens can do and how they can solve a conservation problem through science, seed banking and propagation skills, then display and interpret these assets.

“I want a beautiful garden but to me the beauty lies partly in the plants and stories behind them. So if I can introduce even more of the interest and botanical layers to a botanic garden while keeping that beautiful landscape, I’d be doing well.”

Which brings the passionate conservationist to his other great botanical love – seeds. Kew holds billions of them, and Entwisle speaks with intensity about his job overseeing Kew’s Millennium Seed Bank at Wakehurst in Surrey, which featured in David Attenborough’s enlightening television series Kingdom of Plants.

The sight of Attenborough, as rugged up as if he was in the Arctic, wandering through the seed bank’s freezer and enthusiastically explaining its role provided viewers with an insight into the importance of seeds as a resource to the world. Entwisle says that with habitats under increasing threat, conservation seed banking is an important strategy to store genetically important wild seeds. Kew is also involved in a project with the Norwegian government, which runs the Svalbard Global Seed Vault, a secure seed bank on the island of Spitsbergen about 1300 kilometres from the North Pole. The facility preserves a wide variety of duplicate seed samples in an underground cavern and “spare” copies of seeds that are held in gene banks worldwide including Kew and the National Herbarium at Melbourne’s Royal Botanic Gardens. “We’re making sure we’ve got all those relatives so together we can have plants we’re using now and plants we might want to use in 10, 20 or 100 years’ time. It’s not just about storing the seeds but about using them in places such as Africa and also here in the UK, looking at the resistance to some diseases such as ash dieback.

“While we’ve got billions of seeds at Kew, that number doesn’t give the indication of the number of plant varieties – but there are probably 30,000 different kinds there. A few years ago, we celebrated having 10 per cent – that is, one in 10 of all the plants in the world. The goal now is to have 25 per cent – a quarter of the world’s plants into the seed bank by 2020.”

Entwisle, who had several roles at Sydney’s Royal Botanic Gardens before becoming executive director in 2004, was involved in a joint NASA and Sydney Botanic Gardens Trust project that sent four groups of 2523 dried seeds of well-known Australian native plants into space in 2008 to see how they responded to microgravity and ionising radiation. The experiment followed a chance encounter some 11 years ago between NASA

New head of the Bot
Tim Entwisle at the Royal Botanic Gardens in Kew in December. He takes up his new Melbourne role next month.



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Photography/Julian Andrews

Professor Tim Entwisle

Colonial days Melbourne from the Botanic Gardens by Henry Gritten c.1867 shows a view of the city from the gardens at Anderson Street and across the Yarra.

Discovery mission astronaut Dr Gregory Chamitoff, who took the seeds into space, and Dr Penny Farrant, a scientist at the trust. The seeds included some of the Wollemi pine (*Wollemi nobilis*), the dinosaur of the plant world discovered by David Noble in 1994 while abseiling in a canyon of the rugged Wollemi National Park. The extraterrestrial seeds didn’t grow green horns, let alone green shoots. In fact, the seeds didn’t do a thing while languishing in sealed packets on the International Space Station for six months. “The ones we sent into space are still in their packets in Sydney’s seed bank and they’ve become more of an educational thing and will become part of a much grander project due to be finished next year.”

Meanwhile, it’s a volcano that’s been a focus in Melbourne’s Botanic Garden – the revival of William Guilfoyle’s volcano. Part folly, part reservoir, it was created in 1867 by the then-director William Guilfoyle but had been “dormant” for 60 years before it was put into use again in 2010 capturing and storing water.

From little things ... A brief history of the Royal Botanic Gardens

> **1846** Lieutenant Governor Charles La Trobe oversees the transformation of 38 hectares of swampy land into the Botanic Gardens Melbourne.

> **1849** John Arthur, the first curator of the gardens who laid out its first lagoon walk, dies, reportedly of cholera.



> **1853** Ferdinand von Mueller is appointed Victoria’s first government botanist and starts the National Herbarium of Victoria.

> **1857** Von Mueller is appointed the first director of the Botanic Gardens.

> **1867** A Great Waterlily, with leaves 1.5 metres wide, flowers for the first time at the Botanic Gardens. It is, reports *The Argus*, “the object of greatest interest in the Botanic Gardens at the present time”.

