A Good Weed

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In This Issue

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PO Box 438 WAHROONGA NSW 2076

Secretary: Alan Murphy
Assistant Secretary: Warwick Felton

Editor: Lawrie Greenup
Assistant Editor: Hanwen Wu

#60 Spring 2012

Pellitory *Parietaria judaica* inflorescences showing flowers at different stages of development. Brown shrivelled stigmas indicate the end of female receptivity and the start of the perianth lengthening phase. Uncurled stamens of bisexual flowers have open white anthers which have released their pollen.

See article pages 5 & 6 **Image: Lawrie Greenup**

President's Column

Many activities are occurring at the moment, and all society members are encouraged to participate or provide comment. If you feel that there is an opportunity for the society to do something new, the executive committee would appreciate your input.

Linkages are being built with the Ecological Society of Australia to investigate how the two organisations can collaborate for the benefit of both memberships. Hillary Cherry has been instrumental in building this communication for the society. A joint session is to be held at the forthcoming weeds conference, and the ESA conference in December offers another opportunity to continue to build linkages.

I remind all members that the 18th Australasian Weeds Conference will be held in Melbourne in early October. This is an excellent opportunity to network with other weeds workers and listen to a range of presentations on the latest research. The Council of Australasian Weed Societies (CAWS) holds their AGM at the conference, and this is an opportunity for any weed society member to attend and contribute to the direction of CAWS activities.

A matter under discussion at the moment at CAWS is the frequency at which the Australasian Weeds Conference is held. Since 2002, it has been held biennially. However, weed research was enjoying the presence of a weeds CRC at this point in time, a luxury which has since disappeared. A reduction in access to national funding for weeds has lead to a concomitant reduction in weeds activities, including attendance at conferences. A proposal is being considered to revert to the former triennial conference frequency. Contribution of feedback from members is most welcome.

Planning is well under way for the 2013 NSW Weeds Conference to be held in Corowa. More details about this conference are provided later in this newsletter.

There is progress behind the scenes with redeveloping the society website. Once launched, the new website will contain a greater depth of information and some new features. One new feature being planned is a comments form which will allow society members to more easily contribute ideas and feedback to the committee.

Happy Weeding.

Rex Stanton (Dr)
President

New Members

The Society would like to welcome the following two new members:

Xiaocheng Zhu (PhD student)
Charles Sturt University
Wagga Wagga

Peter Langdon
Department of Agriculture, Fisheries & Forestry Canberra

Members' benefits include:

- a quarterly newsletter,
- reduced registration fees for Society functions,
- reduced membership fees for students, and
- the opportunity to become involved in all of the Society activities.

2013 NSW Weeds Conference

'*Weeds have no Boundaries*'

Corowa Lagoon on the Murray River - one of the many tourist attraction in the Corowa District.

Planning is well under way for the 17th New South Wales Weeds Conference to be held in Corowa, 9-12 September 2013. The organising committee is some dozen or so members strong, with representatives from the Weeds Officers Association, the Society, NSW Department of Primary Industries, Local Government and CMAs.

The theme for the conference is '*Weeds have no Boundaries*', reflecting the location for the conference and the potential to attract delegates from several states. As well as encompassing the issues surrounding legislative boundaries, the ability of weeds to move around the landscape can be addressed.

A conference website is planned to be up and running by the end of the year, allowing delegates plenty of time to access information. A call for abstracts will be issues later this year, so everyone is encouraged to consider submitting material.

It is anticipated that 250 or more delegates will be attending the conference. It is expected that a number of delegates will be flying into Albury airport, some 40 minutes drive east of Corowa. The organising committee is investigating options to provide a courtesy bus to shuttle delegates between Albury and Corowa, depending on flight schedules and demand for the service.

The winners of the biennial **Buerckner and Stephenson Awards** will be announced at this conference. The Society is one of the major supports of these awards, named in honour of Council Weed Officers tragically killed in a helicopter accident in 2006. The awards acknowledge the work of NSW Weed Officers and their outstanding contribution towards protecting NSW from the impacts of weeds. Winners of these awards who have been a financial member of the Society for over twelve months are eligible to receive a $500 prize from the Society.

Corowa is a picturesque rural town located on the NSW/Victorian border. The town is surrounded by a thriving and diverse agricultural sector, including many wineries in the neighbouring Rutherglen region. Golf courses and riverboat hire are a major tourist attraction for the region. A partners program is being developed to allow delegate's partners an opportunity to experience the cultural and scenic wonders of the region while also sampling local produce.

Rex Stanton, Organising Committee Member.

Oxalis corniculata

Glush Weed *Hygrophila costata*
A note from Geoff Sainty

This is a real weed! If you saw it in action in streams and headwaters of Lake McDonald, Cooroy, Qld—or more recently thriving in one large wetland in Centennial Park, Sydney—you would know what I mean. It is a declared noxious weed in NSW.

Glush weed infestation in Centennial Park, Sydney. Image: Geoff Sainty.

Like many good weeds it belongs to Acanthaceae. It spreads by seed—although I have tried a few times to collect them and failed—and pieces. Flowers are white, prolific, in axillary whorls. Observed to flower (in Sydney) from October to April.

Image showing axillary whorls of white flowers, square stems and decussate leaves. Image: Geoff Sainty.

It grows to 2 m high when supported by other plants; scrambles and floats, rooting at each node along trailing stems into soil or water. Upper stems are square in cross-section and leaves are rough to touch.

