



Australian Institute of Horticulture Inc.

'Promoting Horticulture - the Profession of the 21st Century'

Green Thumbs & Rooted Cuttings AIH NSW e-Newsletter, November 2009

In this issue:

- A word from the President
- AIH NSW AGM 31 October
- AIH NSW Christmas Party 28 November
- The Young Horticulturist of the Year 2009
- Water Wise Rules
- Climate Action
- *Pseudomonas syringae* – Friend and Foe
- Plant of the Month
- Net-work
- Earthy Trivia
- Snippets
- Places to be, things to do...

A WORD FROM THE PRESIDENT

Hello and welcome to another newsletter. Despite the rain in the first week of October, which gave Sydney more rain than in August and September together, I have had another busy month. It would be great to hear from members further afield and hear how their businesses are performing.

One of the reasons for holding our AGM in the Wollongong Botanic Gardens, is to encourage those members in the southern areas of Sydney and the Illawarra to attend.

It was a great honour to attend the inaugural presentation of the Young Horticulturist of the Year in the Sydney Botanic Gardens and also to present the four finalists with a year's membership to the AIH (see more below).

As part of the National Councils' professional development programme, an urban soils workshop is being held in Brisbane on the 19th November and this might appeal to some of our Northern NSW members (further details see below) or those travelling to Brisbane around that time.

Its just over a year since I became president of NSW and it has been an enjoyable and productive, albeit hectic, year.

I look forward to seeing as many members as possible at our Christmas Party on 28th November which will be fun, and informative.

I would like to extend a warm welcome to our new members, Matthew Gellert, Brian Mackeller, Belinda Searl, Matthew Boorer, Samantha Tucker and the four finalists for the Young Horticulturist of the Year award, Nathan Burke, Julie Cooper, Matthew Donaldson and Lilly van Epen.

The next State Council Meeting is on 26 November, 7.00pm, Acacia Building, Ryde TAFE.

*Richard May
AIH NSW President
presnsw@aih.org.au*

**AIH NSW AGM
Saturday 31 October**

The AGM will be held at the Wollongong Botanic Gardens, in the Discovery Centre at 12 noon.

Lunch after will be catered by the AIH, with tea and coffee provided by the Friends of the Wollongong Botanic Gardens. A guided tour of the gardens will then follow.

Do come and support your association. All welcome.

Go to <http://botanicgarden.wollongong.nsw.gov.au/contactus.asp> for directions and details of the gardens.

Please RSVP asap to nsweoadmin@aih.org.au for catering purposes.

**AIH NSW CHRISTMAS PARTY
Saturday 28 November at 5pm**

We will be throwing our Christmas party in Sydney's newest, picturesque open space – Ballast Point Park - Walama at the end of Wharf Rd, Birchgrove.

Designed by Landscape Architects, McGregor Coxall, Landscape Solutions were responsible for the landscape construction.

Landscape Solutions was given the Landscape Contractors' Association award for Commercial Construction of the Year 2009 for their outstanding gabion walls at the Ballast Point project. These huge feature walls are constructed of stones enclosed in a wire basket. It's not new technology, but this is a gabion with a difference. The filling material is concrete and stone collected from the site itself, crushed and recycled and adorned with artefacts from the site, such as old signs, pressure gauges and pieces of steel and iron. All work has been undertaken on site and the gabion basket has been charmingly integrated into the natural Hawkesbury sandstone outcrops on the site. Go to <http://mcgregorcoxall.com/#/projects/30> to look at some artistic photos of the lovely park.

Tim Buckle from Landscape Solutions will join us for our Christmas Barbie and will tell us about the project.

BYO food, drinks provided.

Please RSVP no later than 20 November to nsweoadmin@aih.org.au for catering purposes.

YOUNG HORTICULTURIST OF THE YEAR 2009

By Ally Jackson



The inaugural Young Horticulturist of the Year Award (YHOY) has just been garnered on Matthew Donaldson for his innovative plans to create a living wall at the Hawkesbury Regional Museum.

The \$10,000 prize had encouraged many fledgling horticulturists to apply, with four entries truly standing out.

The finalists appeared before an industry panel made up of Brendan Moar (from Lifestyle's Dry Spell Gardening), Graham Ross (of Better Homes and Gardens) and Yates' Judy Horton to explain their projects.

