Perspectives on Horticultural Therapy in Australia

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ADDITIONAL INDEX WORDS. **gardening, horticulture, people-plant interaction, sociohorticulture, therapy**

SUMMARY. Human awareness of plants in Australia goes back 50,000 years when the aboriginal first began using plants to treat, clothe and feed themselves. The European influence came in 1778 with the First Fleet landing in New South Wales. Australia's earliest records of using horticulture for therapy and rehabilitation were in institutions for people with intellectual disabilities or who were incarcerated. Eventually, legislation created greater awareness in the government and community for the needs of persons with disabilities, and many worthwhile projects, programs and organizations were established or gained greater recognition. Horticultural therapy programs may be found in nursing homes, rehabilitation centers, adult training support services, hospitals, day centers, community centers and gardens, educational institutions, supported employment, and the prisons system. This article reviews the history and development of Australian horticulture as a therapy in the treatment of disabilities and social disadvantaged groups, and includes an overview of programs offered for special populations and of Australia's horticultural therapy associations. It also discusses opportunities for research, teaching and extension for horticultural therapy in Australia.

Human awareness of plants in Australia goes back 50,000 years when the Australian aboriginal used local plants to treat physical ailments, for dyes, medicine and clothing, and for food and drink. The aboriginal harvested the native fruits and berries if game was scarce. Women grubbed for tubers and grains, used the native grasses and bark for baskets, and used gums and resins for canoes. The European influence arrived in 1778 with the First Fleet landing at Sydney Harbour (Port Jackson), New South Wales (NSW). The British Government had ordered Captain Arthur Phillip to take 11 shiploads of convicts to Australia (New Holland) to establish a convict settlement. Their early association with plants and animals was linked to survival. Fresh food consisted of the local native animals, parrots, and fish. Little thought was given to the niceties of life under such a repressive regime (Pescott, 1940).

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Thanks to the following people for contributing to this paper: Professor Margaret Burchett, Faculty of Science, University of Technology, Sydney, Margaret Armstrong, Horticultural Therapy Association of Victoria, Cynthia Carson, Department of Primary Industries, Brisbane, Lesley Taylor, Middleton, Tasmania, Sue Durbin, Horticultural Therapy Society of NSW Inc., and Christine Perrers, Joseph Banks Centre, Australian National Botanic Gardens, Dickson, ACT. The cost of publishing this paper was defrayed in part by the payment of page charges. Under postal regulations, this paper must be hereby marked *advertisement* solely to indicate this fact.

The period of the 1800s to the 1900s saw a series of changes in Australia: in the structure of the population, in patterns of employment, in directions for economic and social development, in the ways energy was used, in attitudes to colonial government, and in concern for equity issues and people's rights. These issues were beginning to mold the Australian people's philosophy and attitude to the role plants play far beyond their traditional role of food, fiber, and medicine (Relf, 1990, 1992). In Australia the use of horticulture as a therapy and for rehabilitation paralleled the legislation for the institutional care for people with disabilities, the disadvantaged and the unemployed. Horticulture had long been regarded as a treatment for such individuals, yet historically, as in many overseas countries, the benefits had only been anecdotal.

Land work for people with intellectual disabilities had its beginnings around the 1850s in hospital farms in such institutions as Callan Park in Sydney, NSW, and the Wilsmere Hospital (formerly Kew Hospital) in Kew, Victoria, and for people who were incarcerated in Long Bay Prison in Sydney, NSW, and Pentridge Prison in Coburg, Victoria. Records show that the garden allotment system was widespread throughout Victoria from as early as 1856 with the construction of the Wilsmere Hospital in Melbourne. Other large institutions established in the Colony of Victoria to house people with psychiatric and mental disabilities were located at Yarra Bend, Beechworth and Ararat; all were isolated from metropolitan Melbourne, yet self-sufficient in regard to food production. While horticultural activities were more often for the benefit of the institution than for the patient, there was general agreement that farming, gardening and general outdoor work were beneficial for many of the patients. Medical staff at these institutions had observed those patients suffering from stress and confined to such institutions often recovered more quickly when working with plants or soil (Aldous, 1984).