Like Alligator weed, leaves are in pairs borne at right angles to each other (decussate), a key identification character.

There are 4 *Hygrophila* species in Australia, 3 introduced and 1 native species. *H. polysperma* and *H. triflora* are naturalised and *H. polysperma* is a well known aquatic weed in Florida. The native species, *H. angustifolia*, is widespread and common in the 'top end' and along the coast of Queensland just extending into the far north coast of NSW. Separating *H. costata* from *H. angustifolia* may be an issue. A simple difference is in the shape of the leaves; the latter has longer and narrower leaves, but if you don't have the other identified species to compare it with— watch out!

Hygrophila costata is a valued native plant in Florida—assuming we are talking about the same taxon. In Australia it has dominating weedy characteristics which may be because it is limited by bio-control agents in Florida and these are not here. By the way I stuck a length of stem in a drink bottle with nothing more than tap water to feed on, and from April to September it thrived with lots of roots. It retained most of its leaves during the winter of 2012 in Centennial Park , but this place is frost free.

I am not sure what research has been done or has started on this plant, but more needs to be known about its biology and phenology.

Acknowledgement: John Hosking for comments & corrections.

Further reading:

Flora of NSW, Vol. 3, 1992, pp 606–607 for *Hygrophila angustifolia*.

Waterplants in Australia, Sainty and Jacobs, 4th edition, pp 232–233.

Center for Invasive and Aquatic Plants, University of Florida IFAS, web site http://plants.ifas.ufl.edu

Weed Alert, NSW Department of Primary Industries.

Further Information:
Geoff Sainty
Sainty and Associates Pty Ltd
Email: **geoff@sainty.com.au**

Have you renewed your membership subscription for 2012?

Recognising & Identifying Grasses Workshops

Recognising Grasses Workshop

This one day workshop has been developed to allow participants to be able to recognise common weedy, native and desirable introduced grasses within an area and understand what they may indicate about the environment and management of a site. Participants will develop the skills and knowledge to recognise 12-14 grasses using only a few features and collect useful samples for identification. The day involves both indoor and outdoor activities (weather permitting).

What is covered in the Recognising Grasses workshop?

This 1 day workshop will provide participants with skills in grass recognition including:

- Understanding grass structure
- How to collect useful grass samples and records
- Where and how to send samples for identification
- How to recognise a range of local grass species
- The tools to recognise grasses in the future

This one day workshop has been developed to extend participants' knowledge and skills beyond the basic recognition and collection techniques developed in the Certificate ll Recognising Grasses workshop. Participants will develop the skills and knowledge to identify grass species anywhere in NSW using botanical keys and to develop a professional quality reference herbarium.

Identifying Grasses Workshop

What is covered in the Identifying Grasses workshop?

This 1 day workshop will provide participants with skills and knowledge in grass identification including:

- Understanding grass structures needed for grass identification
- Preparing equipment and resources for grass collecting
- Methods for collecting and handling of grass samples
- Records, ethics and permits for collecting
- Making a professional herbarium
- Identifying grasses using botanical keys

Who should attend?

This course is designed for people who need to identify grasses, develop recognition features for grasses in their local area and/or create a reference herbarium for themselves, staff or landholders. It would be especially useful for officers who want the ability to identify incursions of harmful species at an early stage. Participants need to have attended **Recognising Grasses** workshop or have equivalent knowledge to undertake this course.

Cost

The workshop fees are **$225 per person** for Recognising Grasses and **$295 per person** for Identifying Grasses ($295 fee includes Grasses of NSW & hand lens). The fees include course notes, tuition, post course assessment, lunch, morning & afternoon teas.

Accreditation

The workshops provide participants with the opportunity to undertake formal assessment tasks during the workshops as they are nationally accredited course. Assessment is optional. Workshop numbers will be limited to **15** participants and will be held at Camden, Dareton, Yanco, Dubbo, Tamworth and Nowra.

Contact

Annette ten Broeke 02 6938 1671
Email: **annette.tenbroeke@dpi.nsw.gov.au**

Pellitory – insights on an urban weed's sophisticated adaptability to environmental factors

Bronwyn Stead

Pellitory, *Parietaria judaica L,* known also as asthma weed, creeping pellitory and pellitory of the wall, is a long-flowering, wind-pollinated and allergenic urban weed of the nettle family, native to coastal Mediterranean countries.

Introduced to Sydney a century ago it is now found in five of our cities, and is a declared Class 4 noxious weed in the Sydney metropolitan region. Cause for concern is its impact on human health, particularly the release of its highly allergenic pollen, compounded by a long flowering period extending almost year round. In Sydney it is known to grow, flower and set seed within a month and can reproduce vegetatively from lateral rhizomes.

Pellitory on brick wall, Leichhardt. Image: Bronwyn Stead

Pellitory as a cause of allergic disease in Sydney was first reported by Bass and Bass in 1990. In urban areas of its origin pellitory grows abundantly and the pollen long recognised as a major source of allergen in pollinosis (D'Amato et al. 2007, Fotiou et al. 2011).

Pollen grains have been found to contain allergenic water soluble proteins known to trigger allergic rhinitis and asthma (D'Amato et al. 2007). Four have been characterised and listed on the *IUIS Allergen Nomenclature Database*. This article seeks to highlight aspects from recent studies on its flowers and pollen.

Pellitory produces many flowers along its stems. Three to ten bisexual flowers cluster around a single, unisexual female-only flower in the leaf axils.

