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Remnant horticultural plants at the site of the former Newman's Nursery, 1854–1932

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Abstract

A list and commentary is provided of garden plants that have survived at the 'Water Gully' nursery site of C.F. Newman & Son, in the Anstey Hill Recreation Park, 20 km north-east of Adelaide. Thirty-five species are considered to be naturalised at the site, include *Buddleja dysophylla* (Benth.) Radk., *Myrtus communis* L., *Noltea africana* (L.) Endl., *Prunus mahaleb* L. and *Wigandia urens* var. *caracasana* (Kunth) D.N.Gibson. Consideration is given as to whether some of the horticulturally rare single old plants that have not naturalised should be regarded as heritage plants in the context of the listing of the site on the State Heritage Register, due to the historical significance of the former nursery and gardens.

Introduction

Introduced horticultural plants have become a major source of weeds in Australia. It is difficult to predict which species will naturalise and which will not. Garden plant introductions are also the dominant source of new naturalised plants and weeds in Australia. Fourteen of the 20 weeds of National Significance are of horticultural origin. Mulvaney (1991) found that more woody species were introduced deliberately than were herbs – a result that reflects the predominance of woody species from the very earliest years of European settlement. A more recent analysis of the Australian naturalised flora as a whole showed that about two thirds of the total number of species that had naturalised between 1971 and 1995 had been originally introduced deliberately, mostly for ornamental horticulture (Groves & Hosking 1998). Of the 2,779 introduced plant species known to be established in the Australian environment in 2005, 1,831 (or 66%) are escaped garden plant species (Groves et al. 2005).

In South Australia about one third of recorded species are alien and of these, many are garden escapes. Species in the early stages of naturalisation, especially those from horticulture and agriculture have been poorly documented by botanists. More emphasis has been placed on indigenous species, and cultivated or garden escapees have not been adequately collected. This is reflected in the low numbers of herbarium collections of naturalised species, some of which have the potential to become serious weeds (Hosking et al. 2003).

The site of the former Newman's Nursery and garden at Anstey Hill (Fig. 3), in the foothills of the Mt Lofty Ranges north-east of Adelaide, is an example of the persistence of some exotic species planted between the late 1840s and 1932.

An account of the Newman family and of the early history of the 'Model Nursery' of C.F. Newman & Son was published in *Australian Garden History* (Middlemis 2003). A plan of the layout of the site and a photograph of the house and nearby buildings, as well as a bibliography was included. The garden or current remnant exotic plants were not discussed.

This paper aims to record the horticultural species persisting after 160 years and to assess whether they are naturalised or naturalising at the site. Only taxa considered to be original plants or derived from the former nursery or its gardens are included.

According to Hosking et al. (2007), 'Naturalised' refers to non-native taxa that have been reproducing (sexually or vegetatively) in the wild for at least one generation. 'Naturalising' refers to taxa growing in the wild, but not yet reproducing or spreading vegetatively.

Groves et al. (2005) has similar concepts: 'Naturalised species' are from outside the region in question and can maintain populations in the wild without cultivation. 'Invasive plants' are naturalised species that are spreading.

These definitions for 'naturalised' would then appear to include all planted species at the site. More useful for management of this heritage-listed site would be a record of species that are actually spreading or invading bushland.

While many of the species listed here already have a record of naturalisation, either in S.A. or interstate, it is of interest to document their spread from a known site of origin and date of planting.

This paper reports long term observation over 25 years of the planted species at the nursery site. We hope that this will be used as a basis for the control of those species judged to be naturalising and at risk of becoming naturalised, or which are already environmental weeds.