> **1873** Von Mueller is removed as director amid criticisms of his scientific approach and replaced by William Guilfoyle.

> **1876** Guilfoyle’s volcano, a reservoir with a 1.3-million-litre capacity, is built to provide water for the gardens.

There's now no danger of the gardens, or its lakes, drying up in the event of another serious drought. The volcano's revamp was an initiative of Entwisle's predecessor, Dr Philip Moors, who oversaw major initiatives at the South Yarra site during his 20-year tenure. Entwisle, who was research manager at the gardens here in 1994 and co-edited and contributed to the four-volume *Flora of Victoria*, says that the 163-year-old gardens are second to none, thanks to Moors' foresight. He's also impressed by the creation of the award-winning Australian Garden at Cranbourne, which happened on Moors' watch. Formerly a worked-out sandmine, Victoria's newest botanic garden contains a treasury of Australian flora. Built in two stages – the second opened in October with 11 precincts featuring 170,000 plants representing more than 850 plant varieties – it sits in the middle of 363 hectares of natural bushland including heathlands, wetlands and woodlands and is a habitat for native birds, mammals and reptiles, some rare and endangered.

Asked about what changes he plans for Melbourne, Entwisle is understandably cautious. "I have lots of thoughts and ideas for Melbourne but it's risky when you get to a new place, before you get grounded by the staff and other people, to say too much. One thing I am keen to do is to raise the gardens in the cultural life of the city, making sure it's seen as one of the cultural highlights of Melbourne."

When he was boy in the Wimmera town of Nhill, his father was a keen gardener but instead of helping him till the soil and nurture the plants, Entwisle was more interested in collecting and germinating seeds. He spent the last two years of high school living in Castlemaine, where his grandfather had a hand in further awakening his interest in plants by taking him for bushwalks through the forest. (There, he's mentioned Castlemaine. Entwisle's mother, who still lives there, keeps asking him why Nhill gets mentioned in interviews but never Castlemaine. "She'll kill me if I don't mention it.")

While his interest lies in botany, seeds and algae, he prefers the administrative side of the business to donning a white coat and huddling over a microscope or tramping around garden beds in heavy-duty boots checking out the plants. "I enjoy being a bit like a conductor of an orchestra, making sure things are working well and enjoying the success of what others can do. You have to do that if you're a CEO or in senior management. With botanic gardens, it's about providing a place where people can achieve things, where you get good scientists and horticulturists doing great things."

A friend for many years, Robyn Williams of ABC Radio's *The Science Show*, says Entwisle is the epitome of tact and diplomacy in a world that sometimes produces eccentric characters. Asked if botanists, gardeners, scientists and the like can be feisty and difficult, Entwisle shows the very tact described by Williams. "They can be passionate. I think that's true of garden people and plant enthusiasts and certainly true of scientists," he says. "I've managed a lot of scientists over the years and I love working with them but passionate people can be difficult to manage. They are wonderful when they agree with you but if they disagree they're equally passionate. So, yes, you have to have those skills." The rest of his family has not trodden the same career path, even though he and Lynda studied botany together at the University of Melbourne. She

Entwisle was involved in a project to send the dried seeds of well-known Australian native plants into space to see how they responded to microgravity.

went on to do an arts degree and become a French teacher. His son, Jerome, and daughter, Emily, studied in Sydney while their parents were in London, Jerome becoming a lawyer and Emily taking up a career in digital-media marketing.

Entwisle's writings on a blog called *Garden Drum* are a celebration of the beauty of plants and trees, with amusing dissertations on bad guys such as a fungus called *Train Wrecker*, despair at the extinction of certain species including Madagascar's palms and explications of male and female hydrangeas – the girls being pink and the boys blue, naturally. While the blog has a scientific bent with liberal use of botanic names, the writing is chatty and charming, a slightly whimsical wander through an enchanted forest.

Does Entwisle judge a plant by its beauty or from a scientific perspective? They have equal footing, he says. "I'm often attracted to a plant because of its beauty such as the beautiful autumn colours you see here at Kew and in Melbourne. Then, when I get up close, being a scientist kicks in and you look at the leaves and think you see some other aspect of it and wonder why it has that flower or why the leaves are so thick or hairy. It's a whole extra layer to enjoying the world around you. So, beauty then science."