In the decade from 1850, Australia's population increased from 400,000 to in excess of 1 million. The new settlers, who had been attracted to Australia as a result of the gold rush or land reforms, were returning to the unplanned and often overcrowded cit-

ies of Melbourne and Sydney. The reformers of the era tried to improve the health and pollution problems, particularly for the poor and destitute, and to make cities function more efficiently. In 1875, Ebenezer Howard put forward a number of proposals for garden cities where land was to be set aside in perpetuity for communal tilling and commercial gain. In 1879 the government set aside 20,000 acres (8,097 ha) of parkland, 14 miles (22.5 km) south of Sydney, for public use forever, 7 years after the dedication of Yellowstone Park in the United States of America. In 1888 Centennial Park (formerly the Lachlan Swamps), was handed over to the people of Sydney as one of the highlights of the Anniversary Day celebrations.

In 1892 the Victorian and NSW governments introduced the first government-run farms, which provided food and shelter in exchange for work as part relief for the growing unemployed. These pig, poultry, vegetable and flower farms provided three meals a day in exchange for work and provided the first of the training grounds for young city people on the skills of farm work. The University of Western Sydney (formerly Hawkesbury Agricultural College, established 1891), the Charles Sturt University, (formerly the Wagga Agricultural College, and dedicated in October 1892) (Sutherland, 1996), and the University of Melbourne-Burnley College (formerly the Burnley Horticultural College, established 1891) were all initially modeled on these farms. Even until the late 1960s students grew fruit and vegetables for the kitchen and maintained the landscaped grounds as part of their practical work component.

During the depression of the 1930s and the two World Wars there was a renewed interest in the use of communal gardens. In Australia the Women's Land Army was prominent during 1939-45 for providing food for the troops. With the cessation of World War II, many Australians went back to growing fresh produce, on newly established soldier settlement blocks. Growing fresh produce continues to be a popular leisure activity, with records showing that two-thirds of Australian households consider themselves to be gardening households, and a third indicating that the household garden is a hobby, providing satisfaction, pleasure, and pride

(Australian Government Publishing Service, 1987).

After World War II, many returning service personnel benefited from the Federal Government's rehabilitation scheme, which provided for medical treatment and vocational training. One program at the University of Melbourne-Burnley College retrained many service personnel in a wide range of horticultural skills (Winzenried, 1991). The Australian and New Zealand Army Corp. Day Centre, in Brighton, Victoria, continues to provide periodic gardening activities for its elderly male war veterans today.

Programs for special populations

Much like the English experience (Thoday and Stoneham, 1989), the 1960s saw the therapeutic use of horticulture in the husbandry of fruit, flowers and vegetables, where it was seen as both a stimulus and reward. During the same years a number of hospital based programs developed, however it was not until the 1970s and 1980s that Australia's states and territories saw the need to develop horticultural therapy programs for special populations (Table 1). The first documented therapeutic gardening program was initiated at the Queen Elizabeth Geriatric Centre, Ballarat, Victoria in 1978 (Aldous, 1994b). Curator Bill Stubbs worked with gardening colleagues and paramedical staff to provide areas for the seated gardener and walking rehabilitation programs for the confused or wandering resident (Stubbs, 1979). In the same year, Alan Werner established a wholesale nursery in association with the Knox Spastic Centre in Melbourne. This center provided employees the opportunity to develop their horticultural skills and encouraged a sense of achievement in managing a nursery on a daily basis. In 1990 a sensory garden was included that provided a range of sensory experiences to employees and staff (Tinkler, 1990). In 1979 the Kevin Heinze Garden Centre for the Handicapped was established in Doncaster, Victoria as a recreational gardening center for people of all ages with disabilities or special needs. Emphasis was placed on participation and sharing, including making new friends, learning and having fun (Margaret Armstrong, personal communication). In 1988, 29.6 acres (12 ha) of garden, greenhouse and vegetable plots were established at the

Table 1. Australian hospitals with horticultural therapy programming for special populations.

