



Report of the 39th Annual National Conference

**Australian Garden History Society
Southern Highlands, NSW**

25-29 October 2018

Fuelling the Fire

**Symposium held at Joadja
Thursday 25 October 2018**

Gardens in Times of Peace and Conflict



**Conference held at Mittagong RSL
Friday 26 – Saturday 27 October**

The Gardens

Visits from Saturday 27 – Monday 29 October

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INTRODUCTION TO THE SYMPOSIUM AND CONFERENCE SPEAKERS

Dr Meg Probyn (Southern Highlands 2018 Conference Committee)

It is sometimes difficult to persuade busy people to provide a publishable version of their conference talks after the event. Unfortunately, what follows is not a complete set of papers. However, in order for there to be a record of all the speakers, I have decided to provide the five papers sent in in addition to the abstracts of all the talks and a photo of each of the speakers as a permanent record on the website.

The Pre-Conference Symposium ***Fuelling the Fire*** was held at Joadja in state-heritage landscape. Joadja Creek valley, 30kms west of Mittagong, the location of an abandoned nineteenth-century kerosene and shale oil mining town, is recognised for its heritage significance:

'The isolation and beauty of Joadja valley, the comprehensiveness of its physical testimony to a great Australian industry, a vigorous Scottish community and a vanished technology make Joadja an extremely important element in the heritage not just of Wingecarribee Shire but of Australia and the world.' - State Heritage Register Statement of Significance.

It is one of the most important nineteenth century industrial and archaeological mining relics in Australia, and certainly the most spectacular of the early shale mining sites in New South Wales. It is extremely rare in its level of preservation which maintains the relationships between industrial sites and habitation sites with very little twentieth century intrusion. Joadja demonstrates close links with Scotland through technology, managers, miners and refinery workers. (Simpson 1978) (Jack 1995)



The Joadja site in its heyday



The retorts

The owner of Joadja, Valero Jiminez, and local historian, Leonie Knapman, took the delegates on a tour of the valley including the ruins, the retorts (see photo), ‘Carrington Row’ and former orchards. After the tour, the discussion continued in the distillery café, led by Professor Emeritus Helen Armstrong AM. She introduced the other speakers: Craig Burton, Charles Massy, Djon Mundine and Caroline Grant.



Charles Massy, Djon Mundine, (Helen Armstrong in the centre), Craig Burton and Caroline Grant.

Helen Armstrong AM

Conflicting Narratives about the First Australians Gardens (see page 1 below)

As people concerned with Australian garden history, this is an opportunity for us to explore some fascinating Knowledge that is emerging about the ways Australian Aboriginal people gardened and managed their land over millennia. For 60,000 years an amazing cultural landscape evolved in virtual isolation. Millennia of slow biophysical changes have been absorbed and integrated into ways of life. No other society had remained in such isolation from ancient times to just 200+ years ago. We are at last beginning to appreciate what an extraordinary and finely-tuned culture had evolved before 1788. It is an amazing accident of fate that they were left undisturbed by other people for so many thousands of years except for the few encounters with the Macassars over the last 8000 years. What a precious phenomenon—if only it had been known.

This afternoon at the Symposium we have the opportunity to consider and play with ideas of what might have been with four visionary thinkers Djon Mundine, Craig Burton, Charles Massy and Caroline Grant. Given the theme of the main conference, 'Gardens in Times of Peace and Conflict', we are also going to explore conflicting ideas; some of which include frontier wars, other ideas include conflicting views of landscapes, others examining horticulture at cross-purposes and finally the challenges of grazing land and how it could be different.

When we have finished mediating over these various conflicts, we are going to make 4 maps about how the cultural landscape might have been had the British colonisers been differently Enlightened.



Professor Emeritus Helen Armstrong was the Inaugural Professor of Landscape Architecture at Queensland University of Technology 1997-2003 and now is Professor Emeritus, Landscape Architecture, QUT. She has a long history as a practising landscape architect, academic at UNSW, Adjunct Professor, former Centre for Cultural Research, and now research scholar at ICS UWS. She has been a visiting scholar at numerous overseas universities and her work is widely published. She established the Cultural Landscape Research Unit which, together with Craig Burton, has undertaken a diverse range of cultural landscape studies. She has undertaken a number of studies on migration and place, including preparing a Guide for Identifying Migrant Heritage Places for the Australian Heritage Commission. Her particular interest in marginal urban landscapes has resulted in new perceptions of landscape in the context of post-urbanism and the book, *Marginal Landscapes*. She is currently working with Tongji University, China on Cultural Contradictions in

Heritage Landscape Interpretation and completing a book on *Elusive Traces: Migrant Gardens in Australia*. She is currently a practising landscape architect, Adjunct Professor, former Centre for Cultural Research, UWS. She has undertaken a number of studies on migration and place, including preparing a Guide for Identifying Migrant Heritage Places for the Australian Heritage Commission (1996) She has had two exhibitions 2005 *Migrant Gardeners*, Museum of Brisbane 2012 *Re-enchanting the Industrial*, The Third Landscape, Tin Sheds Gallery, Sydney

Craig Burton AIA, AILA

The Southern Highlands: an evolving landscape towards a cultural identity (see page 8 below)

(Craig gave talks at both the Symposium at Joadja and at the conference venue.) All landscapes are cultural. An investigation of the physical, historical and cultural aspects of a significant region of New South Wales. Layers of consideration. Where and what is the Southern Highlands. The role of landscape character, place and identity. Change and threats to identity change: cultural forces. The role of community and the future.



Craig Burton lives and works in Pittwater NSW and is director of CAB Consulting Pty Ltd. He practises as an architect, landscape architect, horticultural consultant, fine arts historian, heritage consultant, an environmental studies consultant and as an artist. He has been involved with environmental heritage issues, particularly in the areas of architecture, cultural landscape identification and assessment since 1981. He holds an Adjunct Professorship at the University of Western Australia following the implementation of the first professional undergraduate degree course in Landscape Architecture in Western Australia. He has been involved in landscape and architectural education since 1979. He is equally experienced as an architectural, landscape and urban designer having undertaken a wide range of design projects and always strives for design excellence through the integration of different

disciplines and particularly the interpretation of heritage values, art and understanding place with contemporary design. He is a Fellow of the AILA and an associate of the AIA. One of his landscape projects has been recognised as one of the fifteen most significant designed landscapes in Australia and has

contributed to many publications concerning the disciplines of landscape and architecture. Craig has been a member of the Australian Garden History Society since its establishment in 1980 and has a passionate interest in the history of the evolution of landscape design in Australia. He is equally inspired by nature and art.

The other three speakers at the Symposium were:



Caroline Grant: a PhD candidate at University of Western Australia, is interested in surviving fruit trees (or plants) at historic sites, which is how she came to be writing a thesis—it started with an old pear tree. Caroline is in the final stages of her PhD thesis on 'The Introduction of Fruit Trees to the Albany Region of Western Australia'. Caroline is currently finishing a paper for Historic Environment (Australia ICOMOS) on 'The cultural heritage of fruit production' which is a global take on the subject, concentrating on pome fruit (apples and pears).



Dr Charles Massy OAM: is a Monaro farmer and authority on regenerative landscape management. His ongoing farming activities now include on-farm workshops to develop grazing systems for healthy landscape function and working with Aboriginal elders to regenerate 'Country' using cool-patch burning methods. Between undertaking a Bachelor of Science (Zoology, Human Ecology) in 1976 and his PhD studies in Human Ecology at Australian National University in 2009, Charlie developed an 1820 ha. cattle and Merino stud on his family's property 'Severn Park' in the Monaro, served as Chair and Director on several research organisations and statutory wool boards. In 2011 was awarded an Order of Australia Medal for his service as to the wool industry and community. That same year he published 'Breaking the Sheep's Back' *'the untold story of Australia's biggest business disaster'* (University of Queensland Press). Prior accolades include a Distinguished Service Award by the Powerhouse Museum in 2008. Groups he currently works with include: Greening Australia, Regional Landscape groups and the Federal Government's Carbon Farming Initiative. His best-known publication is *Call*

of the Reed Warbler (2017)—*'shows the way forward to the future of our food supply, our Australian landscape and our planet'* (University of Queensland Press).



Djon Mundine OAM: Bundjalung man, of Northern New South Wales is an author, independent Artist, international Art Curator and activist. Djon's illustrious career in contemporary Australian art includes recent exhibitions 'Sixth Sense' 2016, at National Art School Gallery and 'Bungaree: The First Australian' 2015 exhibited in a reservoir at Georges Head for Mosman Art Gallery before touring nationally. His 1993 Medal of the Order of Australia was awarded for services to the promotion and development of Aboriginal arts, crafts and culture. Notably, this is traced to his time as Art Advisor for Bulabula Arts in Ramingining in Central Arnhem Land, when Djon worked with the community to conceptualise the Aboriginal Memorial at National Gallery of Australia, 1988, an

installation of 200 hollow log coffins, from Central Arnhem Land. *It commemorates all the indigenous people who, since 1788, have lost their lives defending their land.* —National Gallery of Australia. His championing of contemporary Aboriginal art exhibition and critique continues through his co-editorial role with Daniel Browning of Artlink INDIGENOUS Global (35:2), published in June 2015; in his Power Publications Award-winning essay, 'The Aboriginal Memorial: Australia's Forgotten War' in *Artlink* and in multiple curatorial roles: 'Tyerabowbarwarryaoi—I shall never become a whiteman' for Havana Biennale, 'They are Meditating: Bark paintings from the MCA's Arnott's collection' 2008, at Museum of Contemporary Art, Sydney, and 'Aratjara' exhibition held in Dusseldorf, London and Denmark as well as roles at National Museum of Australia, Art Gallery of New South Wales, and Campbelltown Arts Centre. In 2005-2006 Djon was a resident at National Museum of Ethnology—Minpaku, Osaka, Japan as a Research Professor. Currently Djon is a PhD candidate at National College of Art and Design, University of New South Wales.