Pellitory inflorescence showing the shrivelled stigma/style of a central unisexual flower, surrounded by four bisexual flowers in different stages following female receptivity: one swollen and unopened, (bottom right), stigma gone; the others with split perianth of which one had uncurled stamens and anther dehiscence was underway. Image: Lawrie Greenup

Timing of the male and female phases in an inflorescence is a staged process. Female receptivity lasts up to six days with the bisexual flowers receptive three days after the central female flower and sequentially (Franchi et al. 2007).

The male phase begins when the perianth enlarges, enclosed anthers swell and the stigma shrivels. Timing of pollen release from individual bisexual flowers is staged over five days, depending on environmental conditions, and occurs mostly in the morning (Franchi et al. 2007). Certain combinations of relative humidity (RH) and temperature cause the stamens to swell and mature. Under warm and dry weather conditions the anthers dehydrate, decrease in volume, and dehisce synchronously to disperse the pollen.

Pellitory has an explosive launching mechanism of anther dehiscence due to the spatial arrangements. Stamens are juxtaposed to each other and bent inward. Rapid uncurling of the filaments causes the stamens to suddenly spring upwards to propel pollen away from the parent plant and into air currents (Franchi et al. 2007). Pellitory is considered self-compatible so pollen need not travel large distances. The anthers contain a mix of starchless and starchy grains, in proportions influenced by environmental conditions. Pollen germinates rapidly, especially the starchless grains (Franchi et al. 2007).

The quantity of pollen produced and its viability varies according to site conditions with amounts ranging from 450 – 310,000 grains per flower (Fotiou et al. 2011). Plants growing under hot, dry conditions with long light exposure produce the most pollen. This is thought to be an adaptive response to counter viability loss since pellitory pollen is partially hydrated at shedding (Fotiou et al. 2011).

Pollen viability is affected by relative humidity (RH). The thin-walled and partially hydrated pollen (at release) is susceptible to water loss at low RH, decreasing viability. At higher RH of 50% or more, survival is greater and viability post shedding is retained for longer periods (Franchiet al. 2007).

Another influence on pollen viability has been observed in plants growing near high traffic sites. Pellitory accumulates heavy metals (copper and lead) and these have been shown to have a stimulatory effect on pollen viability (Fotiou et al.2011).

Pellitory has a long association with human activities in environmental disturbance and urban expansion. In the first century Dioscorides, a Greek physician and botanist observed that it grew on 'mounds and walls' and had 'little seeds, catching hold of cloths'; no doubt referring to its sticky hairs.

Today pellitory thrives in a diversity of urban environments - hot, dry waste places, pavement crevices, walls, drains, all soil types and light intensities. Such adaptability reveals its high phenotypic plasticity – and management challenges.

References:

Bass D A, Bass D J 1990, *Parietaria judaica* L. A cause of allergic disease in Sydney. A study of habit and spread of the weed, *Review of Palaeobotany and Palynology*, 64, 97-101.

Franchi GG, Nep M, Matthews M L, Pacini E, 2007, Anther opening, pollen biology and stigma receptivity in the long blooming species, *Parietaria judaica* L. (Urticaceae), *Flora*, 202, 118-127.

Fotiou C, Damialis A, Krigas N, Halley J M, Vokou D, 2011, *Parietaria judaica* flowering phenology, pollen production, viability and atmospheric circulation, and expansive ability in the urban environment: impacts of environmental factors, *Int J Biometeorol*, 55, 35-50.

International Union of Immunological Societies (IUIS), www.allergen.org

D'Amato G, Cecchi L, Bonini S, Nunes C, et al, 2007, Allergenic pollen and pollen allergy in Europe, *Allergy*, 62, 976-90.

Dioscorides P, circa 40 - 90 AD, Book Four: Other Herbs & Roots, *The Herbal of Dioscorides the Greek* http://www.travolekar.ru/arch/diasc_4.pdf

Parietaria judaica, Sydney Weeds Committee.

Further Information:

Bronwyn Stead
BHS Legal Pty Limited
Email: **bhslegal@bigpond.com**

Bisexual pellitory flower following dehiscence showing the white anthers. Image: Lawrie Greenup

Stigmas of pellitory flowers following the receptivity period when it fades from dark pink to white (A), and shrivelling (B, C). The fine 'spikes' visible on the stigma (A) are papillae or intact surface cells, typical of dry stigmas. Papillae develop after the stigma emerges and change with time. Pellitory has a dry stigma (Franchi et al). Partially split and lengthened perianth of a bisexual flower, (C). Image: Lawrie Greenup

Biocontrol agents released for cat's claw creeper

Ongoing releases of the cat's claw creeper tingid, *Carvalhotingis visenda*, have been undertaken from Grafton Primary Industries Institute, with quite a lot of interest for the agent. It has been released at a large number of sites throughout the distribution of cat's claw creeper in NSW. Damage has been found at many of these sites but it is too early to determine the long term impact of this insect.

Cat's claw creeper tingid, *Carvalhotingis visenda.* Image: BQ

Cat's claw creeper tingid damage in the field. Image: Royce Holtkamp

The leaf-mining buprestid beetle, *Hylaeogena jureceki*, has been approved for release. It was officially released from Biosecurity Queensland (BQ) quarantine by AQIS on 18th July 2012 and culture increase and field releases will commence shortly. BQ have conducted exploration for cat's claw creeper and Madeira vine biocontrol agents in Brazil, Paraguay and Argentina, along with researchers from South America. These surveys have identified some promising agents for both cat's claw creeper and Madeira vine in Paraguay.