Hospital	Location
Benalla Hospital	Coster Street, Benalla, VIC 3672
Bundoora Repatriation Hospital	Plenty Road, Bundoora, VIC 3083
Dandenong Hospital	134 Cleland Street, Dandenong, VIC 3175
Heatherton Hospital	642 Burwood Road, Hawthorn East, VIC 3202
Heidelberg Repatriation Hospital	Banksia Street, Heidelberg West, VIC 3081
Hicks Cottage, Macquarie Hospital	Ryde, NSW 2112
Mont Park Hospital	Waiora Road, Mont Park, VIC 3085
North West Hospital	Flemington Road, Parkville, VIC 3052

Victorian Rehabilitation Centre (formerly the Traffic Accident Commission, Glen Waverley) to study the problems of head injury patients and to evaluate horticulture as a means of therapy in their rehabilitation.

In 1982, another significant event was the opening of the Banksia Centre, which operated from the grounds of the Australian National Botanic Gardens in Canberra. A forerunner of the Australian day centers, these Gardens for the Disabled were developed, as a therapeutic horticulture facility, in close association with the Disabled Living Foundation and the Reader's Digest Association. The center included a demonstration garden and activities area and programs and services that encouraged gardening activities by people with physical, intellectual or visual disabilities, elderly people, and those undergoing rehabilitation (Wrigley, 1981). Now renamed the Joseph Banks Centre, the garden has placed more emphasis on native plant propagation, but people with special needs are still welcome and visit in groups to participate in horticultural activities, on a user-pay basis (C. Perrers, personal communication).

In 1985, the Royal Tasmanian Botanical Gardens was the first government agency to employ a full-time horticultural therapist to work in their

unit, the Easy Access Garden. This garden has raised garden beds, non-slippery walking surfaces, wide pathways for easy access, heated glasshouses, an indoor/outdoor potting shed, a wheelchair accessible toilet, as well as conventional garden beds. The horticultural therapist provides workshops and activities for nursing homes, rehabilitation centers, older people with intellectual disabilities, children from special schools, such as the Headway organization, and those who have suffered traumatic brain injury (L. Taylor, personal communication). In Victoria a number of smaller horticultural therapy programs opened in the mid 1980s and included the Royal Victorian Institute for the Blind, Kooyong; the Association for the Blind (George Vowell Centre), Mt. Elisa; the Peter James Centre, Burwood; and the Heatherton Hospital. The Fairlea Women's Prison, in Victoria, operated a horticultural/hydroponics program, which was run in conjunction with the Broadmeadows Technical and Further Education (TAFE) College. At the Long Bay, Silverwater and Grafton Jails, in NSW, a commercial nursery worked in partnership with prison authorities to produce containerized trees and shrubs. Examples of other centers opening in Australia are listed in Table 2.

In Australia there are numerous

groups that benefit from horticultural activities, including hospitals, geriatric centers, childhood institutions, prisons, special schools, sheltered workshops, rehabilitation centers, homes for the disabled, vocational training centers, community centers, residential homes for people with physical and developmental disabilities, public gardens and private homes (Aldous 1994a; Hamilton, 1987; Smith, 1985). There are schools serving students with hearing and visual impairments, garden centers, psychiatric residential and day units, nursing homes, community farms, municipal government park agencies, horticultural societies and botanic gardens. Information regarding the names and locations of such institutions concerned with land use horticulture for people with disabilities in Australia is available from the author.

Horticultural therapy client base

Australia's client base is very diverse and includes all categories of disability as listed by Relf and Dorn (1995). Hamilton's research (1987), taken from 4,432 clients, documented 529 horticultural therapy programs in Victoria, under the categories of frail and elderly, sight impaired, socially disadvantaged and the physical disabled (Table 3). All the agencies mentioned undertook horticultural therapy as part of the social and physical rehabilitation process. Results showed that the emphasis was placed on the vocational training and recreation for clients with developmental disabilities, while with the psychiatric client, horticultural activities were more related to psychiatric and social rehabilitation. Table 4 illustrates the major vocations involved in providing horticultural therapy programs in Victoria. Porter

Table 2. Examples of Australian garden centers with horticultural therapy programming for special populations.