CONFERENCE SPEAKERS

Charlotte Webb OAM

Tracks through the pleasure ground

When Lachlan Macquarie travelling south from Bong Bong in 1820 passed through what is now Sutton Forest, he commented that the area was reminiscent of an English pleasure ground. This was a prescient moment. He had little idea that the entire Southern Highlands would become famous for its cool climate gardens and extensive gardening ethos. Gardens were developed as soon as settlement took place although initially for production and self-sufficiency as can be seen at Oldbury (1822) but by the 1850s an extensive ornamental garden had been developed at the Parsonage at Berrima, the first recorded large-scale garden with up to six gardeners. The dye had been cast. Gardens quickly became established initially along the transport routes, but when in 1868 the State Governor, Earl of Belmore, leased a property in the Southern Highlands, the area became a playground for the Sydney elite and fashionable gardens proliferated.

This paper explores the development of gardens both chronologically and geographically though the Southern Highlands and examines the influences behind their development. Some families, and in particular the Hoskins family, had significant influence establishing numerous gardens. Most importantly Sir Cecil Hoskins took a crucial role in developing the Southern Highlands Remembrance Driveway Plantations including along the Old Hume Highway, Berrima and south of Moss Vale. Even the NSW Governor participated although the property was not on the main transport route. What happens to these bypassed Remembrance Groves now Life has passed them by?



Charlotte Webb is a Landscape Designer and Heritage Consultant. Following the completion of her University degree, Charlotte returned to the Southern Highlands where she took over the management of a large heritage garden and a wholesale conifer nursery. While she was busy with the garden and nursery, she set up her own landscape design consultancy and over the last thirty years she has been involved in many projects, including working with some of the Southern Highlands most Significant historic gardens. Charlotte completed her Masters of Heritage Conservation at Sydney University, during which time she undertook extensive research on the Remembrance Driveway. During a Council Parks and Gardens committee meeting in 1998 the Director of Parks and Gardens, Charles Dunlop, suggested Charlotte and her husband, Chris, may like to become involved with a small group of enthusiasts who were looking to establish an arboretum in the Southern Highlands. They joined the group and have continued to steer the

project to where it is today—the opening of Stage 1 of the *Southern Highlands Botanic Gardens*. In June 2012 Charlotte was awarded a Medal of the Order of Australia for service to the community, particularly through the *Southern Highlands Botanic Gardens*.

Ian Scott AM and Greg Jackson

The Remembrance Driveway in Its Seventh Decade (see page 37)

The Remembrance Driveway is a living memorial to those who have served in the Australian Defence Forces in the Second World War and subsequent wars or conflicts. The driveway runs from Sydney to Canberra along the Hume and Federal Highways. Conceptualised by Margaret Davis, founding president of the Garden Clubs of Australia, the driveway was established in 1954 with the planting of trees in Macquarie Place, Sydney and at the Australian War Memorial, Canberra. Establishment of the driveway continued in the form of plantations, groves and memorial parks over the ensuing decades, until the mid-1990s when the route of the Driveway beyond Sydney changed to follow the new dual-carriageway Hume Highway just constructed, bypassing much of the original corridor. As well as new plantations, the highway comprises rest

areas dedicated to the memory of recipients of the Victoria Cross awarded during the Second World War or later. This presentation will explore the conference theme by discussing:

- the history of the driveway's establishment as a living 'Avenue of Honour', including how the vision of the Garden Clubs of Australia translated into a real project which captured the imagination of the public, and what current efforts are being undertaken to maintain that interest
- how the built form of the driveway elements has changed over time to reflect its relationship to the adjacent highway infrastructure
- the opportunities and challenges in ensuring the driveway continues in its role as a living memorial into the future, both physically and conceptually.



Air Commodore Ian Scott had a long career in the Royal Australian Air Force as a navigator on C130 Hercules aircraft as well as serving in senior staff and command positions in the Australian Defence Force. He was appointed a Member of the Order of Australia in 1996 for his service as Commanding Officer of No 37 Squadron. He transferred to the Reserve in March 2005 having reached the rank of Air Commodore. Ian holds an MBA and a Master of Arts in Strategic Studies and is a Graduate of the Australian Institute of Company Directors. Ian devotes time to family, Rotary, and Ex-Service Organisations, and serves in the Air Force Reserve. He is President of the Remembrance Driveway Committee.

Greg Jackson works as an urban designer in Roads and Maritime Services Centre for

Urban Design and is one of the Roads and Maritime representatives on the Remembrance Driveway Committee. Trained as a landscape architect, he has over 20 years' experience in the design of public domain and infrastructure projects, design policy and advocacy. He is currently providing urban design direction on roads projects in the rapidly developing area around the planned Western Sydney Airport as well as ensuring design and maintenance issues on the Remembrance Driveway are coordinated with the broader Roads and Maritime organisation.



Elizabeth Ganguly

Designing gardens for remembrance: Commonwealth War Graves Commission Project



At the Chelsea Garden Show 2017 the Commonwealth War Graves Commission was awarded silver for its Artisan Garden designed by horticulturist David Domoney and CWGC Director of Horticulture David Richardson. This entry not only celebrates the centenary of the CWGC, it showcases the skills of the gardeners and artisans that maintain the commission's cemeteries and is a reflection of the status of the commission as one of the world's largest horticultural organisations with 850 employees working in 150

different countries across the globe. Sir Fabian Ware, when working for the Red Cross during WW1 felt driven to ensure that the final resting places of the dead would not be lost forever—his unit started to record the locations of graves. In 1915 their work was given official recognition and in 1917 the Imperial War Graves Commission was established. The commission set the highest standards employing eminent architects such as Sir Edwin Lutyens and well-respected garden designer Gertrude Jekyll to work on the design of the cemeteries and memorials. The first

cemetery at Forceville in France became the template for the commission's cemeteries around the world. The CWGC honours 1.7 million souls of the Commonwealth who have died in two world wars, in cemeteries and on memorials at 23,000 locations; gardens of peace, remembrance, quiet contemplation and reflection. This talk will explore the history of the CWGC and the stories past and present of a selection of CWGC cemeteries and individual graves; *'Lest we forget'*.

Elizabeth Ganguly has always been a keen gardener but spent her early working life as a clinical nurse, then as a nurse academic. The acquisition of an old house and garden in the Adelaide Hills gave Elizabeth cause to become interested in garden history. Having completed horticultural and garden design qualifications at TAFE Elizabeth maintained a large hills garden as well as designing gardens for others. During this time Elizabeth opened her garden with the AOGS as well as volunteering for the scheme as a selector and later on the SA management committee. Family history research linked to the WW1 centenary years led her to investigate the history of the CWGC cemeteries; seeing the name Gertrude Jekyll in the first paragraph certainly ensured her continuing interest.

Phil Roberts OAM

Ballarat's Avenue and Arch: A Century of Memorialisation

This paper will examine the importance of memory, commemoration, heritage and militarism. During World War One, led by the Lucas Clothing organisation, Ballarat civic leaders and community members commemorated the war service and sacrifice of local soldiers, sailors and nurses by planting during 1917-1919 an avenue of 22 kms. Ballarat voted against conscription in 1916 and 1917 and was a 'divided' society. The Avenue, while emphasising imperial loyalty and Ballarat's importance as Victoria's second city, united the community.



Over time, through memory and mythology during the civic maintenance of the Avenue and Arch, Australian community attitudes to war and peace were reflected and a determined effort was made to remember the service and sacrifice of military personnel for all Australian wars. Important influences on the civic management were the collective memory of the so-called 'Lucas Girls', a group of former female employees of the Lucas Clothing Company, and of the members of the Arch of Victory/Avenue of Honour Committee. Increasingly, the embracing of the 'Anzac Legend' and an emphasis on 'loss and grief' was reflected in the civic management. By 2017 the Avenue and Arch were in pristine condition and through the 'Garden of the Grieving

Mother' had transformed to symbolise the importance of remembering the sacrifices and grief of war and the need for peace.

Philip Roberts has written sixteen history books about local schools, sporting and community organisations and industries. He is currently studying a doctorate part-time at Federation University and on Australia Day 2017, he received an OAM for community service in Ballarat. A former secondary teacher and Principal, community involvement includes as a Rotarian since 1991; Board member of the Ballarat Mechanics Institute; District Scouting Association Secretary; Past President of the Ballarat Sportsmen's Club and office-bearer of the Ballarat branch of the Australian College of Educators. He enjoys Royal Tennis, golf and has taken part in the last six Great Victorian Bike Rides.

Stuart Read

Standing up for historic gardens – advocacy in the modern age (see page 21 below)

AGHS's mission includes advocacy to promote awareness and conservation of historic gardens. This paper will tease out some ways AGHS has done and is doing this. It will pick a few 'wins'; lament a few 'losses', note how new social media and technology are changing both the language and means of so-doing. At a time when governments are cutting funding and devolving more to volunteers, increasing scrutiny and reporting requirements of community organisations doing

advocacy, such work can be controversial, ‘ruffling feathers’. Is that bad? Should a democracy not foster and encourage debate, welcome it?