Cat's claw creeper leaf-mining buprestid beetle, *Hylaeogena jureceki* Image: BQ

Cat's claw creeper leaf-mining buprestid beetle, *Hylaeogena jureceki* damage Image: BQ

Cat's claw creeper biocontrol research has been in progress since 2001, and since then BQ have tested four agents and released (or have approval to release) three of them. They have released two of the approved agents, the leaf-sucking tingid and the leaf-tying moth, in several sites in northern NSW. In addition they have also supplied starter cultures of both agents, and provided training to various community groups in northern NSW.

Source:

NSW Environmental and Aquatic Weeds Biological Control Taskforce Newsletter. August 2012.

Invasive Species Seminar

"Invasive plants as catalysts for the spread of human parasites"

The Institute for Conservation Biology and Environmental Management at the University of Wollongong and the Weed Society of New South Wales present:

Professor Richard N. Mack from the School of Biological Sciences at Washington State University, USA

Discussing invasive plants as catalysts for the spread of human parasites

Please join us on Thursday 18th of October at 12.30
Building 35: RmG20 - University of Wollongong

Please contact Julie for more information
juliew@uow.edu.au
or
www.uow.edu.au/science/biol/icb

or for a campus map
www.uow.edu.au/about/campusmap

A sandwich lunch will be served following the seminar.
Please RSVP to Julie at email address above to confirm your space.

THE WEED SOCIETY
OF NEW SOUTH WALES INC.

'It's not too late for you to register!' Conference Website: www.18awc.com

Red Lantana

Poems by Peter Michael (Dr)

on the fate of a much-loved red lantana community on Beecroft Road, adjacent to Epping Railway Station

The Red Lantana (1)

no-one knows how much
I loved the spring appearance
of red lantana
flowering for months and months
below overhanging privet

clear-fellers have come to the road verge
trees cut the stumps poisoned
the earth mulched with shredded timber
planted with native seedlings
to form a roadside garden
making room for signs on the railway fence
hanging skew-whiff promoting school fetes
soccer and cricket clubs and the Rock'n Soul Choir
but my lantana is sending out bright green sprouts
getting stronger day by day

how long must I wait
to see red flowers again
who will come and help
save the shoots of this scarce plant
from the hands of the weeders ?

The Red Lantana (2)

meanwhile the weeds in the roadside garden
kept on growing until the plantings were scarcely visible
the gardeners showed no signs of any further interest
it looks like a text-book ruderal collection
cobbler's pegs, fleabane, black-berried nightshades,
sow thistle, prickly lettuce, plantain and inkweed
offset by a few planted Acacia, Indigofera, Grevillea
and regrowth of privet and Bursaria spinosa
the common lantana is spreading
its untidy prickly arms here and there
but would you believe it

my red lantana
has broken through the spaces
with its tidy crown
displaying its bright flowers
to all who take time to look

The Red Lantana (3)

its continuing growth
during the summer and autumn
has pleased me greatly
with bright yellow cassia
providing a good contrast

now the marauders have come again
slashing down everything within a metre
from the road and from the railway fence
leaving on the sloping bank a motley mixture—
a few of the recently planted species
with others long-established or native
like Bursaria spinosa and broad-leaved privet
and the South African Grewia occidentalis
perhaps a remnant from an old nursery
all this held together with straggling common lantana
the annual herbaceous plants have mostly died off
but the red lantana keeps its regular shape
while it slows down for the winter

what will they do next?
my friends in the neighbourhood
are really concerned
they have no real love for weeds
when will they finish the job?

The Red Lantana (4)

I could not believe
seeing at the end of June
the roadside garden
demanding my attention
and stimulating my pen

perhaps when the traffic was quiet
marauders had hacked the lantana and privet
and dragged them to either end
colour-coded herbicide was used again
on the newly cut stumps
the bent and bruised trees and shrubs
now tied to stakes feeling the dry cold
surely they have suffered enough
through months and months of neglect

the red lantana
with its tightly held flowers
in a few bundles
peeped through the residues
sure that it will shoot again

"Years of collecting toxic weeds for the veterinary classes at Sydney University taught me where to find the beautiful red lantana at a convenient site. Its threatened loss was sad indeed!" Peter Michael (Dr)
The first part of the poem was published in A Good Weed #57 Summer 2011/12

Herbicide Resistance Time to Reflect!

Warwick Felton

In recent years herbicide resistance has been a high priority issue for funding with many examples quoted. What must be questioned is whether it is tolerance or resistance to herbicides for weeds that were never reliably controlled. For example, control of fleabane, windmill grass and common sowthistle was always variable to poor with commonly used rates of glyphosate, and liverseed grass was never effectively controlled with atrazine. These all have been quoted as developing resistance, despite not always being listed on the herbicide label.

Herbicides that have revolutionised weed management in the last 60 years include 24D, 245T, picloram, atrazine, trifluralin, alachlor (in the US not Australia), paraquat, diquat, triallate, glyphosate, dichlofop, and sulfonyl ureas. Many still are widely used.

In managing long term conservation research sites for up to 20 years in northern NSW glyphosate was a key herbicide in no-till fallow management treatments. It was essential to develop effective mixtures with glyphosate to control the spectrum of weeds encountered. Furthermore, in-crop herbicide selection was important, particularly for weeds that emerged after sowing. There were certainly some weeds that became more abundant (for example common sowthistle) within the management systems being used. Stubble retention compared to stubble burning certainly increased the importance of weeds with wind blown dispersal. What was interesting was the reduction in weed density at all of the sites which was attributed to the improved management at the sites.