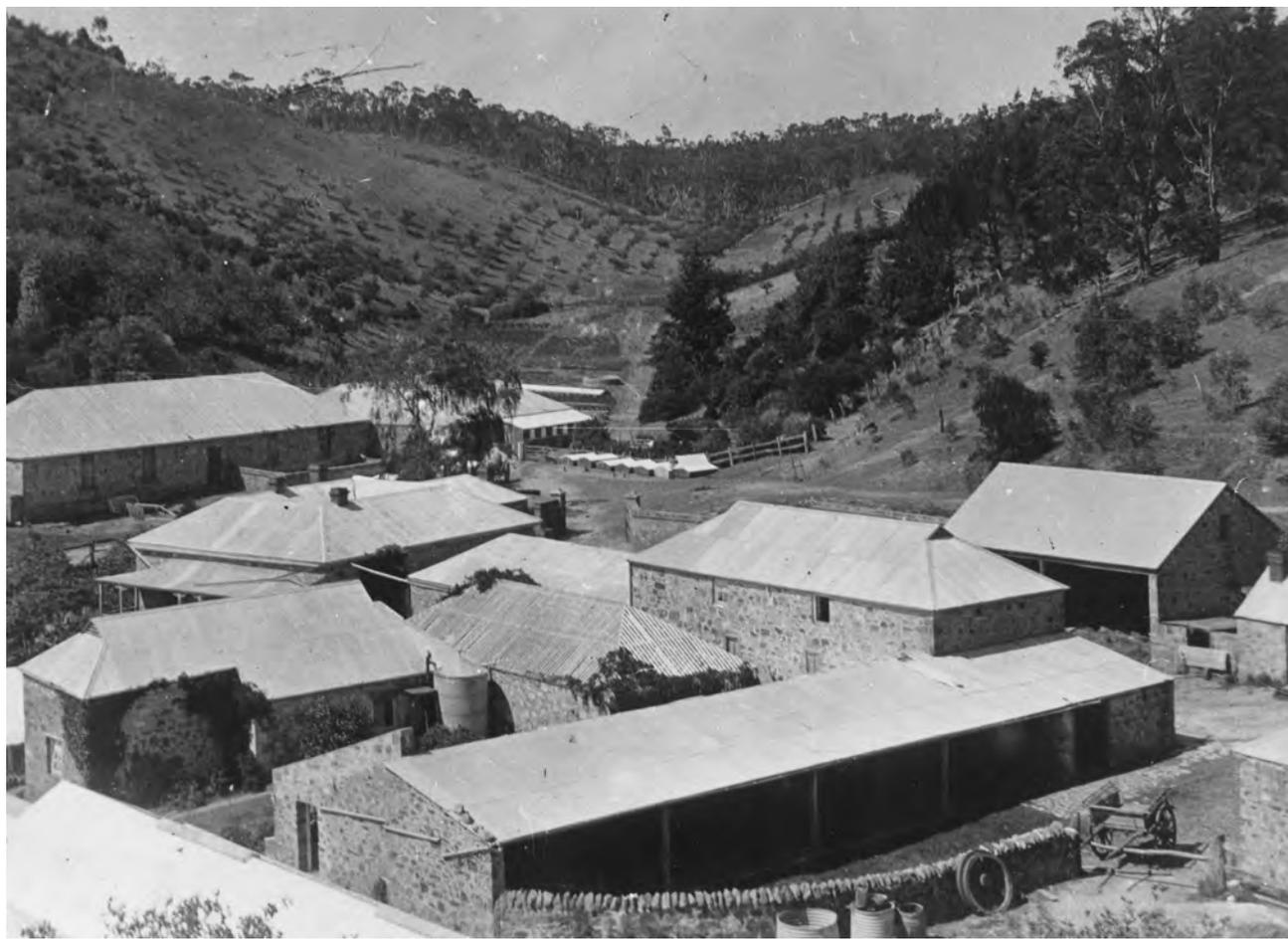


Fig. 1. Newman's nursery complex and homestead in 1890, looking north-east up Water Gully. (Photograph reproduced with the permission of the State Library of South Australia).

It might also be a guide to assessing, which species have shown no sign of spreading during this period, despite the Ash Wednesday fire of 1983, and hence might be considered as 'heritage plants' to be left as an example of what once was grown at this now Heritage listed site.

History

Charles Frederick Newman, born Carl Friedrich Neumann, bought 68 acres of land in the District Council of Highercombe in the late 1840s. The property in heavily timbered hills was named "Water Gully" after the large number of springs. Newman initially cleared this 68 acres which was laid out as house and garden, orchard, nursery and market garden (Burgess 1909).

Terraced hillsides and stone water races constructed along the Water Gully creekline are still in existence (Smith et al. 2005). Stone rainwater tanks inside the shade houses helped in water management. A boiler room with two furnaces provided hot water piped to maintain plants such as over 300 varieties of orchid, in the hot houses (Middlemis 2003).

By 1856 the property was already operating as a nursery and orchard. Later additions increased its size to almost 500 acres. An 1860 woodcut print of the "Water Gully" site, used on the cover of the original catalogue depicts hot houses already well-established.

The range of plants stocked was extensive, with comprehensive catalogues being issued. The property became a 'showpiece' of the colony and by 1875 became known as the 'Model Nursery', operated by C.F. Newman & Son (Swinbourne 1982).