Stuart Read is a New Zealand-born landscape architect and horticulturist who specialises in cultural heritage, focusing on landscape design, parks, gardens and plants. His professional life is as Assessment Officer, Heritage Division, NSW Office of Environment & Heritage. He has been on the Australian Garden History Society’s ACT, Monaro and Riverina Branch committee from 1993–97; he’s been a member of the AGHS National Management Committee on and off from 2001 (and is currently on it again); he has been very involved with the Sydney & Northern NSW Branch committee from 2006, being branch chair from 2009. In 2019, he was elected as co-chair of the AGHS National Management Committee.

Graham Wilson OAM

Cultural Landscape and War Memorials



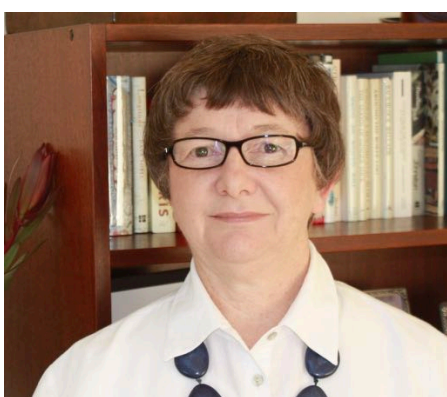
Following conflicts in which Australians have served, Australian communities have created diverse war memorials to honour those who returned and those who died. This diversity is now part of the Australian cultural landscape. Apart from the names of those listed, a close study of the war memorials reveals details of the symbolism reflecting one’s attitude to the British Empire and what it means to be Australian. Australian symbolism features not only animals but also vegetation including eucalyptus, flannel flowers, waratahs and wattle. A further feature is the way that communities have created remembrance drives and gardens as well as parks.

Graham Wilson trained as a secondary teacher at Sydney University in the 1960s and he joined the Armidale College of Advanced Education as a lecturer in 1985. At the college, he became Director of the New England Historical Resources Centre. He taught in the areas of Australian History and Local and Applied History and retired from the University of New England in 2000. His great love is heritage conservation and he has

worked for over twenty years in advising local councils in the New England Tablelands on heritage issues. In 2008, his work was acknowledged by the award of an OAM for his contribution to heritage in Armidale. He is a member of the Northern NSW branch of the Australian Garden History.

Linda Emery

A parcel from France: The Poppy Seed Project



In January 1920, the director of the Botanic Gardens in Sydney, Joseph Henry Maiden, received a parcel from France, sent to him by Ettie Rout, Secretary of the New Zealand Volunteer Sisters. The box contained poppy seed gathered in the Somme Valley by the school children of Villers Bretonneux and came with a request that the seed be distributed to the relatives of Australian and New Zealand soldiers who had fallen fighting on the battlefields. Joseph Maiden was a meticulous man, with a methodical mind and working habits. He kept registers of seeds and plants coming in and out of the Botanic

Gardens so the names were recorded of all those people who applied for and received poppy seed to plant in their gardens in memory of their loved ones. The Poppy Seed Project has involved tracing the recipients of the seed and the soldiers in whose memory they were planted in the hope that the symbolic red flowers will once again bloom in these gardens one hundred years on.

Linda Emery is an active freelance historian, with a particular research interest in 19th century Australian history. Between 2008 and 2017, she was a member of the research team for the SBS television genealogy program *Who Do You Think You Are?* Linda is the author of numerous books and articles, and writes regularly for *Highlife Magazine*. In a voluntary capacity, Linda is Archivist and Vice-President of the Berrima District Historical and Family History Society, a large and active organisation with some 300 members. She was researcher and co-curator of the *Southern Highlands 1200* exhibition on World War I which opened in 2015 at the Berrima District Museum. She is a Councillor of the Royal Australian Historical Society in Sydney and also serves as a member of the Wingecarribee Shire Council Heritage Advisory Committee, which reviews matters relating to heritage issues in the shire. Books include: *Pictorial History Southern Highlands*; *Pictorial History Hunters Hill*; *A Lovingly Woven Tapestry*, *Oxley College Bowral*; *A Window to the Southern Highlands*; *Tales from a Churchyard*, *All Saints Church and Cemetery*, *Sutton Forest:—a history of the church 1828-1928*; *Exploring Exeter—a guide to the heritage buildings of Exeter NSW*.

William Oates

WASPS: The New England solution to war-time labour shortages

By the outbreak of WWII Armidale was home to both the first regional Teachers' College in NSW and the first regional University College in Australia. As the wartime shortages of labour stripped away male farm workers and gardeners from both private and public employment it was



not surprising that the effects of this were well documented by these two institutions. An innovative local solution documented by these institutions involved recruiting women workers from the ranks of local girls, married women and female students to undertake many seasonal agricultural jobs. More surprising on examination was the national adoption of this model of organisation, the name this organisation became known by and some of the unusual crops planted during wartime. What was to be called the Australian Women's Land Army Local Auxiliary or AWLALA instead retained its Armidale name of Women's Agricultural Security Production Service or WASPS. The brainchild of local farmer and businessman Don Shand, this organisation grew to have 3000 participants by the end of the war and spread across many communities. This casual workforce allowed for the planting of seasonal crops

like peas, beans and carrots as well as newer crops like hybrid maize, opium and pyrethrum. This paper follows the expansion of this organisation documented through primary records kept by a foundation member of the WASPS as well as records from the Armidale Teachers' College.

William Oates (Archivist, University of New England) was born in 1961 in Orange into a farming family associated with the nearby old Cornish Settlement. After completing a degree in Economics, he commenced a career in Public Administration. Appointed University Archivist and Director of the Heritage Centre at UNE in 2003—this role includes managing a regional repository maintaining both university archives and a significant body of private archives all drawn from a collection zone covering the northern third of the state over six decades. This breadth of archival material allows for full expression of a professional interest in applying emerging digital technologies to both managing archives and researching photographic collections. Perfect workspace for any budding garden historian.

John Dwyer

War on Weeds (see page 11)

Weeds have often aroused strong feelings. The worry is that our decisions about fighting weeds, including whether to regard exotic species as the enemy, may be governed by our emotions rather than reason. The feelings aroused may progress to fear and loathing; they are easily manipulated.



The 'war on weeds' is troubling in many ways. The category has been extended from weeds of horticulture and farming to environmental weeds and 'invasive alien species'. We should be slow to judge plants by their origin, and to accept that native species are weeds when seen as too successful; and should not allow ourselves to be conscripted to attacks on plants that cause little harm. Herbicides, often used as weapons of war, have in many cases done more harm than good. Weed resistance to herbicides has been described as a successful

counter attack but should rather be seen as a natural response to human intervention. Collateral damage, inherent in warfare, has often marked the 'war on weeds'. There is mounting evidence of the harm to humans from glyphosate. Exaggerated claims about the enemy and other forms of propaganda common in wartime have been a feature of the 'war on weeds.'

The problems mean that it is time for a truce. Weed management does not require a fighting attitude or the use of herbicides as the first weapon of choice. We should seek peace not conflict; working to understand weeds, to acknowledge their ecological roles and their place in nature.

John Dwyer describes himself as lawyer, horticulturist and author. His publications include articles about weeds and landscape in *Australian Garden History*. His book *Weeds, Plants and People* was published in 2016, with assistance from the AGHS Kindred Spirits Fund. Intrigued by the natural history of weeds for many years, John writes about them and their place in our history; and our relationship with nature in gardens and landscapes. John worked in the law for some 40 years, including 20 years practice as a leading QC. He has an MA in philosophy and is a qualified horticulturist from Burnley College with a PhD on 'Weeds in Victorian landscapes'.

Frances Simons

Vegetables from New Pommerania



While the First World War was fought far away from Australian Shores, the declaration of Germans, Austrians and Hungarians in Australia as enemy aliens brought the conflict closer to home. Enemy alien internment camps were quickly established in all Australian states, and thousands of men were imprisoned from 1914 to 1919, with their numbers augmented by prisoners of war, brought to Australia from abroad.

In several locations, gardening was a significant aspect of internee life. In the case of the Berrima camp in the Southern Highlands of NSW, it did more than help prisoners pass the time, being credited as the single most significant contribution to the generally harmonious relationship that existed between Berrima residents and their locally-based 'enemy'. Although their gardens have now disappeared, the prisoners' skills in growing produce can be seen in some remarkable surviving photographs of the area they called "New Pommerania", while the gardens and huts they built along the Wingecarribee River are

testimony to their energy, resourcefulness and productivity throughout their internment.

Frances Simons is a horticulturalist, beef producer and garden writer for *Highlife Magazine*. She also finds time to run a gardening school. Her interest in internee gardens stemmed from her late father's years of research into the history of the Berrima German Internment Camp and the publication of his book *Prisoners in Arcady*.

CONFLICTING NARRATIVES ABOUT THE FIRST AUSTRALIANS GARDENS

Professor Emeritus Helen Armstrong

Synopsis

As people concerned with Australian garden history, this is an opportunity for us to explore some fascinating Knowledge that is emerging about the ways Australian Aboriginal people gardened and managed their land over millennia.



Joseph Lycett, Aborigines hunting kangaroo, 1820, National Library Australia

For 60,000 years an amazing cultural landscape evolved in virtual isolation. Millennia of slow biophysical changes have been absorbed and integrated into ways of life. No other society had remained in such isolation from ancient times to just 200+ years ago.