The judges had the unenviable task of choosing only one of the four worthy projects presented by the finalists:

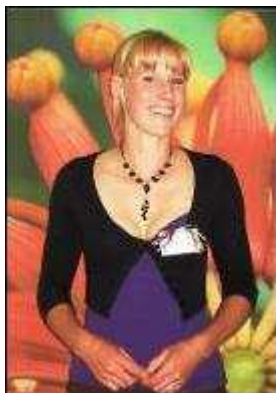
Matt Donaldson runs his own Landscape and property maintenance business called Green Acres. He has a vested interest in vertical gardens, has registered the name 'Living Walls', and since being announced the winner, is well on his way to greening vertical spaces -initially in the Hawkesbury region.

His project involves building a living green wall at the Hawkesbury Regional Museum, depicting the logo of the museum.

Matt wants to "put a new spin on landscaping facades and walls ...dressing up drab buildings, making a more pleasant workplace and streetscape [by] greening concrete jungles".

Having won some media training as well as the prize money, expect to see more of the inaugural winner of 2009's YHOY award, Matt Donaldson. And for years to come, we will welcome the input of other young, inspired horticulturists who walk away winners of the YHOY award. It's a very exciting time to be in horticulture.

Julie Cooper is a 4th year apprentice at Sydney's Royal Botanic Gardens. Her project involved creating a collection of postcards depicting the plant collection of the gardens. Giving the visiting public an "insiders view into how a garden is born, grows, evolves, matures and changes due to environmental cycles and seasons". An artist also, Julie would use her talent as a photographer to capture the beauty of nature and the cycles of plants, seeing the postcards as an extension of the gardens themselves, "a way to communicate beyond the garden walls, what is happening within...A tool to reconnect people with the environment".



Lilly van Epen is a horticulturist and garden designer-in-training. Her enthusiasm for horticulture is contagious and her drive and ambition will take her a long way. Lilly's proposal for YHOY was to develop and expand the horticultural knowledge and understanding of primary school-aged children. A program is already underway at Marsfields' Kent Road Public, which involves kids in 3- 6 class. Lilly's proposal

differed from other school gardens as she intends to implement "structured horticultural lessons that will encourage students to develop a symbiotic relationship with their natural environment".



Nathan Burke is a Permaculture garden designer, he volunteers at Moss Vale's community garden and Harmony community farm and is a member of the Southern Highlands Seedsavers Network.

His project has been borne out of the volunteer work he has done with the St Thomas Aquinas Primary School food garden. As project designer and facilitator of the permaculture food garden he said, "I especially felt that creating a school garden would be an excellent way to teach children the value of food as well as showing them how fruit and vegetables can be produced sustainably and ecologically without straining or damaging the environment, but actually enhancing and enriching it". Nathan's garden design has inspired the kids in the school to become active, responsible gardeners, nurturing and growing their passions for gardening. Being a garden based on the principles of permaculture, they have learnt early in life to recognise the ecological relationship that exists between plants and the rest of the natural world.

AIH NSW President, Richard May awarded all finalists with a year's membership of the AIH.

WATER WISE RULES

From Kerry Schott, Managing Director, Sydney Water

I noticed that in a recent AIH NSW E-Newsletter the president was wondering why water restrictions have been removed in Sydney Water's area of operations.

Basically the water supply and demand is now very close to being in balance. And because of that the Government has introduced sensible Water Wise Rules.

Since the severe drought began in 2003 the NSW Government has been following a Metro Water Plan to make sure that water supply and demand get into balance. The Plan changes as progress is made and as climate change effects become more certain. In essence the Plan involved Sydney Water putting in place a most advanced water efficiency program ; more recycled water; and desalination. This, added to dam storages, has been effective.

On the water efficiency front well over 40% of homes now have water efficient showerheads, aerated taps, dual flush toilets, water efficient washing machines and some have rainwater tanks. In businesses separate saving programs were installed depending on the type of business. And of course Sydney water has been fixing its own leaks. And all these programs will continue. Together these programs save about 24% of water in comparison to use in the early 1990s.

Recycled water is being provided to new large developments (for example at Rouse Hill); to the steel plant and coal loader in Wollongong; and large new recycled water plants are going in to serve Smithfield and Camellia industry and to provide additional recycled water from St Marys for the environment, homes and industry. With many other smaller programs, recycled water will make up 12% of water supply by 2015.