By the 1880s the nursery had grown to include 12 glass and hothouses and three extensive stone-walled shadehouses (Fig. 1). There were 90 acres of fruit trees producing mainly apples, pears, plums and cherries, as well as providing nursery stock. Other stock included hardy outdoor plants, tropical species and rare exotics, shrubs, trees, palms, ferns, ornamental grasses, bulbs, vegetables and herbs. In 1892 a retail outlet for the nursery was opened in Rundle Street selling seeds, cut flowers and floral displays, as well as offering horticultural services (Swinbourne 1982).

Towards the end of the century substantial annual catalogues were issued (Swinbourne 1982). These are now rare. The 1894–5 Catalogue comprised almost 200 pages with colour illustrations, including descriptions of many rare and unusual plants, an impressive production for the time. Several Australian plants such as Sturt's Desert Pea, *Swainsona formosa* (G. Don.) Joy Thomps., were listed, together with an imported German collection of seed and live plants.



Fig. 2. Ruins of Newman's nursery and homestead in 2005, looking north-east from above the quarry up Water Gully. (Photograph by R.L. Taplin).

After the death of C.F. Newman in 1899, his widow and a son, F.C. Newman continued to manage the business. Following a storm in 1913, the glasshouses and stock sustained irreparable damage from hail. A further storm and flooding caused almost total destruction. This was followed by a drought. After struggling to rebuild the nursery, F.C. Newman and his wife left in 1925 to establish a new nursery at Tea Tree Gully.

Stock of the camellias and persimmon was taken to the present nursery (J. Hall, pers. comm., from his grandmother's memories) and are still grown there today. His descendants carry on the business at this site. Another son helped his mother to manage the remains of the former nursery until 1932, when she died and the property was sold. The name C.F. Newman & Son was then transferred to the present site, which now specialises in camellias.

Following its sale 'Water Gully' was operated as a dairying and grazing property and then used for sheep grazing. The seventy-year old conifers that lined the track from Anstey Hill Road (now Lower North East Road) to the homestead were cut down for packing cases (Brittle et al. 1990). The hillside behind the buildings was quarried for roadworks. By the 1940s the original nursery site was abandoned and natural

vegetation resumed growth amongst the gardens. Photographs taken in 1963 show large camellia bushes still flowering, tall Blue Cedar, Norfolk Island Pines and other large conifers, a 10 m high palm (no longer present), magnolias, fruit trees and beds of snowflakes, jonquils and daffodils (Brittle et al. 1990).

Twenty years later, the entire site was burnt in the Ash Wednesday bushfire of 1983. Many exotic species were destroyed. Many have responded to fire by producing multiple trunks from burnt bases, with the original trunks still visible. Others have suckered or produced seedlings, spreading from the original planted trees into bushland.

After being partly protected within Engineering & Water Supply land and listed as an historic site on the South Australian State Heritage Register, the "Water Gully" site became part of Anstey Hill Recreation Park in 1989. Walls of the house and out buildings with ruins of the shade and hothouses and wells can still be seen at the "Water Gully" site, as well as regrowth of numerous exotic species (Fig. 2).

Current Management

The National Parks staff who are responsible for managing the site, in the past, have regarded the exotic