We are at last beginning to appreciate what an extraordinary and finely-tuned culture had evolved before 1788. It is an amazing accident of fate that they were left undisturbed by other people for so many thousands of years except for the few encounters with the Macassars over the last 8000 years. What a precious phenomenon – if only it had been known.

This afternoon we have the opportunity to consider and play with ideas of what might have been with four visionary thinkers Djon Mundine, Craig Burton, Charles Massy and Caroline Grant. Given the theme of the main conference, ‘Gardens in Times of Peace and Conflict’, we are also going to explore conflicting ideas; some of which include frontier wars, other ideas include conflicting views of landscapes, others examining horticulture at cross-purposes and finally the challenges of grazing land and how it could be different.

When we have finished mediating over these various conflicts, we are going to make 4 maps about how the cultural landscape might have been had the British colonisers been differently Enlightened.

Introduction GARDEN DREAMING and BEAUTIFUL LIES

Australian history ... is so curious and strange, that it is itself the chiefest novelty the country has to offer ... It does not read like history, but like the most beautiful lies. And all of a fresh new sort, no mouldy old stale ones. It is full of ... incongruities, and contradictions, and incredibilities; but they are all true, they all happened.

Following the Equator, Mark Twain, 1897¹

But there is an important lie in Australian history which is neither true nor beautiful! This is the lie that the Aboriginal people—the First Australians—were wandering ‘primitives’ who did not know about cultivating and managing land. This was a deep misunderstanding of people and landscape! The settler/invasors were unable to see the subtle complexity of Aboriginal culture and the unusual way indigenous people related to the land. They were blind to the unusual patterns of vegetation produced by the Aborigines’ sophisticated practice of cool burns; essentially creating different types of plant communities to ensure resources would be abundant and predictable. The invading settlers saw the landscape as a natural grassland, similar to a gentleman’s park, and the Aboriginal people as merely nomadic hunter-gatherers.

Instead, the whole of the landmass of Australia was a mosaic of different nations each managing their land according to the particularities of its soils, plants, and climate through skilful firing and specific ways of cyclical harvesting to ensure good crops, appropriate for mobile living.

Aboriginal people were not ‘merely’ nomadic, following available food resources. Over thousands of years they had refined their beliefs and ways of life that made regularly travelling through Country spiritually essential—Maintaining the earth, the Dreaming and the Law. Aboriginal Law required every part of the land be cared for. Even the harshest country such as the desert was cared for, not simply for the food it supplied, but because all the land was imbued with the spirit of ancestors and future descendants.

Maintaining the earth, the Dreaming and the Law—was the moral and ethical way of being for Aboriginal people. This required rituals and ceremonies imbued with knowledge from storytelling and constant interconnection with places and people; all achieved through being mobile.

The Knowledge

Mobility was fundamental to the Aboriginal system of knowledge where ‘Knowledge’ is a privileged secret, only available to the initiated. Such ‘Secret Knowledge’ and its associated rituals were scrupulously maintained by the ‘Elders’. There is also open, non-secret knowledge which is flexible and can include new knowledge; but always through the filter of story-telling.

In this way people’s collective ‘Open Knowledge’ can be added to without concern for paradox or contradictions; instead such variations are valued as multiple ways of seeing and doing. Had the Aboriginal people not been decimated by smallpox with first contact, there may have been more Open Knowledge discussions about what to do. The ways the Aboriginal people cared for the land required responsible stewardship as well as restraint in harvesting resources. For thousands of years, the Australian landscape was managed as a truly integrated garden; but it was a garden without constructed boundaries. Without fences, Aboriginal land management was invisible to the first invading settlers.

The yam was one of the essential crops

It was brought to two separate regions of North Australia, 12,000 to 8,000 years ago; one when a land bridge connected Cape York to New Guinea during the last glaciation and the other location when it was possible to island hop to Arnhem Land from Indo-Malaysia.

The yam that was introduced was not a wild species but a cultivar derived from long periods of cultivation. The Aboriginal People at the time must have deliberately planted them because the

cultivar could not become established without human agency.



Harvesting yams: Dolly Mills in field of Pencil Yam leaves

It became a very important food source, planted all over the coastal plain and mountains—for example, one species is Warrine (*Dioscorea hastifolia*)—a slender climber with pale yellow inflorescences, that turn into clusters of green three-angled fruit in autumn. Their leaves are spear-like, becoming long and slender as the climber twists over rocks and shrubs.

Women harvested the yams making deep holes in the soft soil so that they could pull out thin white tubers without damaging them. The woman would always put back one or two offshoots, ensuring that she could harvest the garden two to three times a year. The soil was so soft and friable that she could merely push her finger in to make a new hole for the divided tubers. Often her garden was small but some yam gardens were quite extensive. Even so, on a rock nearby she shaped a small perfectly round waterhole so that she could irrigate her small garden. Not that she needed to, because the soft soil allowed rain and dew to percolate down to the roots.

Sadly, the new settlers with their cloven-hooved animals compacted the soil. The sheep and cattle grazed brutally, tearing whole plants out of the ground; new shoots were then unable to push through the now compacted ground. Without protective ground cover, any remaining soil was washed away, muddying the once clear pools and streams.

In the wetter coastal areas of Victoria and NSW, there were gardens of Murnong or Yam Daisies (*Microseris lanceolata*). Major Mitchell, on arriving in the Victorian Grampians in 1836 commented on the vast open downs that were yellow with Yam Daisies.

The yam daisy has a seed head rather like a dandelion which is normally dispersed by wind. Aboriginal gardeners in the south-east did not leave the likelihood of a crop to the vagaries of the wind. Instead, they planted these seeds in open grassy woodland by pushing them into the soft ground, leaving the fluffy wings exposed. The root system includes a number of fleshy tubers. The harvesters knew not to harvest the tubers until after flowering when the plant dies down, so that the tuber would be rich in nutrients. At this time, the ground was tilled and care was taken to merely thin the tubers. This encouraged the growth of more yams. In managing the yam gardens,

the clan knew that firing the grassland would remove competing plants so the new shoots could grow easily, particularly because the ash-bed after the fire was a fertilizer and helped to maintain the friability of the soil.



*The round yam head with yam strings top and bottom attached to elongated body:
Cave painting in Arnhem Land, from George Chaloupka: Journey in Time, p 38-143*

Explorers noted numerous mounds in the rich soil laid out in neat lines at right angles to ridges.² Cultivation was clearly a feature of Aboriginal landuse and the tubers of yam daisies were valued staples.

In areas of good rainfall, orchids, lilies and mosses flourished among long grasses which were grain crops. These Nodding Greenhoods were another source of nutritious tubers.



Nodding Greenhood orchid (Pterostylis nutans)

Sweeping Grasslands

In the Aboriginal garden, the grassland was on the richest soil, friable and black, made up of nutrient rich ash and compost – a soil that rapidly disappeared after 1788. This rich moist soil allowed sweet bright green shoots of grass, mostly Kangaroo grass, to cover large undulating lands in the spring.



Over summer, they grew into flourishing knee-high tussocks until late summer, when flowering heads of tightly packed corkscrew seeds were ready to be harvested and the land burned ready for the next season.

These were the grain crops, carefully managed by site selection and cool burning.

Often the Aboriginal farmer/gardeners would select a site near some water and block some of the dry channels to hold any further rainfall.

They would then burn it before rain and spread the seed. The ‘Knowledge’ derived from rituals would indicate when to return to harvest the seed heads.

Patterns of Trees



Trees in the Aboriginal garden, where the rainfall was good, appeared as if they had been laid out by an English garden designer of the 18th Century. Tall Eucalypts and Angophoras were openly spaced like a woodland. Their trunks were straight and tall, there were no shrubs as undergrowth; instead well-spaced trees emerged out of swards of grassland. Where the soil was poor and stony, unfired trees were allowed to grow as belts, close together with scrubby undergrowth. This was the woodland design made by Aboriginal gardeners.

Chains of Ponds

Aboriginal gardens in areas of good rainfall have been called ‘*a quilt of springs, soaks, caches, and wetlands*’.³ The water was clear because the friable soil allowed water to soak into the ground. Later, the settlers’ cloven-hooved sheep and cattle compacted the soil and the clear streams and ponds became muddy with silt. The Aboriginal people also dammed water bodies to create larger lagoons which they stocked with fish, frogs and yabbies. Soon the new water body would be fringed with large stands of bulrushes (cumbungi) whose fleshy underground rhizomes, were a delicacy. Cumbungi (*Typha orientalis*) usually germinated in spring, growing prolifically during summer, producing spear-like flower heads, and then drying off in winter. The plants spread by their fleshy rhizomes, usually covered with roots growing in the mud from where the Aboriginal

men and women harvested them They were delicious when baked.

Managing the Grasslands

Although I have described these places as gardens, they were also like the British gentry's Hunting Parks. The Aboriginal gardeners knew how to manage their estate so that they could have successful hunts. They understood that grazing animals preferred the rich edges where different plants communities intersect. So, the Aborigines, as estate managers, created as long an edge as feasible by alternating belts of scrub and trees with bands of grassland. They created grass lanes through forests and forest bands through grass. They did this by a sophisticated method of cold or low intensity burns, where there is little danger of a crown fire developing; often called 'firestick farming'. These fires were planned in precise detail where, through the local clans' 'Knowledge' of the plants, they could fire specific plant communities or associations over accurately planned timing; some, every two years, some three to five, some 8 to 10. This highly managed landscape can be seen in the early artists' paintings; although apparently unnoticed by the 1788 settlers.