And then there is desalination. This plant will be working from this summer and can provide 15% of water supply and can be doubled in size to meet future population growth and climate change.

So all up there has been an addition to the water supply/demand balance of around 49-50%. The proof is in the figures. Once Sydney Water provided 630 billion litres of water; now we provide 496 billion litres a year. And even without restrictions we do not expect this to rise above 520 billion litres a year. We are just more efficient now and there is more recycling.

Of course this has not happened without price rises. These have been spread over 4 years and the two largest rises have already occurred. There are two more to come and altogether they add to 40% ; but well over half of this is already in customer bills. Financial assistance has increased for those in financial difficulties.

Anyway it does look like being a hot dry summer but the water situation in Sydney is at last under control and so long as people follow the WaterWise Rules there will be no need for more draconian measures.

<http://www.sydneywater.com.au/Water4Life/WaterWise/>

CLIMATE ACTION

The federal government and opposition are currently attempting to find agreement over the proposed Carbon Pollution Reduction Scheme (CPRS) after the opposition blocked the Bill in the Senate in August.

The Alternative Technology Association (ATA), together with a host of other environment and consumer organisations, has mounted a *Make your Climate Action Count* campaign. They are putting together a petition to try and ensure that voluntary actions to reduce emissions by individuals, households and small businesses actually make a difference, by further reducing Australia's emissions.

You can show our leaders how important it is to the Australian community to fix this problem by signing the petition at <http://yourclimateaction.wordpress.com/petition>.

Check out <http://www.projects-and-advocacy/make-your-climate-action-count> and write a letter or email to one of the key politicians listed, highlighting the need for the CPRS to engage all Australians in the climate change challenge!

***PSEUDOMONAS SYRINGAE* – Friend and Foe** From Jonathan Garner

I was listening to an amazing BBC documentary about bio-precipitation and the role bacteria play in weather.

The practice of cloud seeding with certain elements has been popular for quite some time. A fella by the name of David Sands from Montana University proposed the concept of cloud seeding with bacteria in the late 1980's. Since then ski resorts have been utilising bacteria to initiate snowfalls.

The fascinating thing is that this bacteria *Pseudomonas syringae* and its many pathovars find nourishment, and as such undergo accelerated cell division (procreation) on the leaves of plants. Why? and How?

Well. *Pseudomonas* is extremely effective at making water freeeeeeeeze (ice nucleator). It has a protein that makes water molecules stick together at warmer temperatures. In fresh water, without a catalyst to make water molecules stop moving around so quickly to begin the process of becoming a solid, the temperature required is -40°C ish. The freaky thing is *Pseudomonas* initiates ice nucleisation at temps of 0°C to -5°C.

Why does it breed on leaf lamina? I'm glad you asked. *Pseudomonas* initiates frost at warmer temperatures. When ice forms on foliage, the jagged sharp ice crystals penetrate the leaf lamina and as such provide easy access for *Pseudomonas* to dine on the plant without having to personally invade the plant's outer defences. It also side-steps the plant's natural reaction of developing phytotoxins or defense mechanisms when attacked by a parasite.

The downside is that *Pseudomonas* is responsible for types of cankers and other plant diseases. The upside is that *Pseudomonas syringae* is being trialled for its effectiveness at controlling fungal decay during storage of fruits and vegetables.

Back to its ability to initiate freezing process. It's common knowledge that in order for rain to fall, the water molecules in the clouds need to cling together (freeze) so that gravity can bring it down here as rain. Well. The funky thing is that during spring and summer when transpiration is in full swing, the *Pseudomonas* enter the atmosphere via air movement & as hitchhikers within water vapour during transpiration. So the huge populations of *Pseudomonas* that have bred on the foliage & fed on plant material by making water freeze on the foliage to access an easy meal, float up into the atmosphere and initiate precipitation for the plants to take advantage of.

The interesting thing is that science has discovered that certain varieties of crop have the knack of hosting massive populations of *Pseudomonas* compared to other varieties within the same species. Certain cultivars of Barley for instance. With this knowledge in hand, plant breeders will be able to cross these strains with other strains to create cereal crops that will allow more of these cloud seeding critters into the atmosphere and as such improve the necessary initiation of ice crystals at warmer temperatures bringing the opportunity of a natural process of cloud seeding. To take things another step further. It isn't often that nature allows a forest full of diverse plant life to die from drought. It would seem that we are getting closer to having the factual proof that areas with a high quantity of vegetation actually create the rain required for the cycle to continue.