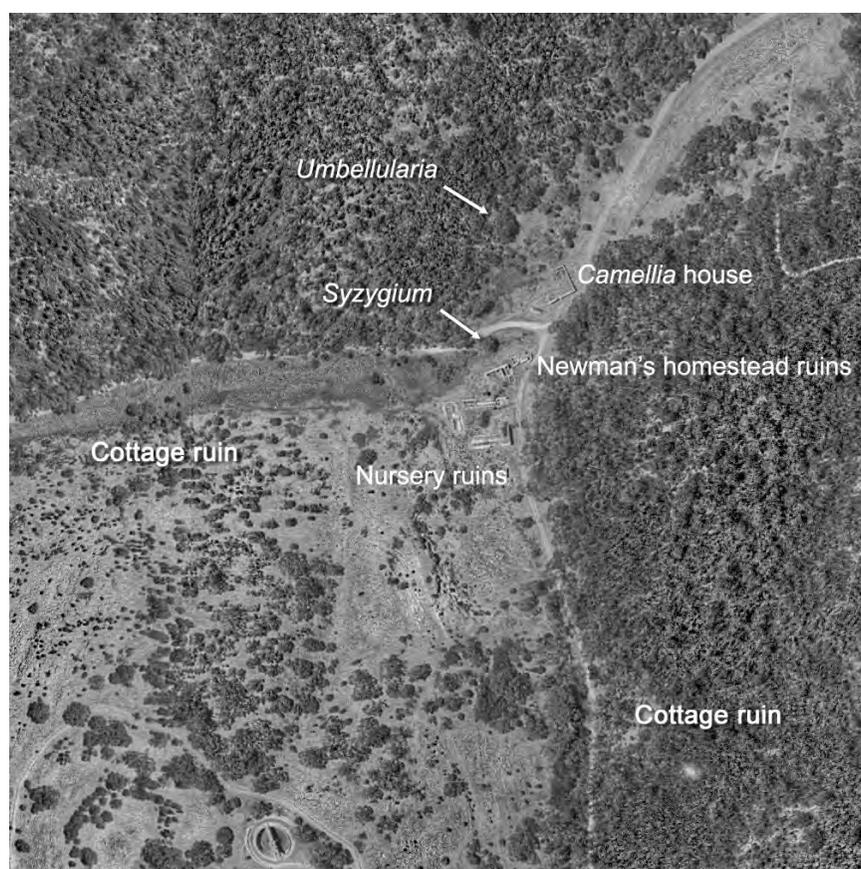


Fig. 3. Photograph of the site of the former Newman's Nursery at Anstey Hill Recreation Park, Adelaide. (Aerial photography courtesy of Mapland, Department for Environment and Heritage, S.A.).

plants at the former nursery as 'weeds'. The Draft Management Plan (DEH 2006) now states that "the ruins and exotic plantings of the Newman's Nursery will be managed to conserve historic values and provide visitors with appropriate access and interpretive information. Exotic plant species associated with the historic nursery will be monitored and steps taken to prevent their spread from this Heritage Site." The management strategy is to "Conserve introduced plants of heritage significance within the Newman's Nursery Heritage Site, and control those introduced plants that threaten the integrity of the site and those that escape from the site."

Many of the naturalised species, such as *Ailanthus altissima*, *Robinia pseudoacacia* and *Ulmus* spp. on the hillsides, as well as *Wigandia urens* var. *caracasana*, *Aloe* spp. and *Vinca major* around the ruins have indeed become problems and need to be controlled.

In the 1980s a program of spraying and bull-dozing species of *Ailanthus*, *Robinia* and *Ulmus* initially resulted in substantial reduction in numbers, but not in eradication of these species. They have again produced hundreds of saplings to 2–4 m high, despite intermittent cutting and swabbing treatment by the 'Friends of Parks' group. Contractors cut down non-suckering trees, such as *Aesculus hippocastanum* and *Hymenoporus flavum*, which enabled rapidly spreading bulbs (e.g. *Amaryllis*

belladonna, *Narcissus* spp. and *Allium ampeloprasum*) to cover the bare hillside.

Following a report to the Department of Environment and Heritage (DEH) of the recent spread of *Noltea africana* in W.A. (D. Bickerton, pers. comm.), spraying of this species was carried out in the creekline upstream from the ruins. (The W.A. plants were reported as growing vigorously and spreading along a creek in a reserve near Darlington). Unfortunately, the contractor left hundreds of plants in the creekline upstream from the ruins and scattered trees downstream. This is particularly evident in permanently wet sections of the creek upstream from the cottage ruin. Thickets of up to 3 m across of 5m high plants still remain. Stands of hundreds of smaller plants are still present in the same creekline outside the nursery site, near the park's western boundary.

The Newman's Nursery site is listed in the South Australian State Heritage Register. "The *Development Act 1993* provides the legislative control for future activities that affect the context of the place" (DEH 2006).

The status of 'protected' as a heritage site applies only to the ruins of the buildings rather than to the nursery site and the old gardens (State Heritage Register Office, pers. comm.). It appears from the above statement in the management plan that there is the ability to control activities detrimental to the site as well.

A 2005 study for the Hills Face Zone Cultural Heritage Project (Smith et al. 2005) concludes that "the statement of significance of the Newman's nursery site does not take into account Water Gully, the cultural landscape that was the nursery beyond the buildings". It states that "this valley has made a significant contribution to understanding colonial land use patterns and the technologies that European colonists brought to the Adelaide Hills. It has been identified as a rare example of a relict landscape."

Site observations

In the 1970s, R. Taplin first visited the site and observed the 4 m high camellias with red, white or pink flowers, as well as the 10 m high Blue Cedar and Norfolk Island Pine. There was prolific spread of bulb species such as snowflakes, jonquils and daffodils along the flattened valley floor of Water Gully.