Hospital	Location
Easy Gardening Centre	City of Randwick Community Nursery, Randwick, NSW 2031
Ilma Lever Garden Centre	2a Station Street, Coburg, VIC 3058
Kevin Heinze Garden Centre	39 Wetherly Road, Doncaster, VIC 3108
Kui Nursery	101 Queen Street, Colac, VIC 3250
Natural Resource Conservation League	593 Springvale Rd. South, Springvale, VIC 3171
Queen Elizabeth Geriatric Centre	Ascot Street South, Ballarat, VIC 3550
Selby Garden Centre	Mittagong, NSW 2575
Southaven Retirement Complex	Kogarah, NSW 2217
Victorian Rehabilitation Centre	499 Springvale Rd., Glen Waverley, VIC 3150

Table 3. Client type and horticultural therapy program area in Victoria, Australia (after Hamilton, 1987).

Client type ²	Horticultural therapy programs in each area (no.)						Total of areas	Percent of areas
	Psychiatric	Rehabilitation Social	Physical	Vocational training	Recreation	Sheltered employment		
Frail and elderly	8	13	13	3	18	3	58	11.0
Intellectual disability	5	15	8	31	30	11	100	18.9
Visual impairment	4	12	10	6	13	6	51	9.6
Physical disability	7	18	18	13	27	10	93	17.6
Physical rehabilitation	6	11	14	6	10	3	50	9.5
Psychiatric disability	19	16	9	6	13	3	66	12.5
Socially disadvantaged	7	15	10	9	16	2	59	11.2
Other ²	4	13	8	9	16	2	52	9.7
Total of types	60	113	90	83	143	40	529	
Percent of types	11.3	21.4	17.0	15.7	27.0	7.6		100

²Clients can be classified in more than one group, and so appears more than once in the table. Clients included interested lay persons, multiple sclerosis units in hospitals, benevolent homes for the elderly, aged person villages, accident rehabilitation units, the spastic society, associations for the blind, and those from the health services, commission units, the state schools nursery and specialist education units.

³Other sources include education, maintenance therapy, supportive employment, advisory services, residential services (rehabilitation), prisons, slow-learners and people with a hearing impairment.

(1995) surveyed 170 health care services (nursing homes, private and public hospitals and rehabilitation centers) in metropolitan Melbourne and found that individual program management and assessment was dependent on the type of disability and the background training of the program coordinator.

Australian horticultural therapy associations

The People and Plants Association of Australia Inc., the first horticultural therapy association in Australia, was founded in 1980, 12 months before Australia's International Year of the Disabled. This association, through the efforts of Erik Leipoldt, Pat Dorlandt, and others, was instrumental in organizing Australia's first National Conference for the Elderly and Disabled in 1984 (Leipoldt, 1984). This Conference created a greater awareness in the community for the needs of people with disabilities and disadvantages. Delegates at this Conference were to go on and establish state organizations in South Australia, Victoria and NSW with similar aims to the People and Plants Association of Australia. Unfortunately the Association has since closed down, leaving only the regional organizations to carry on the work.

The state of South Australia formed its association in 1983, calling it the Gardening for the Disabled Society (later changed to Gardening for All). Their main aim was to stimulate and encourage the use of horticulture for therapeutic, rehabilitation and vocational purposes in all places where

people with disabilities reside. Unfortunately this state organization has since lapsed.

The Horticultural Therapy Association of Victoria and the Horticultural Therapy Society of NSW Inc. were both founded in 1984 and continue to be active today (Table 5). The NSW state organization, developed under the leadership of Nan Barbour AOM, and others, and developed programs that promoted the use of horticulture in recreation and rehabilitation for people with disabilities, the older person, and their carers (Barbour, 1984; Australian Institute of Horticulture, 1985; Polglase, 1989). In September 1989, the Telopea Centre for Horticultural Therapy, the headquarters for the Society, was officially opened within the grounds of the Ryde Institute of TAFE in Sydney, NSW. It still offers a wide range of courses for people with disabilities, therapists, and carers (S. Durbin, per-

sonal communication). In the same year, the Horticultural Therapy Association of Victoria, under the leadership of Alan Werner and Margaret Armstrong, ran a successful second National Conference under the theme "Landscape Design and Disability". In April 1990, the Horticultural Therapy Association of Victoria was instrumental in organizing a tripartite group of government departments to appoint Victoria's first government Occupational Therapist-Horticulture, Lyn Baker, who was originally located at the Burnley Gardens, Richmond, in Victoria.