....and a note from Richard May:

One of *Pseudomonas syringae* pathovars (*aesculi*) has been identified as the causal organism of canker in Horse Chestnuts in Europe and trials are being run in Britain using Dialythiosulfinate derived from garlic as a cure. Friend & foe!!

PLANT OF THE MONTH - *Cordyline* 'Red Fountain' PBR. Text and images Peta Trahar MAIH, MAILDM



In 2006, Botanica Nurseries introduced perennial *Cordyline* 'Red Fountain' PBR at the Collectors' Plant Fair, Bilpin. I was keen to try this new plant in my garden at 'Woodgreen', under a mature *Prunus cerasifera* 'Nigra'. The idea was to emphasise and echo the wine red colour of the tree's canopy at ground level. Growing conditions were somewhat challenging – dappled shade, root competition, cold winters, warm summers and a fair dose of westerly wind.

Several 'Red Fountains' were grouped. They have grown steadily after a slow start and this year display fluffy, white, mauve flowers on many long, arching wand-like stems. Garden visitors regularly

admire these *Cordylines*. For us, the reason we'll plant more is the plant's compact, elegant growth habit, evergreen reddish foliage tone, its sheer toughness and now an unexpected bonus, fragrance. The flowers are currently releasing quite a strong sweet, spice-like scent that fills the air. Ten out of ten for performance.

You will see how 'Red Fountain' is growing when you visit the Collectors' Plant Fair, Sydney's Treasured Garden Event, being held at 'Woodgreen', on the 17 & 18 April 2010. Over 40 specialist nurseries will be in attendance and there is a wonderful speaker programme featuring Dan Hinkley specially flown out from the USA and Australia's Trisha Dixon. For more info check the web site www.collectorsplantfair.com, email collectorsplantfair@bigpond.com or phone 02 4567 2026.



NET-WORK

- **Landscape and soils data online**
<http://www.environment.nsw.gov.au/soils/spade.htm> DECCW's SPADE provides detailed and accessible information about the condition and capability of the state's landscapes and soils. Web users can use a map-based tool to find soil profiles for particular locations, and retrieve site reports containing detailed landform and soil information.
- **Serious Boys Toys.** See <http://www.turbodigger.com.au/Biolift.html> for some innovative equipment.



EARTHY TRIVIA, courtesy of Jonathan Garner

- Soil can act as either a sink or a source of greenhouse gases. An estimated 30 percent of the carbon dioxide, 70 percent of the methane, and 90 percent of the nitrous oxide released to the atmosphere each year pass through the soil.
- Although the soil surface appears solid, air moves freely in and out of it. The air in the upper 8 inches of a well-drained soil is completely renewed about every hour.
- 2 acres of improved pasture during the growing season can have more than 30,000 miles of roots. This is greater than the circumference of the Earth.
- Modern farming practices that minimise soil disturbance (ploughing) and return plant residues to the soil, such as no-till farming and crop rotations, are slowly rebuilding the nation's stock of soil organic matter.
- Of the carbon returned to the soil as plant residue, about 5 to 15 percent become tied up in the bodies of organisms and 60 to 75 percent is respired as carbon dioxide back to the atmosphere. Only 10 to 25 percent is converted to humus in the soil.

- Ponder on this for a wee while. Plants don't ask for much. To grow, all they need is the right proportions of four basic things, sunlight, water, air and nutrients. Three of these needs are provided to them via the soil. Considering 75% of plants needs come via the soil. That would make the soil the most important thing in your garden. Why is it then that the most important part of the garden is in most cases neglected or misunderstood?
- "We know more about the movement of celestial bodies than about the soil underfoot."
---Leonardo Da Vinci, circa 1500's

SNIPPETS...

From CSIRO's Science by Email, 16 October 2009. Dusting off a feast fit for a fish.