Detailed surveys showed that about 20% of the fallow weeds in northern NSW were not reliably controlled with recommended rates of glyphosate. Despite this some "advisors" suggested that the best additive to the spray mix was more glyphosate.

Professor Gail Wicks, University of Nebraska, was a pioneer in weed management and made numerous trips to Australia to undertake collaborative work in northern NSW. He concluded that 90% of herbicide effectiveness is associated with their application:

- Choosing the right herbicide(s) and application rate(s)
- Timing of spraying – weed size, stress (especially during summer)
- Spray equipment (correct nozzles) and calibration
- Water quality
- Accurate application – for example use tramlines
- Rainfall after spraying - for example, rain 4-7 days DAS did reduce control of liverseed grass but the 14 day DAS treatment reduced control five-fold.

When spraying railway lines, road verges and fencelines a significant rate of herbicide "edge effect" occurs and weeds receiving a reduced rate of herbicide and not being controlled. Also, the amount of spraying required along roads and railway lines can mean spraying is often done when conditions are less than ideal. Both increase the likelihood of survivors from the herbicide application, leading to resistance developing within the weed population.

In conclusion herbicide resistance problems are an indication of management issues and not simply a need to focus on a particular weed species.

Professor Steve Powles at the 1987 Australian Weeds Conference in Sydney said in relation to the use of herbicides – "when you are on a good thing, don't stick to it". I agree.

Contact:

Warwick Felton
(*formerly Senior Research Scientist, Tamworth Agricultural Institute)*

Email: **warwickfelton@optusnet.com.au**

Early Bird Registration close 1 October 2012

Standard Registration open 2 October 2012

Weeds are opportunists

Jonathan Pearson

Weeds are opportunists, often colonising bare ground which has been disturbed by animal activity, opened up by extreme weather events or through the use of non-selective herbicides.

Since the mid-seventies, Roundup, a member of the glycine mode of action grouping, brought chemical control techniques to the forefront of weed management programs. This enabled arable farmers in drier areas to move to a no-till system, with the additional benefit of preserving soil moisture and nutrients.

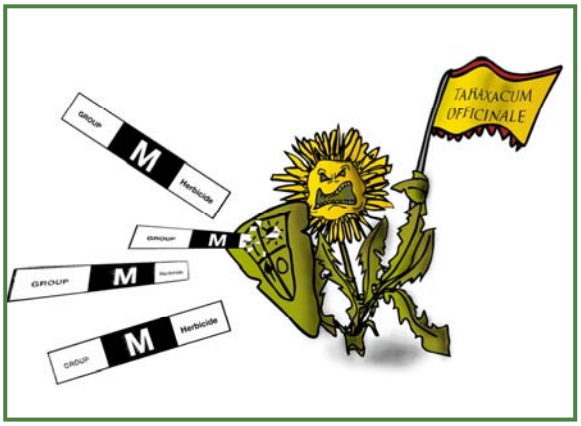
Roundup's patent protection ran out 12 years ago and since then there is now a multitude of glyphosate formulations on the market, which seem to progress ever upward in active concentration, from 360g/l right up to 570g/l and beyond. Council and shire workers, as well as domestic gardeners have also embraced this versatile chemical, both for its widespread efficacy and relatively low toxicity, with an acute oral $LD_{50,}$ less than that of table salt.

As with all revolutions, they often become a victim of their own success and repeated use of the same group M mode of action chemistry for 30 years has seen resistance rear its ugly head.

There are now 347 documented glyphosate-resistant populations of annual ryegrass, 58 of awnless barnyard grass, 49 of fleabane, 10 of windmill grass, 3 of liverseed grass and 1 of great brome, according to the Australian Glyphosate Sustainability Working Group (AGSWG). Undocumented cases are widespread and across an ever increasing range of weeds. There is also a change in the weed landscape with new and emerging weeds like stinging nettle, marshmallow and erodium in the arable sectors, without considering the escapades of environmental and noxious weeds across the largest island on earth. Of course there are many factors at play here, and a lack of public funding is the greatest rate limiting step with regard to on-going successful weed management programs in public areas, as well as the squeezed or diminished allocation to research and development funding.

Despite the challenges, there are also success stories to be found in the annals of integrated weed management strategies, which are keenly discussed in ChemCert training across the state and country.

Whether it is the WONS program, cactoblastis moth on prickly pear, splatter guns on lantana or rifling through herbicide mode of action tables in the ChemCert manual for rotations away from glyphosate, there is something for everyone to enjoy at ChemCert courses, as well as the personal anecdotes from peers on their own weed or pest control successes.



An example of a herbicide resistance transparency used in ChemCert Training Courses.

Further Information & ChemCert Details:

Jonathan Pearson.
ChemCert Technical Adviser.
Email: **jonathan@ChemCert.com.au**

ChemCert is a sponsor of the Weed Society of New South Wales and runs chemical training courses throughout Australia.

Website: **www.ChemCert.com.au** Phone: 02 9380 7271

Life Membership Medal

The Society has had a new medal stuck to be awarded at a Society event to our current living life members - Peter Michael, Kelvin Green, Mike Barrett and Jim Swain.

The Society also has a silver medal which is awarded for Excellence in Weed Management.

Free testing continues this summer as confirmed cases of glyphosate resistance in barnyard grass trebles!!!