Opportunities in education, research and extension in horticultural therapy

Education and Training. The 1980s saw three universities introduce horticultural therapy into their educational

Table 4. Background of personnel running horticultural therapy programs in Victoria (after Hamilton, 1987).

Background	Number	Proportion (%)
Occupational therapy	47	21.4
Horticulturist	39	17.7
Special education	28	12.7
Paramedical	23	10.5
Other	22	10.0
Nursing staff	18	8.2
Volunteers	17	7.7
Other education	14	6.4
Physiotherapy	8	3.6
Landscape	4	1.8
Total	220	100.0

Table 5. Australian horticultural therapy associations.

Association	Location
Horticultural Therapy Association of Victoria, Inc.	39 Wetherby Road, Doncaster VIC 3108.
Horticultural Therapy Society of New South Wales Inc.	c/o Ryde College of Technical and Further Education, 59 Parkes St., West Ryde NSW 2114.
The Joseph Banks Centre, Australian National Botanic Gardens	GPO Box 1777, Canberra Australian Capital Territory 2601.

curricula. In 1982, the University of Melbourne-Burnley College, Victoria, introduced Australia's first horticultural therapy elective, as part of its baccalaureate and graduate diploma programs in horticulture. Since 1991, LaTrobe University, in Victoria, and the Cumberland College of Health Sciences, in NSW, have developed similar electives as part of their experiential studies stream in the baccalaureate of occupational therapy and therapy diploma programs, respectively.

In the last 10 years there has been a strong move away from isolating people with disabilities to an increased interest in assisting them to develop to their full capacity. This philosophical shift has renewed interest in what horticulture offers as a training and employment opportunity. For many years the only alternative employment available was the sheltered workshop and adult training center, where horticulture proved to be one of the more promising areas of occupation and employment. As these centers closed, training was redirected to the local TAFE Colleges. Bentley TAFE in Western Australia, and the Box Hill and Frankston Colleges of TAFE, the Chadstone and Waverley campuses of Holmesglen Institute of TAFE and the Eastern Institute of TAFE in Victoria, have provided certificate level courses in occupational studies (horticulture) for students with mild developmental disabilities. Vocational studies in horticulture were also introduced at the Fairlea Women's Prison, Melbourne, in conjunction with the Broadmeadows TAFE (Aldous, 1984). Short courses were also available through the Royal Horticultural Society of Victoria, the Victorian State Schools Nursery, now part of the Holmesglen Institute of TAFE, the Horticultural Therapy Association of Victoria and the Horticultural Therapy Society of NSW Inc.

As early as 1981 the NSW Department of Training and Education Coordination commenced an apprenticeship program for people with disabilities to mark the International Year of Disabled Persons. The objective of this program

is to provide on-the-job trade training opportunities in state government departments and statutory authorities to people with assessed disabilities. In 1986 the Ryde College of TAFE, in NSW, provided a more specific Nursery Skills program, initiated under a government Job Start subsidy, with the aim of placing highly motivated people with mild intellectual disability into open employment (Pile, 1988). Other TAFE providers at Hornsby, Padstow, Richmond and Brookvale, all suburbs in the outer Sydney metropolitan area of NSW, have also been involved in the development of pre-vocational gardening and nursery training for students with hearing impairment and/or mild developmental disabilities (J. Sellens, personal communication). A number of industry organizations, state botanic gardens and private providers in different Australian states and territories also provide horticultural work experience programs which are designed to expose students with disabilities to all aspects of a horticultural therapy program. However, the provision of training in Australian universities and TAFE colleges in becoming a horticultural therapist is some years off in terms of long-term specialist training. The professional status of such courses will not be realized until undergraduate and graduate level training is achieved (Grossman, 1979).