Patch burning by Martu people in Western Desert Australia

People burnt, tilled, planted, transplanted, watered, irrigated, weeded, thinned, cropped, stored and traded. So, what farm process did they miss? There was one difference. They were mobile. No livestock anchored them. They did not stay in their houses or by their crops. North Australian clans spent several months mobile and several months sedentary each year, but each period was equally planned and predictable, 'a regular and *orderly* annual cycle carried out systematically. This is farming, but not being a farmer. Doing more would have driven them out of the desert. Mobility let them stay. It imposed a strict and rigid society, but it was an immense gain. It gave people abundant food and leisure, and let them live in every climate and terrain. It made possible a universal theology, and it made Australia a single estate of free people.

Understanding the nature of cultivation and land management in Australia before the settler/invaders arrived has proved to be fascinating and highlights the different values held about stewardship and responsibility for the land. It also highlights the tensions between a people with a highly evolved ancient culture based on mobility in the form of ritualised movement along spiritual paths, and a people with a differently highly evolved culture, based on being sedentary within fixed and expanding settlements.

The Question

Given our increasing understanding of how the Aboriginal people had developed a highly evolved relationship with productive landscapes, soil quality and vegetation associations before, how could the interaction with the settlers have been different?



Djon Mundine speaking on the deck at Joadja with Charles Massy, Craig Burton and Helen Armstrong

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- ¹ *Following the Equator*, Mark Twain, 1897 (as quoted in Beatrice Bligh (1980) *Cherish the Earth: The Story of Gardening in Australia*, Sydney: David Ell.)
- ² Gammage, W., 2011, *The Biggest Estate on Earth*, Sydney: Allen & Unwin, p. 290.
- ³ *Ibid*, p.107.

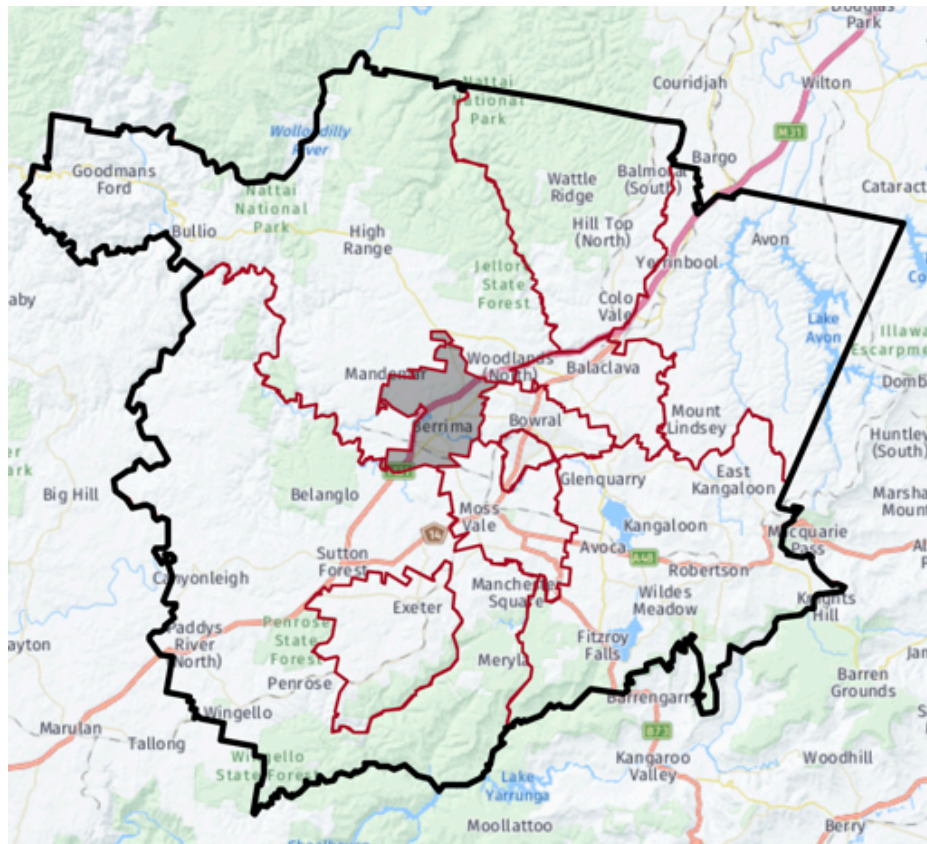
SOUTHERN HIGHLANDS AS LANDSCAPE

Craig Burton

Introduction

Australia is large and small at the same time. My personal link with the Southern Highlands is that my paternal grandfather, Harry, was a Guard at the Berrima Gaol during WW1 and it looks to have been a good place to see out the war. I am not sure if Harry understood the landscape but I'm sure he appreciated the setting of Berrima as did the internees.

Landscape derives from the interaction of geology, climate and people. Australia has always been an embattled country. It is a human response to both the natural and cultural environment. The tectonic plate on which we now ride has been invaded by the seas and the coastline has had changed configurations from pre-glacial times to post-glacial times which has allowed invasion by others. Also invasive was the volcanic intrusions to establish a strong identity of place comprising a plateau interspersed with prominent hills or mounts now referred to as the Southern Highlands.



What is the extent of the Southern Highlands?

*Report of the 39th Annual National Conference of the Australian Garden History Society
held in Southern Highlands, NSW, 25-29 October 2018*

The Southern Highlands is an area of contention as to its extent and if considered as a landscape it is already cultural. Perceived and formed by human actions responding to nature to create a distinctive place. The landscape is not necessarily contained within political boundaries such as the Wingecarribee Shire. Finn Thorvaldson, landscape architect and now resident of Burradoo, has identified in his study of NSW Characteristic Landscapes and Visual Landscape Regions (1996) a vast area of similar or harmonious character determined by his perceived Southern Highlands extending to the Southern Alps and to the west to Boorowa and the headwaters of the Lachlan River. This extensive area is a contrast in scale to the Wingecarribee Shire area associated with the South Road and the former Governor's residence as the cultural heart of the Highlife. The landscape is a combination of bio physical components and human creation but heavily informed by the geological formations

The northern part of the Highlands lies within the Sydney Basin with its Triassic sedimentary layers invaded by volcanic intrusions and its landforms largely formed through the relationship between volcanism and the erosive power of water. The heart of the Highlands lies within the catchments of the Hawkesbury Nepean River system and the Shoalhaven River system (including part of the Illawarra) with less erosion occurring on the basalt intruded Moss Vale Plateau and with edges breaking through Hawkesbury Sandstone deposits. Possibly the Wingecarribee Local Government area could be renamed: Southern Sydney Highlands.

The division between catchments is reflected in the two post-glacial indigenous Koorie cultures and different language groups: the Dharawal to the east and the Gundungurra to the west. Always difficult to draw a line in an attempt to define cultural identity but a cultural landscape was formed initially by indigenous occupation.

To the north, on land associated with the Cowpastures, is the Dharawal place of Yandel'ora centred on what is now known as Mount Annan. This was a gathering place for peace where different indigenous peoples from as far as Central Australia, Melbourne and North Queensland would come every nineteen years to settle their differences peacefully when the stars, known as the three sisters, were dancing in a line.

The Colonial invasion has resulted in misunderstanding, dispossession and genocide and an ongoing difficult relationship between the indigenous peoples and the invaders. There remains an ongoing indigenous battle for recognition throughout Australia. Little appears to have been documented about the cultural landscapes formed by indigenous occupation in the highlands other than an understanding of The Dreaming and evidence of ceremonial marked trees indicating burial sites.

An account of one of the party of explorers led by John Wilson, in 1798, described the landscape around the Wingecarribee River as;

The country still runs very fine; full of large meadows and some thousands of acres of land without any timber on it, except here and there one tree, and some very large lakes of water some three miles long...

The writings of Lesley Head, Bill Gammage and Bruce Pascoe have opened new perspectives concerning cultivation of and caring for Country throughout Australia. The concept of a created managed landscape with open grassed spaces interspersed with woodland and forest patches such as found in a gentleman's Park Estate of the northern hemisphere is a familiar one. The difference between the Western cultural view and that of the indigenous cultures is another battle between the materialistic association of the land as a resource to be exploited and the spiritual association integrating sacred and sustainable indigenous values.

The main cultural changes expressed in the landscape character of the Southern Highlands from the last 40,000 years to the present appears to be one of constant spatial change reflected in the following six historical layers:

- Indigenous cultivation of the landscape over Millenia.
- The adaptation of the indigenous park like setting for Colonial occupation including exotic animals; horses, sheep and cattle together with Romantic built rural settings and

introduced vegetation.

- The establishment of a network of roads, railway, paths and village centres evolving to towns throughout the rural region. Many private estates, in the nineteenth century, were in effect small villages and many smaller holdings following the railway connection to Sydney.
- The introduction of exotic flora, particularly the impact of *Pinus radiata* tree plantations and the introduction of cool climate coniferous species as well as a mixed mosaic horticulture of deciduous and flowering plants within a coniferous framework, particularly in the late nineteenth century.
- Subdivision of larger rural estates and the introduction of row plantings of coniferous species to delineate the subdivision geometry not necessarily in harmony with the spatial structure and flow of the former overall parklike qualities.
- The threat of invasion of new land uses such as mining and gas fracking on a larger scale than previously existed as ironworks, shale oil, coal, cement works and stone quarrying. Other issues include increasing urbanisation and changes to infrastructure resulting in the 21st century phenomena of arboricide and water pollution.