Most of the large single trees were part of the extensive garden area shown in the 1860 photographs of "Water Gully" nursery and garden. More recent photographs of the nursery site taken in 1963 (Brittle et



Fig. 4. Ruins of stable and barn with a large stand of *Aloe arborescens*.

al. 1990) show that many of the original plants were still surviving until the 1983 fire.

The destruction of the camellias, Norfolk Island Pine, Blue Cedar & other conifers was observed on a 1983 visit following the Ash Wednesday bushfire. The Kauri Pine & oak survived the fire but bore large scars in the bark for the height of the trunk.

In 1987 R. Taplin accompanied M. Mulvaney, a Ph.D. student from the Australian National University, Canberra, to the site for his study of garden species, which are becoming bushland invaders (Mulvaney 1991). Many of the fire resistant species were resprouting from burnt bases. Others such as *Ailanthus altissima*, *Robinia pseudoacacia* and *Ulmus* spp. had suckered prolifically, spreading from the original planted trees to cover the hillside north and east of the ruins and into bushland. He noted the spread of *A. altissima*, already a serious environmental weed in eastern Australia.

Wigandia urens var. *caracasana* appeared to have spread from seed, as many plants are growing in the quarry wall. Some have since been removed in the clean-up of the site in preparation for the erection of Heritage site signage in late 2007, but many still remain.

Other plants such as *Agave americana* and *Chasmanthe floribunda* have spread vegetatively to increase their clump size, but have not spread beyond

their original location. Bulb species, particularly *Narcissus* spp. and *Arum italicum*, have spread clonally to cover a wide area, sometimes encroaching into bushland.

From 2005 to 2007 many more species became apparent when flowering in summer. By 2007, eighty-seven planted species have been recorded, nine of which have become extinct at the site through fire or removal (Table 1).

Of the species recorded, 36 have been observed to be naturalised at the site (Table 1). Of these, only three were not recorded as naturalised in Barker et al. (2005).

Buddleja dysophylla has spread from one plant in 1987 to a thicket measured at 25 m long by 3 m wide and extending up into gum trees. It had not been seen to produce flowers until 2005. *Prunus mahaleb* was already widespread and naturalised in 1987, but not recognised until fruit was seen and a collection made in 2005. *Corymbia ficifolia* had not previously been observed to naturalise but there are two trees 1.5 and 4 m high, away from the old parent clumps, so it would appear to be incipiently naturalising. Three younger saplings have since died in the 2007 drought. *Narcissus ×incomparabilis* is still restricted to a small number in a garden area but in a photograph taken 1963, 20 years before the Ash Wednesday fire (Brittle et al. 1990), large

Table 1. Newman's Nursery alien species listed in the *Census of South Australian Vascular Plants* (Barker et al. 2005). It is indicated, whether a taxon is naturalised (N) or naturalising (n) at the site. Species not extant at the nursery site in 2007 are listed as extinct (X).

Taxon	Status
<i>Acacia baileyana</i> F.Muell.	n
<i>Acacia podalyriifolia</i> A.Cunn. ex G.Don	X
<i>Aesculus hippocastanum</i> L.	
<i>Agapanthus praecox</i> subsp. <i>orientalis</i> (F.M. Leight.) F.M. Leight.	n
<i>Agave americana</i> L.	
<i>Ailanthus altissima</i> (Mill.) Swingle	N
<i>Allium ampeloprasum</i> L.	N
<i>Aloe arborescens</i> Mill.	N
<i>Aloe maculata</i> All.	N
<i>Amaryllis belladonna</i> L.	N
<i>Arbutus unedo</i> L.	
<i>Arum italicum</i> Mill.	N
<i>Asparagus officinalis</i> L.	
<i>Brachychiton populneus</i> (Schott & Endl.) R.Br. subsp. <i>populneus</i>	N
<i>Ceanothus thyrsiflorus</i> Eschsch.	
<i>Chamaerops humilis</i> L.	
<i>Chasmanthe floribunda</i> (Salisb.) N.E.Br.	n
<i>Crataegus azarolus</i> L.	N
<i>Crataegus monogyna</i> Jacq.	N
<i>Cydonia oblonga</i> Mill.	X
<i>Erica arborea</i> L.	N
<i>Ficus carica</i> L.	N
<i>Hedera helix</i> L. subsp. <i>helix</i>	X
<i>Hypericum calycinum</i> L.	N
<i>Ilex aquifolium</i> L.	
<i>Leucosium aestivum</i> L.	N
<i>Malus pumila</i> Mill.	N
<i>Myrtus communis</i> L.	N
<i>Narcissus pseudonarcissus</i> L.	N
<i>Narcissus tazetta</i> L.	N
<i>Nerium oleander</i> L.	
<i>Noltea africana</i> (L.) Endl.	N
<i>Pandorea pandorana</i> (Andrews) Steenis subsp. <i>pandorana</i>	
<i>Polygala myrtifolia</i> L.	N
<i>Populus nigra</i> L.	X
<i>Prunus cerasifera</i> Ehrh.	N
<i>Prunus domestica</i> L. subsp. <i>domestica</i>	
<i>Prunus dulcis</i> (Mill.) D.A.Webb	
<i>Punica granatum</i> L.	
<i>Quercus robur</i> L.	
<i>Rhamnus alaternus</i> L.	N
<i>Robinia pseudoacacia</i> L.	N
<i>Ulmus procera</i> Salisb.	N
<i>Ulmus x hollandica</i> Mill.	N
<i>Viburnum tinus</i> L.	
<i>Vinca major</i> L.	N
<i>Viola odorata</i> L.	N
<i>Wigandia urens</i> var. <i>caracasana</i> (Kunth) D.N.Gibson	N
Extinct species	4
Number of naturalised species	27
Number of naturalising species	3
Total number of species	48