RESEARCH. Although Australian research opportunities in horticultural therapy are in their infancy a greater consciousness has developed in the past decade. The importance of horticulture impinges on a great many issues, such as the quality of life, the increasing financial and health of the elderly, general office health, coping with stress, physical fitness, the provision of healthy food, and clean air. This suggests that the horticultural therapy research effort should be focused towards Australia's senior citizens, her growing multicultural society, and improving the nation's health and well being.

The Australian Bureau of Statistics (1998) show that senior citizens represent the fastest growing segment of the

nations population. By the year 2031, the Australian population has been estimated to reach 26 million, with an average age of 42 (now 32). Almost 20% of the total population will be over retirement age. This figure includes the majority of people with disabilities. Currently fewer than 10% of the elderly live in nursing homes and hostels. Only between 3% to 4% live in retirement communities and nursing homes. Most of Australia's elderly people prefer to live in their own homes and continue to maintain and enjoy the stimulus of their gardens. Future trends see an increase in the number of retirement villages, nursing homes and retirement communities within Australia and therefore research should address activities that involve the designing of indoor and outdoor activity areas, ergonomically correct tools and work methods, and telelink and Internet programs for housebound people. In 1993 Morrison and Aldous (1994a, 1994b) analyzed the design needs of a healing landscape for the Peter McCallum Cancer Research Institute in Melbourne and were able to develop a landscape based on the physical and physiological needs of that client group.

Although the population of Australia's major cities and provincial towns does not exceed 3.5 million, a number of its people live in high-rise public housing and apartments that often do not have access to private garden space. Community gardens have become of particularly important to the elderly, disabled and disadvantaged individuals in urban areas. Melbourne's most recent community Garden of Eden project on the Collingwood high-rise estate has created a real sense of community, friendship and pride with a range of cultural diverse group of people (Horticultural Therapy Association of Victoria, 1996). More research needs to be undertaken into the role of community gardens in urban areas, and the cost and benefits that they may bring to people in high-rise public housing and apartments.

Researchers have shown that people

who interact with plants recover more quickly from everyday stress and mental fatigue (Bennett and Swasey, 1996), display increased well-being (Browne, 1990) and self-esteem (Smith and Aldous, 1994), show improved health and work productivity (Lohr et al., 1996), and generally show an improvement in their quality of life. Carman (1987) demonstrated that the reasons given for growing food crops were more for their noneconomic rather than their economic benefits. The production of fresh produce not only provides a nutritional benefit, but the activity can also provide psychological benefits such as an interest or hobby, a sense of achievement and satisfaction, as well as physical exercise. Research needs to prove in substantial terms the value of plants to human well being and take up the challenge of Lohr (1994) and move beyond having only anecdotal evidence, to one of generating researchable questions that can be studied using statistical methodology, about how plants affect individuals or communities.

EXTENSION. Australia's garden clubs, societies, associations, volunteer groups, and some government departments have long been involved with providing gardening advice to the general public. Although not part of the treatment process per se, most of these volunteer-based activities play an important extension role by working cooperatively with health care staff in facilitating successful programs. Australia, as with many other countries, have increased numbers of elderly people who feel they have little to live for, people who are isolated and are rarely visited by their families, other people with disabilities and limited mobility, people recovering from physical illness who are depressed and young people who are unemployed or have no practical outlet for their energies. These individuals or groups who might be considered at risk or under stress in the community could benefit by working cooperatively with technically trained volunteers associated with the health care services, garden clubs and horticultural societies.

Conclusion

The Australian horticultural therapy industry has experienced substantial growth in the past half-century and will continue to grow into the new millennium. Research has shown that horticultural therapy has an important place in many health care agencies and

does affect the lives of a diverse range of client groups. Challenges that the industry of the future has to face include the lack of experienced personnel, particularly those trained to university and community college level, and the difficulties in establishing a meaningful research profile.

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