The original design of Melbourne's Royal Botanic Gardens owes everything to William Guilfoyle, who was hired in 1873 as director to produce a landscape that was less scientific and more grandly ornamental, after what was perceived to be the disappointing efforts of his predecessor, Baron Ferdinand von Mueller, who was sacked by the local authorities for being too rigid in his plantings and design. Whose side would Entwisle be on? The more scientific Mueller or the creative Guilfoyle?

"I'd love to think I'm a blend of the two. Mueller was fantastic for Australian botany and critical in discovering Australian flora – much of which was sent to Kew. Guilfoyle, of course, created this garden that is one of the most beautifully designed in the world. It's designed as a whole. Very few gardens are like that so both were essential. Therefore, my goal is to bring the best elements of both to my job." Tact and diplomacy personified.

Eight wonders of the Royal Botanic Gardens



Phoenix, Melbourne

The oldest-known cultivated tree in the Royal Botanic Gardens is a Phoenix date palm, says the gardens' senior horticultural botanist, Roger Spencer. Planted in 1839 in a Collins Street garden, the palm was transplanted in the 1880s.

First Fleet find

The National Herbarium of Victoria holds some 1.2 million dried specimens of plants, algae and fungi, including this banksia collected by Joseph Banks and Daniel Solander in 1770 in Botany Bay.

Wattle it be next?

Walkers stumbled on a red wattle in Victorian bush in 1995 and took clippings to the National Herbarium of Victoria. "I was one of the first to see it," says Roger Spencer, "and I must admit it was quite a shock because we do get brought in unusual plants that people find and generally they turn out to be not quite so unusual." The variety of cinnamon wattle is now known as Scarlet Blaze.

To bee or not to bee

Look out – there is a large natural beehive in a Cockscomb Coral Tree opposite the Canna Bed Garden.

Grand recovery

The Separation Tree, where Victorians gathered on November 15, 1850 to celebrate the state's separation from New South Wales, is recovering after being ringbarked by vandals in 2010, says Spencer. "It's been a real success story."

Medicinal plants

The herb garden, originally a medicinal garden, echoes the tradition of physic gardens, says Spencer. "Up until about the 16th century, people were interested in plants mainly for their medicinal uses."

Bloomin' whiffy

Melburnians slipped away from Christmas lunches last year to queue for a rare glimpse – and a whiff – of a flowering Titan Arum, an endangered species from Sumatra that is the largest unbranched inflorescence in the world. The flower, which smells of rotting flesh, collapsed days later.

A stylish welcome

The Nareeb Gates at Entrance D were made in London and stood at the Nareeb Estate in Toorak for 60 years before they were left to the National Trust of Australia and moved to the gardens in 1967.

> **1881** To commemorate the British royal family's first visit to Australia, Prince Albert and Prince George plant windmill palms on Prince Lawn, which is named in their honour.

> **1909** William Guilfoyle retires.

> **1930** The Melbourne Symphony Orchestra plays its first free concert in the gardens.

> **1958** Queen Elizabeth II grants the "Royal" prefix for the Bot.

> **1969** The gardens acquires

land in Cranbourne, which opens to the public in 1989, showcasing Australian plants on its 363 hectares.

> **1980-1982** A state inquiry into the future of the gardens leads to the founding of the Royal Botanic Gardens

Board of Victoria, which manages the gardens for Victorians. The Friends of the Botanic Gardens is founded in 1982.

> **1983** On October 30, around 35,000 people picnic in the gardens to celebrate the

rejuvenation of the Ornamental Lake after director David Churchill's battle to have it dredged and cleaned.

> **2003** After damaging heritage-listed vegetation, a colony of rare grey-headed flying foxes is relocated to Yarra Bend Park in Kew.

> **2010** After 60 years of inactivity, Guilfoyle Volcano is restored and again supplies water to the gardens.

> **2012** Dr Philip Moors, the longest-serving director after William Guilfoyle, retires. Tim Entwisle will take over in March.

Photography/Isamu Sawa, Januzs Molinski

Read Tim Entwisle's blog at <http://www.gardendrum.com/author/tentwisle/> (m)