Inherent with all these patterns of evolution is the battle for conservation of perceived cultural values and the battle for the environment (both natural and cultural). We currently have the Battle for Berrima and the Battle for Bowral underway amongst many unidentified battles. The significance of the cultural landscape of the Highlands is embedded in the layers of its evolution. It is dynamic and ongoing.

The concept of landscape is always cultural as it is a human construct, for better or worse, but we are not good at recognising landscape as a subject, in Australia, rather more often as an object.

In the future the role of the individual and the community is needed to reconnect with the sacred and sustainable values inherent in the indigenous cultures and to arrive at an all-inclusive landscape identity as subject. We have several existing designated Landscape Conservation Areas (Berrima and Burradoo) but is that enough? To be considered is a vision for the whole place: a Southern Highlands Landscape Conservation area particularly addressing its visual and spatial structure together with the diverse social structure integrated with a sense of identity, all helping to determine the landscape character for the future.

In consideration of the themes of peace and conflict for this conference

I am reminded of the structure of Marion Mahoney's epic work *The Magic of America* reflecting the time spent by herself and her husband Walter Burley Griffin with their own battles, particularly in Australia, and the 1948 post war publication is structured as follows:

- The Imperial Battle
- The Federal Battle
- The Municipal Battle
- The Individual Battle

Nothing much has changed.

Walter Burley Griffin had previously stated that:

...the landscape belongs to everyone and the garden to the individual.

The noted architect Daniel Libeskind, in a recent talk in Sydney, said that peace is just an interval space between battles or wars. Humans seem to be constantly at war with each other.

Battle on and peace!

WAR ON WEEDS

Dr John Dwyer QC

Introduction

References to the *war on weeds* can be traced back almost 100 years (Praeger 1913, Evans 2002). In recent times the expression has become commonplace. Government agencies have declared war on weeds (*National Weeds Strategy* 2006), and powerful forces have joined together in waging war. Killing weeds is a multi-million-dollar business for herbicide manufacturers and those recruited to the war effort. To some, it is clear that the management of Australia's weed problems is a form of warfare. Some claim to be *winning the war on weeds*, or to tell others how to do so. Learned papers are given about *strategies* to be adopted. To take one example, Dr Mark Lonsdale (2002) wrote: 'It is true that the management of Australia's weed invasions is a form of war, and right (sic) to use strategy to marshal our scarce resources to greatest effect in the conduct of hostilities.'¹ *Weed warriors* are recruited to wage war. Powerful forces have joined together in waging war. Killing weeds is a multi-billion-dollar business for herbicide manufacturers and those recruited to the war effort.

The War on Terror

The idea of a war on weeds reminds us of the much used and abused expression so prevalent today, the *war on terror*. Just as talk about the war on terror contributes to deep seated feelings of fear and insecurity in the population generally, who are reminded that they may at any time become the targets of a terrorist attack as they go about their daily lives, so repeated references to the *war on weeds* give rise to fears that we are under serious threat from weeds. The government agencies leading the war on weeds seek to muster support for their activities by the call to take up arms. The war on weeds is based on claims that alien plant invaders are threatening the world around us, the very environment in which we live.² But the threat has, I believe, been exaggerated. Serious ecological harm has often been caused by the use of herbicides as a weapon to attack weeds. The war on weeds is directed to people as well as plants, people who cultivate or simply allow to grow plants which others disapprove of.

Powerful emotions

Weeds are often described in emotional terms such as *feral*, *invasive*, *alien*, *rank*, *noxious*, *pernicious*, *ugly*, *hateful*. The words so often used to talk about weeds are loaded with emotions that hinder dispassionate investigation. Such language both expresses the emotions aroused and reinforces their sway over our thinking about weeds, to an extent that we may not realize. The human response to plants that makes them weeds may be based on the harm they do to human projects, but may also be due to unwarranted fear and loathing. As Professor Stearn pointed out, 'Taken as a whole, weeds are not so much a botanical as a human psychological category within the plant kingdom, for a weed is simply a plant which in a particular place at a particular time arouses human dislike.'³

¹ Lonsdale, M. (2002) 'The Highest Form of Generalship? A Review of Weed Strategies' *Proceedings of the thirteenth Australian Weeds Conference*.

² Quammen, D. (1998) 'Planet of weeds' *Harper's Magazine* (October 1998 pp57-69).

³ Stearn, W. 'Review of *Weeds* by W.C. Muenscher' *Journal of the Royal Horticultural Society* vol. 81 (1956).

Some problems with invasion biology

Invasion biology has perhaps suffered more than most scientific disciplines since the notion of ‘invasion’ frequently evokes anthropocentric concepts (aggression, assault, attack, encroachment, incursion, infringement, intrusion, onslaught, raid, etc.) (Richardson et al. 2000). The authors were apparently blind to the psychological overlay associated with the term ‘weed’; and to the emotional and other forces at play.

A meta-analysis of the invasion studies literature by Professor Anne Goodenough demonstrated that the majority had been undertaken on the basis of a fundamental assumption that species translocation is inevitably problematic. Restricting impact assessments to negative interactions automatically biased the supposedly objective classifications.⁴

Invasion biology is a growth industry. Hundreds, if not thousands of papers, and many books have been published on the topic. Some [eg, Theodoropoulos 2003] now say that it is a pseudo-science, to which the practitioners respond that such attacks are a form of denialism akin to climate change denialists.

The emotive concept of *invasive alien species* is at the heart of invasion ecology. Invasiveness is assumed to be a trait or characteristic of species. The concept is built on the premise that native plants are to be preferred to introduced exotics. ‘Native species are embraced and non-native species are vilified.’ (Davis 2009 p156). Some regard all naturalised exotic plants as weeds. The better view is that plants should not be judged by their origins. (Davis et al 2011) Exotic plants are part of our civilization and belong here as much as we do.

‘There is a kind of irrational xenophobia about invading ...plants that resembles the inherent fear and intolerance of foreign races, cultures, and religions...This xenophobia needs to be replaced by a rational, scientifically justifiable view of the ecological roles of exotic species.’ (Brown 1998) A civilized society should avoid xenophobia whether against plants or people. A scientific approach to weeds must be based on dispassionate consideration of facts not assumptions about values. As Albert Einstein said, ‘Science can only ascertain what is, not what should be.’ Much of the writing about invasive plants suffers from moving beyond what is to what should be.

The native-non native distinction

In a widely read article in *Nature* (2011), Mark Davis and 18 other scientists discussed the pervasive bias among many scientists, conservationists, land managers and policy makers against introduced (alien) species. They argued against the view that introduced species are the enemies of humans and natural systems. The native/alien dichotomy, they wrote, with its origins in 19th century English law, should not be a guiding principle of conservation. They called for conservationists to ‘focus much more on the functions of species, and much less on where they originated’. The call was timely, because the widely held preference for native plants (plants occurring ‘naturally’ in a region) over introduced plants (plants introduced by human agency) is now adversely affecting much loved cultural landscapes by the removal of exotic trees and other plants. The bias may be seen at work in conservation plans prepared by government agencies that do not provide for the conservation of introduced species, treating them as worthless.

A plant that arrives in a new region without human assistance may be accepted as native, but, if the arrival was contributed to by humans, the plant cannot become native in the eyes of some, regardless of how long ago the introduction occurred or how many generations of the plant have grown. But humans are part of nature. ‘It makes little difference if a seed arrives on a bird or a boot.’ (Rodman 1993). Nativeness is not a trait of plants or other species.

The terms *alien*, *naturalize* and *naturalization* are metaphors that apply to plants concepts developed in 19th C law to deal with humans and their relationship with sovereign states. Although

⁴ Goodenough,A (2010) ‘Are the ecological impacts of alien species misrepresented? A review of the “native good, alien bad” philosophy’ (*Community Ecology* 11)

human aliens may be naturalised and become accepted as citizens, introduced plants are not given the same rights and remain aliens, through many generations, and forever. But plants do not owe allegiances; they do not have nationality. (Seddon 2002)

Nativism

The Lort Smith Animal Hospital has a policy on treatment of native and non-native birds: when an injured bird is brought in, if it is 'native' the bird is nursed back to health, if it is 'non-native' it is put down. Such heartless nativism comes from mistaken views about introduced species that have a dark history and disturbing xenophobic associations. Nativism has an unfortunate history, with overtones of fascism.

Ecosystems that change to incorporate introduced species should be seen not as degraded, but simply new ecosystems with as much environmental value as established ecosystems. Richard Hobbs from the University of Western Australia has been a leading voice in writing about novel ecosystems.⁵

The conservation of significant cultural landscapes is now threatened by the widely held preference for native plants over introduced plants. Willows provide a telling example.

The bias in favour of native plants has become prescriptive. Introduced plants are denigrated as aliens or invasive species and accorded no value, despite the importance of exotic trees and other plants to landscapes. Trees designated as weeds are being removed regardless of their cultural significance.

Weeds as the enemy

A real problem about the war on terror is to specify the enemy. There is a similar problem with the war on weeds, the enemy is elusive and hard to identify. The weed status of many plants is disputed. Some plants that were once serious weeds such as Darnel (*Lolium temulentum*), the tares of the Bible, a weed 'infelix lolium' in Virgil's *Georgics*, and part of the crown of weeds worn by Shakespeare's King Lear, are now minor weeds. Some useful plants, such as *Pinus radiata* may be weeds in bushland near their plantation setting. *Cyperus rotundus*, a food staple for millennia in ancient Africa, has now been designated the world's worst weed (Dwyer 2016). We may add to Ralph Waldo Emerson's definition of a weed 'a plant whose virtues have not yet been discovered' or *whose virtues have been forgotten*.