The massive cloud of dust that descended on the east coast of Australia led to an explosion of life in nearby ocean waters and even contributed to the removal of a few million tonnes of carbon dioxide (CO₂) from the atmosphere. On most days, 20 micrograms of dust per cubic metre drifts through Sydney's air. On 22 September, there were 15 400 micrograms. The CSIRO estimates 16 million tonnes of topsoil were lifted from outback New South Wales and South Australia and carried east by strong winds. Such an unusual combination of factors occurs once every 70 years, although global warming could see it become a little more frequent. In addition to weathered particles of rock, soil consists of the microscopic remains of dead organisms. As protein breaks down, it forms the chemical 'urea', which is a useful source of nitrogen for growing plants. Given such nutrients are usually rather scarce in Australia's coastal waters, the tonnes of dust that fell into the water provided a feast for the phytoplankton. http://en.wikipedia.org/wiki/2009_Australian_dust_storm
<http://www.csiro.au/resources/dust-storm-animations.html>

From Farmonline – The Land an article by Kelly Burke on 25 October about endosulfan, a highly toxic and persistent organochlorine insecticide which has been banned in more than 60 countries but which is still permitted for use in Australia. Although restrictions on the insecticide's use were imposed by Australian authorities in 2005, it is still permitted for use on a wide range of citrus fruit, vegetables and cereals, despite a global trend of banning endosulfan outright. However, as one of the 166 countries that are signatories to the Stockholm Convention on Persistent Organic Pollutants, Australia faces the likelihood of being forced into adopting a total ban, with the convention's review committee in Geneva voting to prepare a risk management evaluation, the final step before proscribing endosulfan internationally.

Read more at <http://theland.farmonline.com.au/news/nationalrural/agribusiness-and-general/general/treaty-may-force-an-end-to-endosulfan/1658516.aspx>

From ScienceDirect - The Journal of Environmental Management:

Testing the capacity of clothing to act as a vector for non-native seed in protected areas by Ann Mount and Catherine Marina Pickering, School of Environmental and Applied Sciences, International Centre for Ecotourism Research, Griffith University, Gold Coast, Queensland.

The effect of different types of material (sports vs hiking socks), or different items of clothing (boots, socks, laces vs legs) or the same item (socks) worn in different places on seed composition were assessed in Kosciuszko National Park, Australia. A total of 24,776 seeds from 70 taxa were collected from the 207 pieces of clothing sampled, with seed identified from 31 native and 19 non-native species. Socks worn off-track collected more native seeds while those worn on roadsides collected more non-native seeds. Sports socks collected a greater diversity of seeds and more native seeds than hiking socks. Boots, uncovered socks and laces collect more seeds than covered socks and laces, resulting in 17% fewer seeds collected when wearing trousers. With seeds from over 179 species (134 recognized weeds)

collected on clothing in this, and nine other studies, it is clear that clothing contributes to unintended human mediated seed dispersal, including for many invasive species.

<http://www.sciencedirect.com/science>

PLACES TO BE, THINGS TO DO....

ANBG Lunchtime Talks

The Australian National Botanic Garden Lunchtime talks are held every Thursday in the Theatrette, 12.30 to 1.30pm.

5 Nov Dick Schodde, Birds

12 Nov John Mackay, The Canberra Arboretum – 2013 and beyond

19 Nov Rosemary Purdie, Charles Darwin – Botanist Extraordinaire

26 Nov Heino Lepp, Fungal Illustration – 600 odd years

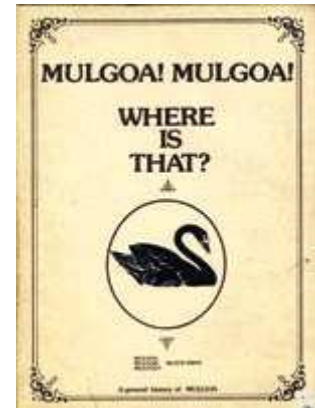
Mulgoa Bicentenary

Saturday 7 November

This year marks the Bicentenary of the land grant at Mulgoa to Edward Cox on 1st November, 1809, confirmed by Governor Macquarie on 1st January, 1810.

To celebrate the occasion there will be a village fete, buses visiting historic homes and gardens, National Parks and Wildlife Discovery Tours, and much much more.

Celebrations will be opened at 11 am in Mulgoa Park by Her Excellency Professor Marie Bashir AC CVO, Governor of New South Wales.



Rainforest Plants for Sydney Gardens

Saturday 14 November, 10.30 am – 12 noon

Maiden Theatre, Royal Botanic Gardens

Peter Nixon of Paradisus Garden Design and Convener of the Designer Growers Network will discuss species of rainforest plants suitable for Sydney gardens sourced from Brazil, Uruguay, Southern China, Mexico, Madagascar and our own east coast Australian natives. The Growing Friends Nursery will be open from 9am and after Peter's talk with rainforest plants available. \$18, Friends \$12, includes morning tea at 10.30 am.