colonies were covering the valley floor in the area of the former bulb beds.

Of the 48 plants at the site recorded as already naturalised in S.A. (Barker et al. 2005), 10 have not naturalised at the nursery site (Table 1). Some of the records in the S.A. Census are of single persisting old plants, rather than truly naturalised species.

Nine species have died or been removed since 1987 and no seedlings were found at their former locations. Six of these were single plants; three of the trees *Agathis robusta*, *Araucaria heterophylla* and *Cedrus atlantica* were destroyed in the 1983 fire, and three shrubs *Cydonia oblonga*, *Lagerstroemia indica* and *Citharexylum spinosum* have died or been removed since 1987. *Populus nigra*, *Acacia podalyriifolia* and *Hedera helix* subsp. *helix* have been removed.

Comments on the List of Species collected from the Site

The following section contains a list of 87 horticultural species recorded at the former nursery site, with a brief description and country of origin given, as well as their current state and location within the site. These records are based on collections for the State Herbarium of South Australia (AD) of remnant exotics from the former garden and nursery site by R. Taplin since 1987. From July 2005 to 2007 many more species were photographed and collections made, with GPS locations recorded. All of the species described here have regrown since the 1983 fire, which may have caused some to spread. Species observed to have regrown with multiple trunks from burnt bases were photographed and recorded.

Specimens of most species described were deposited at AD, with collection numbers of R.L.Taplin given. Nine were unable to be collected for reasons stated in the notes. Five of these are presumed extinct.

Few other collectors have deposited material at AD from planted species at the nursery site. The name and collection number of those who have are cited. Nine species seen or collected previously but not extant at the site in 2007 are listed as 'presumed extinct', as no seedlings have appeared in the 25 years since the fire.

Species were identified by referring to relevant State and overseas floras and other publications listed in the references. Descriptions of exotic taxa and region of origin were from *Flora Europaea*, *Flora of Southern Africa*, *Flora of North America*, *Flora of Japan*, *Flora of China* and other publications given in the references.

The naturalised status of each species in S.A. and elsewhere in Australia was determined by referring to State and interstate censuses (Barker et al 2005; Bostock & Holland 2007; Buchanan 2007; Western Australian Herbarium 1998–; Kerrigan & Albrecht 2007; National Herbarium of N.S.W. 1999–; Walsh & Stajsic 2007) and Australia's Virtual Herbarium (CHAH 2007). For the 48 taxa already listed as naturalised in S.A., nomenclature and authorship follows the current Census of the state (Barker et al. 2005). Common names are those used in

eFloraSA (State Herbarium of S.A. 2007) or in relevant publications.

The names of 39 additional species were determined using State and overseas floras and other publications. The International Plant Name Index (Plant Name Project 2008) and Australian Plant Census (CHAH 2005–) were used to determine currently accepted names, authorities and native range of taxa. Author citation follows Brummitt & Powell (1992). The above listed censuses were also consulted to determine the status of taxa listed as naturalised in other states.

At the site, species were considered by R. Taplin to be naturalised, if a self-sustaining population is persisting or spreading vegetatively, or sexually away from the original source.