Once weeds were confined to weeds of horticulture and agriculture; even then it was uncertain whether many plants were weeds. There are many examples of plants which are weeds in some circumstances and valued plants in others. One such is Wimmera Ryegrass (*Lolium rigidum* Gaudin), extensively used for pasture improvement by pastoralists, and thus valued, but now a serious crop weed with herbicide resistance (Powles 2007.) If this resulted from the equivalent of conventional warfare, now we have in effect total war as hundreds of plant species, which have been cultivated in gardens for many years, are said to be *environmental weeds*, or *invasive alien species*.

I should say at once that some plants introduced to cultivation in Australia have been very troublesome. We are all familiar with the Prickly Pear saga, with the curse of the Blackberry and with Gorse, to take but three examples. Many more could be given. But the trouble is that the category *invasive* (which is as open textured as the word *weed*) has been used to tar with the same brush many plants that hardly seem troublesome at all. Some garden escapes have been much more serious than others. To regard all of them as 'invasive alien species' is to bring a nativist agenda to the task of managing plants that cause or threaten harm. We should assess plants on the basis of the harm they do rather than their origins.

These new categories are radically different to traditional weeds. The consequences of inventing these new classes of weeds have been profound. It is not just introduced plants which are under

⁵ Hobbs et al, *Novel Ecosystems: Intervening in the New Ecological World Order* (2013).

attack, although the campaign against naturalized exotics has become pretty remorseless, inviting the label *xenophobia*. In a bizarre attempt to save the bush from itself, native plants are being removed as weeds if they seem to be too successful.

Australian plants as weeds

The designation ‘weed’ has been extended to Australian indigenous plants. Examples are Sweet Pittosporum (*Pittosporum undulatum* Vent.), and Cootamundra Wattle (*Acacia baileyana* F. Muell.). These plants are said to be weeds when outside their ‘native range’ or ‘out of balance’ within it.

Native range is based on the plant distribution at the time of European settlement. It ignores the effects of environmental management by Aboriginal people. (Bill Gammage, *The Biggest Estate on Earth* 2011). The concept of the *balance of nature*, which at one time persisted in ecological theory, has now been discredited.⁶



Pittosporum undulatum has been a popular garden plant, with the advantages of being fast growing; with sweetly perfumed creamy white flowers in spring followed by small bright orange fruits which attract a variety of birds to the garden.⁷ It does well in coastal gardens. It has a long history of use as a hedging plant.⁸ In human

modified landscapes it may make a good contribution. (see photograph from Mt Eliza) There has been a recent tendency to remove *P. undulatum* from human modified landscapes because it has been classified as an environmental weed. When the basis for that classification is examined, the case for such removals from some pristine natural landscapes may not be strong. But there is often little justification for seeking to exclude it from human modified landscapes.

Cootamundra Wattle

The popularity of Cootamundra Wattle (*Acacia baileyana*) as an amenity tree is undoubted. It has been said to be ‘probably the most popular wattle cultivated.’ Many varieties of Acacias were popular garden plants in the 1890s; valued for their beautiful flowers and their contribution to the shrubbery.⁹ Edna Walling recommended *A. baileyana* in her influential, *A Gardener’s Log*, first published in 1948. At about the same time, the garden writer Harold Sargeant (1882-1973), whose pen-name ‘Anthos’ was a household word to Victorian gardeners, was advocating the planting of ‘this popular native.’¹⁰

⁶ Low, T. (2002) *The New Nature*.

⁷ Greig, D. (2000) *Flowering Natives for Home Gardens* (Angus and Robertson, Sydney) p288.

⁸ See e.g. *Lipman v Clendinnen* (1932) 46 CLR 550.

⁹ See e.g. Browne, M. ‘*The Flower Garden in Australia by Mrs Rolf Boldrewood*’, First published 1893 (Mulini Press, Canberra 1995) p124.

¹⁰ Sargeant, H. *Garden Trees and Shrubs in Australasia*, 2nd ed.(Colorgravure, Melbourne 1952) p44.



It seems that the plant was already under cultivation before Mueller described it in 1887. He named the species in honour of F. M. Bailey who had sent him flowering branches 'taken at Brisbane from a tree in Bowen's Park, the origins of which could not with certainty be traced.'¹¹ Bowen Park was the home of

the Acclimatisation Society of Queensland. It was named for Sir George Bowen, the first governor of Queensland, and the first patron of the Acclimatisation Society. Mueller described the species as rare, being found initially, 'only near Cootamundra on one of the sources of the Murrumbidgee and near To-morrow on a tributary of the Lachlan River.' It had also been found 'quite recently' near Wagga Wagga. It may well have been under cultivation in other places, in addition to Queensland, when these words were written.

Its popularity has resulted in Cootamundra Wattle becoming naturalized in all mainland states of Australia except Western Australia and Northern Territory. It has also been introduced to New Zealand, the USA and Southern Africa. Its environmental weed status is, however, confirmed by the *Flora of Victoria*. The date when the plant became naturalized in Victoria is not known, but may be later than 1930. Ewart did not include it in his *Flora of Victoria* (1930). By 1972, three hybrid populations with *A. baileyana* as a presumptive parent were recorded in Willis' *A Handbook to Plants in Victoria*.

It is clear that Cootamundra Wattle in Victoria is outside the range described by Mueller. Where it interferes with indigenous vegetation it may be regarded as a weed. It seems, however, unlikely that it will be eradicated. Should it now be accepted as an established part of the flora, an attractive exotic in gardens and other human modified landscapes?

Propaganda

A disturbing aspect of the War on Weeds has been the use of propaganda. It has long been remarked that false and exaggerated claims about the enemy are common in times of war. As the epigraph to the English MP Arthur Ponsonby's *Falsehood in Wartime* (1928) put it, 'When war is declared, Truth is the first casualty.' Psychological warfare uses propaganda to influence the morale of enemy and friendly groups.

In our age the dissemination of propaganda has become part of waging war. It is not surprising that the war on weeds has to some degree been waged by the dissemination of exaggerated claims about the threat of weeds, which go beyond the scientific evidence, and are calculated to garner support for the war effort through feelings of fear and insecurity.

The natural tendency of uncontrolled or uncontrollable weeds to frighten us has been reinforced by Government propaganda. Government material about 'sleeper weeds', with its resonance to the term 'sleeper cell', is an example of propaganda being used against the community to cause fear of possible harm by plant invasions, that may never happen

What are 'sleeper weeds'? The term comes from a paper by Richard Groves in 1999, in which he introduced the expression *sleeper weed* as a label for 'invasive plants that have naturalized in a

¹¹ Mueller, F. 'Descriptions of some Hitherto Unknown Australian Plants' *Transactions of the Royal Society of Victoria* Vol. 24 (1888) pp168-172.

region but not yet increased their population size exponentially.¹² In 2006 Groves acknowledged that the concept of sleeper weed had gained a level of general acceptance and *misuse* before the science had been done.¹³ I have argued elsewhere that this much-abused expression should be abandoned, and will not repeat the detail here (Dwyer 2008).

Many of the plants described as ‘sleeper weeds’ are not yet and may never become naturalized in Australia. There is no reliable way to identify which of the 2500 plus naturalized exotics in Australia are *sleeper weeds*, or to establish whether the label can properly be applied to any of them. The expression ‘sleeper weed’ is calculated to attract feelings of fear of possible harm from plant invasions that not only may never happen, but which weed science cannot reliably predict. To invoke the term without a sound basis for the existence of sleeper weeds is to engage in propaganda. Government agencies should not engage in psychological warfare against their own citizens as part of their war on weeds.

Given the emotions associated with weeds, it is also understandable that they should be a field of psychological warfare. Feelings such as fear, disgust, guilt, hatred and xenophobia can easily be manipulated. We may be conscripted into the war on weeds without an opportunity to consider that there may be a better way to respond to this aspect of nature’s realm.

Collateral damage

US forces use the term *collateral damage* as an acknowledged aspect of warfare. The expression is a euphemism used to refer to ‘unintended’ damage to people or facilities as a result of military action against enemy targets. Collateral damage is also a feature of the war against weeds. The damage may be direct, or indirect. As an example, aerial spraying of herbicides has often damaged plants other than those targeted, by spray drift. Other environmental harm such as contamination of water supplies has also been caused.

Another type of collateral damage which has been noted is the replacement of the targeted species by another unwelcome plant, particularly in grasslands. In North America, programs to control Spotted Knapweed (*Centaurea maculosa* Lam.) have often resulted in an upsurge of Cheatgrass (*Bromus tectorum* L.). There are many reasons to question the value of attempting to manage the plant composition of natural areas. It has been acknowledged that ‘within natural systems, *all management actions have side effects* due to the complexity of natural systems and the limited specificity of the tools employed’ (emphasis added) (Pearson & Ortega 2009). The use of herbicides to control unwanted plants colonizing ‘natural’ landscapes has affected fauna and caused other unintended and unwanted effects. Unwelcome ‘side effects’ demonstrate both the complexity of ecological systems and the difficulties of avoiding harm by any human intervention.