Tony Cook

Nearly 60% of awnless barnyard grass (*Echinochloa colona*) samples from a targeted survey last summer have tested resistant to glyphosate. This represents a trebling of the number of previously confirmed cases and represents 'the tip of the glyphosate resistance iceberg' and there are hundreds of unconfirmed cases. Agronomists and growers are urged to take advantage of the free testing service that will be provided this coming summer to find out if glyphosate is still effective on this species.

A population of glyphosate resistant awnless barnyard grass in a fallow paddock. Image: Tony Cook.

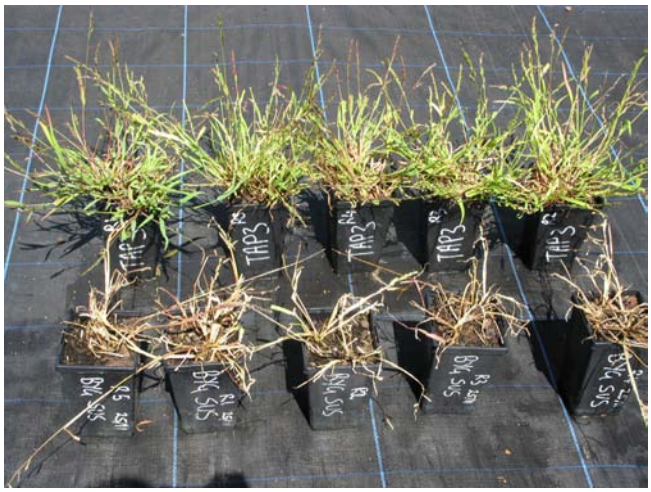
Since the first population of glyphosate resistant awnless barnyard grass (BYG) was discovered in 2007, another 20 cases were confirmed resistant up until 2011. Most cases were located in the northern grain region between Narrabri, New South Wales and St George, Queensland with one case in the Kimberley region of northern WA.

The resistance survey commenced in November 2011 targeting high glyphosate use paddocks using an extensive network of 40 agronomists linked to the Northern Grower Alliance. This is part of a Grain Research & Development Corporation (GRDC) funded project managed between NSW Department of Primary Industries (NSW DPI), Queensland Department of Agriculture, Forests & Fisheries (Qld DAFF) and University of Queensland.

Of the 78 samples received, nearly 60% of these (45 samples) were confirmed resistant. This substantial rise in confirmed cases is no great surprise for several reasons because the number of confirmed cases always under estimates the real problem. Also, despite the constant warnings about the threat of glyphosate resistance, many growers still use it without any alternative tactics to control survivors.

A recent survey for glyphosate resistance in non-cropping areas also resulted in big 'spikes' of confirmed glyphosate resistance in fleabane, annual ryegrass and windmill grass. The number of resistant fleabane populations jumped from 8 to 49 populations.

This targeted survey showed glyphosate resistant BYG populations are well spread within the area surveyed from Dalby to Tamworth, with a greater concentration of cases between Goondiwindi and Narrabri.



Testing involves the quick-test where the living plant specimens are sent to the research team at Tamworth Agricultural Institute and grown-out in pots to be sprayed under standard conditions. Image: Tony Cook.

Some of the samples tested are more resistant than the 'resistant standard' collected from a confirmed resistance site. The 'standard resistant' population used has a 5 to 7 fold level of resistance. Seed collected from any surviving plants from resistance testing will be used for more comprehensive glyphosate rate response studies to determine relative levels of resistance.

Free testing continues this summer as confirmed cases of glyphosate resistance in barnyard grass trebles!!! (Contd)

Tony Cook

It is likely many paddocks in the survey area have glyphosate resistance plants but escaped sampling because some growers are using the double knock tactic. Agronomists found it difficult to sample 'suspect' paddocks as the farmers had effectively controlled BYG with this technique. These paddocks will be visited next season when the testing service recommences.

It is important to continue the testing service to widen the area surveyed. Many parts of the central west slopes and plains region of NSW are prime candidates for glyphosate resistant BYG as they have a dominance of summer fallows, some effective summer rainfall and have BYG as a summer weed.

These surveys are financially supported by GRDC via two projects (National Glyphosate Resistance Project and the Northern Integrated Weed Management Project).

Further Information:

Tony Cook
Technical Specialist Weeds
Department of Primary Industries
Tamworth Agricultural Institute
Email: **tony.cook@industry.nsw.gov.au**
Phone: 02 6763 1250

Spear or black thistle, *Cirsium vulgare*

Council of Australasian Weed Societies (CAWS) Report

Digitisation of all past conference proceedings back to 1978 has been completed, with all these proceedings available from the CAWS website (www.caws.org.au). This will provide easier access to past proceedings and make the information more widely available.

The 18th Australasian Weeds Conference is to be held in Melbourne, 7-11th October 2012. Registrations are still open up until the start of the conference. The bid to bring the 2016 International Weed Science Conference to Australia was not successful.

The CAWS Orator at the 18AWC, Prof Richard Mack, will also be delivering presentations in Western Australia and New South Wales. Further details on the venue and time of the presentation in Wollongong are available in this newsletter.

CAWS will be discussing the frequency of the Australasian weeds Conference, with a proposal tabled to revert back to the triennial frequency. Falling attendance levels and tighter financial constraints suggest that this may be a good time to move away from the current biennial frequency.

No progress has been made on establishing a national strategy to provide support to weeds workers in the Northern Territory in the absence of a society in that territory.