The spread of *Wigandia urens* var. *caracasana*, *Noltea africana* and *Ailanthus altissima* was recorded with a GPS, taking sighting points of the boundaries of the populations, as well as of outlying plants. The coordinates were plotted onto an aerial photo of the site (provided by Mapland, DEH). Fig. 8 and 15 illustrate this for *N. africana* and *W. urens* var. *caracasana*, respectively.

Kloot's (1986) study of the date of first introduction into South Australia of species now naturalised was consulted. Thirty-two plants were listed by Kloot as early introductions. The date from Kloot is given for each of these species.

D. Symon made a detailed examination of the only remaining Newman's Nursery catalogue, now held in the South Australia Collection of the Mortlock Library (Newman 1894–1895), in order to determine which species still present were stocked at that time. This is referred to as 'the Catalogue'. All but 25 of these species were listed in the 1894–1895 Catalogue. All species commented on below are listed in the Catalogue except for the 25 species with the comment 'Not listed in the 1894–5 Catalogue.' Some species were listed under former names and others may have been included amongst the numerous cultivars. The nursery continued for almost 40 years after this Catalogue was produced, allowing plenty of time for more species to be added to the stock as well as to the gardens. Each species listed contains some comments on its use as a garden plant.

List of species remaining at the site of Newman's Nursery

Acacia baileyana F.Muell. LEGUMINOSAE Cootamundra Wattle

DESCRIPTION: Small tree to 6 m high.

REGION OF ORIGIN: Cootamundra area, N.S.W.

FIRST RECORD: Kloot (1986) gives 1893 as the date of first introduction in SA. Earliest records in the State Herbarium of South Australia (AD) are from Tepper in 1895.

NOTES: In 2006 three small trees were growing beneath the oak tree, in the former garden area east of Newman's homestead. In 1987 the original trees that had been burnt in 1983 had produced 25 saplings 2 m high. These must have died or been

removed, since only three remained in 2006. They have not spread at the site but have the potential to do so.

Not listed in Newman's 1894–1895 Catalogue, but highly likely to have been grown in the garden, since it is one of the most popular cultivated wattles.

STATUS: Naturalised in all states of Australia except N.T.

VOUCHER: *R.L.Taplin 20* (AD).

Acacia podalyriifolia A.Cunn. ex G.Don Mount Morgan Wattle LEGUMINOSAE

DESCRIPTION: small tree to 5 m high.

REGION OF ORIGIN: Qld and northern N.S.W.

FIRST RECORD: Not mentioned in Kloot (1986). Plants naturalising at the site of AD collections in 1987 have since died or been removed. The next record is in 1995 from Morialta Conservation Park, where they may also have been removed.

NOTES: This was collected in 1987 when M. Mulvaney visited the site with R. Taplin to record bushland invasive species. It was growing at the upper edge of the eastern garden area that had been burnt in 1983. Fifty saplings up to 2.5 m high had grown in the ash bed and were spreading into bushland

Acacia paradoxa DC. and eucalypts have now overgrown this area and no saplings were present in 2006. They may have been removed. It is presumed extinct at the site as no seedlings have appeared during the 20 year period of observation.

Not listed in Newman's 1894–1895 Catalogue, but one of the most popular cultivated wattles and probably part of the garden.

STATUS: Naturalised in S.A. and in all other states except N.T., elsewhere in N.S.W., listed as incipiently naturalised in Vic.

VOUCHER: *R.L.Taplin 21, M.Mulvaney 68* (AD).

Acca sellowiana (O.Berg.) Burret MYRTACEAE Pineapple Guava

DESCRIPTION: Shrub to 2 m high.

REGION OF ORIGIN: Brazil.

NOTES: One 4 m wide, multi-trunked shrub is growing next to *Cussonia spicata* and *Chaenomeles japonica*, near the lilac-flowered *Magnolia ×soulangea*, in a former garden west of the ruins. These shrubs can be seen in a 1963 photograph (Brittle et al. 1990) and have regrown since the 1983 fire. It has not spread at the site but may have increased in size.

Not listed in Newman's 1894–1895 Catalogue but likely to have been nursery stock and part of the gardens.

An evergreen, spreading shrub grown for its bicoloured flowers and aromatic green fruit.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1092* (AD).

Aesculus hippocastanum L. HIPPOCASTANACEAE Common Horse-chestnut

DESCRIPTION: Tree to 25 m high.

REGION OF ORIGIN: Eastern Europe.

FIRST RECORD: In 1987 M. Mulvaney recorded 20 saplings, 4 m high, spreading from parent plants along a roadside in Belair National Park.