Herbicide pollution of the environment, the air we breathe, the water we drink and the food we eat has become part of modern life; some harmful effects are known but the full effects have not been explored. IARC (International Agency for Research on Cancer) has labeled glyphosate (‘Roundup’) a probable carcinogen. California has listed it as a known carcinogen. A jury there has recently awarded a gardener with terminal cancer caused by exposure to Roundup \$US 289 m damages. Countries and cities around the world are seeking to become Roundup free. In 2015 the Netherlands Parliament passed a law prohibiting private parties from buying Roundup. Sri Lanka banned the sale of Roundup after a 2014 study found it to be responsible for an increase in chronic kidney disease. Charles Massey called glyphosate ‘One of the worst chemicals ever to be introduced into the environment’ (Charles Massey 2017).

The growing popularity of organic farming is based on avoiding the use of pesticides and herbicides, as is the regenerative agriculture Massey and others, such as Tao Orion in *Beyond the*

¹² Groves, R. ‘Sleeper weeds’ in A Bishop et al (eds) *Proceedings of the 12th Australian Weeds Conference* (1999).

¹³ Groves, R. ‘Are some weeds sleeping? Some concepts and reasons’ *Euphytica* Vol 148 March 2006 pp111-20.

War on Invasive Species (2015) advocate. ‘No kill farming’ involves using the benefits of weeds. Most chemical pesticides are harmful to humans and the environment. Pesticides are now seen as another form of atmospheric and environmental pollutant together with acid rain and nuclear fall-out. Are any weeds so nasty that the bad effects of herbicides should be tolerated? Many now say that the use of herbicides to produce the perfect garden lawn, for example, is simply unacceptable. The spraying of roadsides with herbicides, instrumental in the evolution of glyphosate resistant weeds, is hard to justify. Roadside weeds should be tolerated unless there is good reason to intervene. If control is necessary, slashing is preferable to the use of poisons.

Herbicides as weapons of war

The herbicides 2,4-D and 2,4,5-T (2,4,5-trichlorophenoxyacetic acid), developed during the 1940s, had become widely used as selective weed killers in agriculture by the 1950s. Sometimes referred to as *phenoloxyl agents*, these synthetic chemicals work within a plant by interfering with the plants’ physiology for long enough to kill it. They are known as systemic herbicides because their mode of operation is by translocation within the targeted plant. The new chemical weed controls seemed magical in their efficacy, and were part of a new era of agriculture based on increased mechanisation, the wider availability of fertilisers and pesticides, and improved crop varieties. Unfortunately, long developed skills of farm husbandry, such as crop rotation and cultural control of weeds, were abandoned in the revolution, and it was only gradually understood that the new agriculture was unsustainable.

Herbicides were used as instruments of war in the 20th century. During the 1960s the U.S. military in Vietnam adopted a strategy against the Viet Cong and North Vietnamese of defoliating large areas of jungle to hamper movement of troops and supplies, and to destroy food crops. Aerial spraying over large tracts of the country was carried out, using millions of gallons of herbicides such as ‘Agent Orange’ and ‘Agent Blue’. This was not just war on weeds but war on an entire environment by what the German philosopher Peter Sloterdijk (2009) called *terror from the air*, a mode of warfare that he says began with the use of poison gas by the German Army in 1915 at Ypres in Northern France. Long after the Vietnam War, the herbicides continue to have serious, long-term harmful effects on the people of Vietnam and on the U.S and allied troops involved in the spraying.

Glyphosate (‘Roundup’) has been the most widely used herbicide world-wide since the 1980s. In 2014, 825,000 tonnes were used world-wide. Every year farmers in the US spray almost a pound of glyphosate on every acre of cropland in the country. Worldwide nearly half a pound is sprayed on every acre. Roundup residues are now widespread in the US environment and have been found in both animals and humans, including in the breast milk of American women. Even honey-bees have been affected.

Weed Resistance

Weed warriors might characterise resistance as weeds fighting back. Evans (2002) described the development of weed resistance in Canada as mounting ‘a successful counter attack.’(8)

The development of resistance by plants, insects and bacteria to substances used to kill them is a natural evolutionary strategy. Plant mimicry, where weeds come to mimic the crop so that they are less likely to be weeded out, is a similar strategy.

Weed resistance to herbicides is just another chapter in the long co-evolution of humans and weeds. From the plants’ point of view, resistance should be seen as immunity from poison developed by the plant over generations. By repeatedly killing large populations of a plant with herbicide, humans select those members of the plant population with natural immunity to the herbicide. The immune varieties become more numerous and replace the varieties susceptible to the herbicide. Herbicide resistance is just one example of weed adaptation to cultivation practices. If weeds are seen as our enemy, humans have shaped the enemy and are at least in part responsible for what they do.

Although not fully anticipated by weed scientists, herbicide resistance has now occurred world-

wide. The most widespread and severe occurrences are said to be in the southern Australian grain belt, where resistant weeds are now encountered beyond cereal cropping areas in orchards, pastures, roadsides, railways, perennial lucerne fields, and other areas where herbicides have been used repeatedly. Resistant populations of some 22 species are known in Australia. We should ponder the lessons to be learned from this aspect of the War on Weeds.

An unwinnable war

That this or that war is *unwinnable* has been a constant refrain in modern times since the war in Vietnam. The claim harkens back to traditional theories of just war. The death and destruction caused by war have been seen as justifiable if certain conditions are satisfied. A reasonable hope of success was one of the required conditions for a just war, so that to wage an unwinnable war could not be justified. What would count as winning the war has often been difficult to establish. Criticisms of the war on terror have included contentions that it is unwinnable, and that it is impossible to specify what would constitute winning the war. The war on weeds is subject to the same criticism, with many now accepting that it is unwinnable, and that the harm done to people and the environment by chemical dependency cannot be justified.

A call for a truce in the war on weeds

The problems associated with pesticides have general implications. Of herbicides it has been said that they have created as many problems as they have solved because reliance on chemicals has masked the underlying causes of weed problems, and because ‘chemical dependency perpetuates ecologically unsound farming practices’ (Evans 2002). Such problems are inherent in a war on weeds. What has come to be called in Australia ‘integrated weed management’ is in many respects a revival of good husbandry based on the recognition that weeds are not implacable enemies but rather unruly neighbours (Evans 2002).

Weeds are part of the realm of nature. What may seem to be victories over nature have a way of being illusory. As Friedrich Engels (1820–1895) wrote more than 100 years ago in a much-quoted essay, ‘Let us not however flatter ourselves overmuch on account of our victories over nature. For each such victory it takes its revenge on us. Each of them, it is true, has in the first place the consequences on which we counted, but in the second and third places it has quite different unforeseen effects which only too often cancel the first... Thus at every step we are reminded that we by no means rule over nature like a conqueror over a foreign people, like someone standing outside nature – but that we, with flesh, blood and brain, belong to nature, and exist in its midst, and that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to know and correctly apply its laws.’ (Quoted in Passmore 1974)

As horticulture and agriculture depend on the co-operation of nature, without which we can grow nothing, ideas of conquest over nature are simply inappropriate. Successful gardening and farming require that we should seek to know and understand nature’s ways on which our efforts depend. But we should not hope to subjugate nature to achieve our ends.

We must always keep in mind the implications of the fact that weeds are part of nature. Our relation with nature may be best understood as one of reciprocal interplay. Humans may use nature to serve their ends, but the ends of the plants and animals we cultivate could as well be seen as being served by humans. This insight was attributed by the German Philosopher Immanuel Kant (1724–1804), to the great botanist Carolus Linnaeus (1707–1778). Thus we cultivate plants for our own purposes, but from the plants’ point of view the cultivated plants could be seen as using humans so that they may thrive and multiply. On this approach, man is a means rather than an end. For a plant to be taken up by humans and cultivated is a powerful and effective evolutionary strategy. That weeds should take advantage of the opportunities presented by the horticultural and agricultural activities of humans and the waste-lands they create, to reproduce and flourish is an understandable feature of the natural order. We may need to accept that the plants we call weeds are inevitably part of nature’s realm. As the environmental historian Peter Coates (2006) put it, ‘Nature’s self-willed and ungovernable qualities are exemplified by the more obtrusive of non-native species; their natures, not our desires, will continue to determine

outcomes.’

Weeding has been a necessary feature of horticulture and agriculture from the earliest times that humans engaged in these activities. But an indiscriminate war on weeds is far from necessary. Weeding does not require a warlike attitude or the use of the weapons of warfare, such as the broadcasting of the synthetic herbicides developed since the 1940s.

We call plants weeds when we want to attack them, just as we call members of an opposing military force *the enemy*. What makes weeds the enemy lies not in the plants themselves but in the humans’ desire to eliminate them, whatever the basis for that desire. A different approach would be to stop being frightened of them, to acknowledge their virtues and their place in the realm of nature, to seek a more peaceful co-existence. This should not be seen as surrender in the war on weeds, rather to make peace. It is in any event time to declare a truce.

Conclusion

If we are to achieve a proper understanding of weeds we should avoid the use of emotive and prejudicial language. To understand and describe the place of weeds in nature and in human society we should aim to use expressions that are value neutral and dispassionate. The emotions aroused by weeds mean that we should guard against the risk that our actions may be governed by our emotions; that we may treat plants as weeds in circumstances where to do so is not appropriate or justifiable. We should seek to overcome emotions of fear and guilt in our responses to weeds in general and so called ‘environmental weeds’ in particular. We should also recognize that we have choices about which plants are to be treated as weeds. Understanding that value judgments are involved, and that inappropriate social coercion may be present, we should look for the reasons why plants are called weeds and decide for ourselves whether the designation is compatible with our values. To adapt the well-known motto of Marie Curie, ‘Nothing in life is to be feared, it is only to be understood.’ Now is the time to understand weeds more, so that we may fear them less.

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