A sub-committee has been active on developing a new strategic plan for CAWS. The structure of the proposed documents will be discussed at the next CAWS meeting, together with the nature of the major goals that have been identified and what activities can be pursued to achieve these goals.

The next quarterly committee meeting and the CAWS AGM will be held during the 18AWC in October. These meetings are open, and any society member can attend as an observer.

Rex Stanton and Hillary Cherry
NSW CAWS Delegates

6th International Weed Science Congress (IWSC)

Hanwen Wu (Dr)

The 6th International Weed Science Congress (IWSC) was successfully held in 17-22 June 2012, Hangzhou, China. There were about four hundred and fifty delegates from 51 countries, among them about half were from the host country China. Australia was represented by 5 delegates from Western Australia, 2 from Queensland and 1 from NSW.

The Conference was held in a five star hotel "New Century Grand Hotel Hang Zhou". The Conference was kicked off with a training workshop on the "Use of linear and nonlinear regression in physical, chemical and biological weed control" run by Prof Jens Carl Streibig on the 17 June, followed by four days of normal conference proceedings, and finished off with a scientific writing workshop run by Dr Jon Marshall, the Editor-in-Chief of Weed Research. Both workshops attracted more than 40 participants, with many attendees commenting them "highly useful and valuable".

The conference covered a broad range of areas, such as molecular tools for weed management, biocontrol, site specific weed management, natural products and allelopathy, herbicide resistance and invasive weeds. There was a surge in using molecular tools, including DNA barcoding, in weed research, particularly in the area of herbicide resistance. However, it was sad to see that there was a steady decline in traditional studies on weed biology and ecology although such information is vital for successful weed management. Aiming for publishing research results in highly impact journal partly explained the shift from the traditional weed biology studies to DNA-based research.

One highlight of the conference was the field tour to an experimental rice field where mycoherbicides and ducks were used as biological agents for aquatic weed control. I found at least three different barnyard grass species and two Conyza species in the field. These two weed species also cause great taxonomic confusions in Australia. The tour was also highlighted by a police car escorting 6 bus loads of conference delegates.

Another highlight of the conference was the official dinner. The whole dinner was accompanied with

Hanwen Wu attending the field tour to an experimental rice field evaluating biological agents for aquatic weed control.

beautiful performances of Peking Opera, the Chinese Face-changing Opera and traditional Chinese musical instruments such as "Er Hu". Delegates were excited with the close interactions with the performing artists, resulting in many opportunistic photos taken as life-long memories. However, there was a little hiccup at the start of the dinner. Wine and some meats were wrongly served on the designated Muslim table, which caused some discomfort among the Muslim delegates. Luckily this matter was quickly resolved prior to the start of the formal dinner.

One delegate from Costa Rica was critically ill at the conference and she was placed in an intensive care unit. Conference delegates donated generously in total of 8000 Chinese yuan and $800 to support the speedy recovery of the delegate.

The Weed Society of Western Australia was not successful. The high registration and accommodation costs made Perth less attractive for the voters. The next (7th) International Weed Science Congress will be in 2016 in the Prague, Czech Republic.

Further Information:

Hanwen Wu
Senior Weeds Research Scientist
Wagga Wagga Agricultural Institute
Email: **hanwen.wu@industry.nsw.gov.au**

UNIVERSITY OF NEW ENGLAND

PhD Scholarship

(Full-time, Fixed-term)

School of Environmental and Rural Science

"Ecology and control methods: Managing the invasive weed *Poa annua* in the Australian sub-Antarctic"

The School of Environmental and Rural Science at UNE is offering a unique and exciting opportunity for a motivated and independent PhD candidate to research the ecology and management of the invasive weed *Poa annua* on sub-Antarctic Macquarie Island.

Given the high conservation value of the region and threats from disturbance and climate change, well targeted control measures for invasive species are vital. Little is known about the reproductive phenology, soil seed bank of *P. annua* or the effect of control methods in sub-Antarctic/alpine conditions. The project will focus on those knowledge gaps and results will be used to develop effective, low-impact control options for *P. annua* in the sub-Antarctic, and with implications for conservation in the region more broadly, including Antarctica.

Applicants must hold a Class 1 or 2A honours (or equivalent) degree in a suitable discipline, and be an Australian citizen or permanent resident of Australia. They should have demonstrated research experience in plant/weed ecology, invasion biology and/or soil science and previous experience conducting remote field work. They should have a proven ability to work independently and have some laboratory experience.

The applicant must be capable of doing physically demanding work under challenging climatic and logistical conditions. They must be willing to travel by ship to remote field locations for periods of up to 5 months, with limited or no capacity for communication with people back home in Australia. He or she will be required to pass an Australian Antarctic Division (AAD) medical requirements prior to commencing the project. The applicant must be available for an immediate uptake of the scholarship to be ready for field work on Macquarie Island during the 2012-2013 summer season.

The scholarship provides a tax free stipend of $23,728 per year (2012 rate for full-time students) for three years and is linked to a large grant from AAD. Post-graduate training at UNE includes a dynamic academic team environment, international conference opportunities, professional development and networking. The project is a collaboration with researchers in the Terrestrial Nearshore Ecosystem Group, AAD. The student will have the option to be based at Armidale, NSW or Hobart, Tasmania.

For further information and application details, please contact Dr Paul Kristiansen by email **paul.kristiansen@une.edu.au** or ph: 02 6773 2962.

Closing Date: Friday 12 October 2012.