Pictured is *Clerodendrum tomentosum*, Lolly Bush, photo from Dingo Creek Rainforest Nursery

Bookings Essential Tel 9231 8182 or friends@rbgsyd.nsw.gov.au

First Fleet Artist – George Raper

Wednesday 18 November, 10.30 am – 12 noon

Maiden Theatre, Royal Botanic Gardens

George Raper was a midshipman on the Sirius of the First Fleet, whose talent and opportunity combined to produce what is now one of the National Library of Australia's most treasured collections, the Ducie Collection of First Fleet Art. The collection



includes 34 botanical paintings of which around 20 appear to be the first European depiction of the species. Raper's ability to observe and depict the captivating beauty of Australian plants and birds from the Port Jackson area was heightened by his youthful enthusiasm for the novelty of what he witnessed. In this illustrated talk, Curator of Pictures at the National Library of Australia Linda Groom will describe Raper's life and role in the First Fleet and discuss how comparison of his depiction of flowers with that of other artists helped authenticate the collection, which is unsigned. Copies of her book *First Fleet Artist* will be on sale at a special Friends' price. \$18, Friends \$12, includes morning tea at 10.30 am

Bookings Essential Tel 9231 8182 or friends@rbgsyd.nsw.gov.au

AIH Urban Soils Workshop

19 November 2009, 8.30am - 12.30pm

University of Queensland, St Lucia Campus.

This workshop will be presented by the highly acclaimed soil scientist and honorary research consultant Dr Gunnar Kirchhof. Costs: AIH members and Alliance Partners \$88.00, Non-members \$110.00. Includes: Workshop notes & morning tea. Limited spaces. **For further information visit <http://www.aih.org.au/aih-urban-soils-workshop/>**

Foxground Rainforest Workshop

Sunday 22 November, 10.00 am – 2.30 pm

AIH NSW members are invited to join the Friends of The Gardens at Ann and Geoffrey Long's rainforest property in the Illawarra Ranges behind Berry to learn about sub-tropical and warm temperate rainforest species.

Ecological and environmental consultant, Dr Kevin Mills will lead an interpretative walk in virgin rainforest. Please note that the walking paths are rough bush tracks so wear sensible walking shoes. Copies of Kevin's book *Rainforests of the Illawarra District* will be available for purchase. Practise your keying-out skills and identify climbing plants using *Rainforest Climbing Plants. A field guide to their identification* by Gwen Harden, Bill McDonald & John Williams.

Pictured is [Fieldia australis](#), photo by Hugh Nicholson

More information about rainforest plants can be found at Gwen Harden's site www.rainforests.net.au and Hugh and Nan Nicholson's site www.rainforestpublishing.com.au



Cost is \$35 for AIH members and Friends of The Gardens (non-members \$45), includes morning tea at 10.00 am. Bring a picnic lunch. Details will be provided with booking confirmation. Numbers are limited. Bookings are essential and can be made through the Friends of The Gardens: 9231 8182 (please provide your AIH membership number).

E algis omnia – from algae everything



**Thursday 26 November, 10.00 am – 12 noon
Maiden Theatre, Royal Botanic Gardens**

While Dr Tim Entwisle is the Executive Director of the Botanic Gardens Trust and the New South Wales Government Botanist, he is also an Adjunct Professor in the School of

Biological Sciences at The University of Sydney continuing his study of algae. His PhD concerned the discovery and classification of a group of algae never studied before in this country. In this illustrated talk, Tim will relate how he got into algae and tell us a little about the world of freshwater algae in Australia with maybe a visit to the ponds in the gardens after his talk to better investigate the slime.

Pictured is Tim and Fat Choy, a blue-green alga. Photo by Jaime Plaza

\$18, Friends \$12, includes morning tea at 10.00 am. **Bookings Essential Tel 9231 8182 or friends@rbgsyd.nsw.gov.au**

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If you would like to contribute to your newsletter with comments, articles, places-to-be, suggestions – or if you would like to be removed from our mailing list - then please contact the editor: Beth Stokes beth.stokes@bigpond.com The deadline for the December/January issue is 20 November