Sponsorship & Advertising

Are you interested in being a sponsor or advertising in the Society's newsletter 'A Good Weed'?

If you are please contact the editor or treasurer for current advertising rates and sponsorship rates and advantages.

Editor: **editor@nswweedsoc.org.au**
Treasurer: **treasurer@nswweedsoc.org.au**

This image of an African boxthorn infestation should have been credited to Les Tanner, not Lindsay Tanner. Sorry, Les. Editor.

TREASURER'S REPORT (As of 6 September 2012)

Financial
For the period 1st October 2011 to the 6th September 2012 the society has shown a profit of $9,723.15.

The society is in a very sound financial position with total assets of $81,268.42 as at the 6th September 2012.

The society has allocated $7,000.00 to Dr Peter Michael to prepare his extensive weed collection for transfer from the University of Sydney to the National Herbarium of NSW, Royal Botanic Gardens.

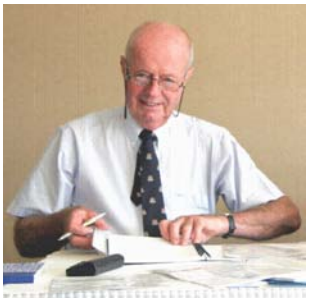
The NSW Weeds Conference Future Fund which is being administered by this society has a balance of $4,199.83 following the establishment of four term deposits as approved at the last committee meeting giving it total assets of $54,924.07.

These funds will be used to support to next NSW Weeds Conference which will be held in Corowra in 2013.

Membership
As at the 6th September 2012 the society has 176 members. There are 38 members who have not at this stage paid their 2012 subscriptions.

Reminder notices for those who have not paid their 2012 subscriptions were sent out in July and those who have not yet paid their overdue subscriptions are asked to do so as soon as possible or advise if they wish to resign as members so that we don't incur costs in sending reminders.

Yamaha Sky Division Australia are new sponsors of the newsletter *A Good Weed* and the committee acknowledges the support of our sponsors and looks forward to their continuing support.



Jim Swain, Treasurer. September 2012

New E-Letter

A new publication is planned to start in October 2012.

This electronic newsletter will be produced on a regular basis to keep members informed of important events and to link with material on the up-graded Society website.

'A Good Weed' will continue to be produced four times a year and will provide quality articles and Society information.

The new electronic newsletter will be issued approximately mid-way between editions of 'A Good Weed' and will be only available in pdf format via email.

If the secretary doesn't have your email address and you want to be on the mailing list for the new newsletter could you forward your email details to:
secretary@nswweedsoc.org.au

The Society has a privacy policy and will not use your email address or other personal information other than to inform you of Society matters.

Don't Forget Thursday 15 November 2012

- **Annual General Meeting**
- **Annual Dinner**

All held at Pennant Hills Golf Club
Copeland Road Beecroft NSW

Registration and full details will be soon on the website www.nswweedsoc.org.au

A GOOD WEED
Newsletter of The Weed Society of New South Wales Inc. ISSN 1325-3689

The newsletter is the major source of information to our members and we are sure they want to read about all the exciting, interesting and unusual things you are doing in weed management.

Let us know about local and regional news, people and events, new emerging weed species, weed management issues, bushland regeneration, bushcare programs, weed research summaries, noxious weeds, legislative issues and book reviews.

We prefer short & interesting articles of about 200 to 500 words with good quality images which will reproduce well in colour.

If you want to submit material or discuss possible articles email - editor@nswweedsoc.org.au

Submission dates for material for 2012/2013 are:

#61 Summer 2012/13	**30 November 2012**
#62 Autumn 2013	**28 February 2013**
#63 Winter 2013	**31 May 2013**
#64 Spring 2013	**31 August 2013**

Letters to the Editor

The editors welcome members comments on articles that have appeared in 'A Good Weed' or have weed-related issues they would like to bring to the attention of the Society members.

If you would like to contribute a 'Letter to the Editor' it must be under 150 words, submitted by the due date for the issue you would like it to appear and contain your contact details.

The editors reserve the right not to publish a letter.

Office Bearers for 2012

President	
Rex Stanton	**[Wagga Wagga]**
Vice President	
Birgitte Verbeek	**[Tamworth]**
Secretary & Public Officer	
Alan Murphy	**[Glen Innes]**
Assistant Secretary	
Warwick Felton	**[Tamworth]**
Treasurer	
Jim Swain	**[Thornleigh]**
Newsletter Editor	
Lawrie Greenup	**[Westleigh]**
Assistant Newsletter Editor	
Hanwen Wu	**[Wagga Wagga]**
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Jonathan Lawson	**[Glen Innes]**
Deirdre Lemerle	**[Wagga Wagga]**
Brian Scarsbrick	**[Dangar Island]**
CAWS Delegates	
Rex Stanton	**[Wagga Wagga]**
Hillary Cherry	**[Forestville]**

Committee Meeting Dates

12 October 2012	**Executive Committee Meeting**
15 November 2012	**47th AGM & Annual Dinner**
14 December 2012	**Executive Committee Meeting**

All dates need to be confirmed

Society Contact Details

THE WEED SOCIETY OF NEW SOUTH WALES INC.

Postal Address: **PO Box 438**
WAHROONGA NSW 2067

Secretary: **secretary@nswweedsoc.org.au**
Treasurer: **treasurer@nswweedsoc.org.au**
Editor: **editor@nswweedsoc.org.au**
Website: **www.nswweedsoc.org.au**

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