NOTES: A collection was made from one plant in the former garden area north of the ruins in 1989, from regrowth following the 1983 fire. The trees were cut down by contractors in the 1990s, but in 2006 four plants were re-shooting from bases, to form 1.5 to 2 m high and wide bushy shrubs.

It has not spread from the original plants.

This large deciduous tree is widely grown in cool temperate regions.

Not listed in the Catalogue but grown as part of the extensive display gardens.

STATUS: Not recorded as naturalised in Australia but listed in Barker et al. (2005) as doubtfully naturalised, as a result of the record from M. Mulvaney in 1987.

VOUCHER: *R.L.Taplin 158, 1104* (AD).

Agapanthus praecox* Willd. subsp. *orientalis
(F.M.Leight.) F.M.Leight. LILIACEAE

Agapanthus

DESCRIPTION: Herb with inflorescence spikes to 1.5m high.

REGION OF ORIGIN: Native of South Africa (Cape Province, Natal).

FIRST RECORD: Kloot (1986) gives the earliest date in S.A. as 1845, under an earlier name, *A. africanus* (L.) Hoffmans.

NOTES: Three small clumps are established or persisting amongst large clumps of *Agave americana* and *Aloe* spp. near an old stone retaining wall behind the former homestead. Several plants are growing amongst *Amaryllis* and *Hypericum calycinum* on the northern hillside in a former garden area behind the ruins of the dairy. These may have died in the 2007 drought.

It has not spread beyond this localised area and is not spreading into surrounding bushland, but may have the potential to do so.

Widely grown in domestic and park gardens. This has been observed as becoming an invasive garden species in moist areas of the Adelaide Hills, with a few reports of populations in bushland (P. Tucker, pers. comm.).

STATUS: Naturalised in W.A., Qld, N.S.W., Vic., Tas. and questionably established in S.A.

VOUCHER: *R.L.Taplin 1107* (AD).

***Agathis robusta* (C.Moore ex F.Muell.) F.M.Bailey**
Kauri Pine ARAUCARIACEAE

DESCRIPTION: Tree to 20 m high.

REGION OF ORIGIN: NE Qld, New Guinea and New Zealand.

NOTES: One 20 m high tree of this dry rainforest species was growing above a gully on the hillside east of the homestead. This area is shown in old photographs from around 1880s, as an open lawn area with scattered conifers. It survived the 1983 Ash Wednesday bushfire, but almost all of its bark was burnt except for a narrow strip and it later died or was cut down. It was identified by Herbarium staff from a fallen branch segment.

It is presumed extinct, as no seedlings have appeared in the 25 years since the fire.

Not listed in Newman's 1894–1895 Catalogue, but numerous exotic conifers are shown in the 1860 woodcut used to illustrate the cover of the original catalogue of plants.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: No voucher specimen was collected, as the tree was too high in 1987 and has since died.

***Agave americana* L.**
Century Plant AGAVACEAE

DESCRIPTION: Succulent plant with spined leaves to 2 m producing inflorescence spikes to 9 m high.

REGION OF ORIGIN: Mexico.

FIRST RECORD: First introduced into S.A. in 1840 (Kloot 1986).

NOTES: A large patch of both green and variegated forms is still growing in front of an old retaining wall next to the former buggy shed. A tall flower spike was produced in 2006. *Aloe* spp. and *Agapanthus praecox* subsp. *orientalis* are growing amongst it.

Often cultivated, with many long lasting relic populations, due to its suckering habit.

The large patch has probably increased in size but has not spread outside of a small localised area.

Not listed in Newman's 1894–1895 Catalogue, but part of the garden in front of the retaining wall.

STATUS: Naturalised in S.A., Qld, N.S.W., Vic.

VOUCHER: *R.L.Taplin 1105, 1120* (AD).

***Ailanthus altissima* (Mill.) Swingle**
Tree of Heaven SIMAROUBACEAE

DESCRIPTION: Tree to 20 m high.

REGION OF ORIGIN: China.

FIRST RECORD: First introduced into S.A. in 1856. (Kloot 1986).

NOTES: Hundreds of suckers from two mature trees burnt on Ash Wednesday 1983 are covering the hillside in the former garden area north of ruins. They are growing with suckering and seeding *Robinia* and amongst *Hypericum calycinum*, *Allium ampeloprasum* and *Amaryllis belladonna*.

On his 1987 collecting trip to the site, M. Mulvaney mentioned that this species has become a serious environmental weed covering extensive areas in N.S.W.

Despite extensive bull-dozing, cutting and spraying over many years, hundreds of plants, some now 4 m high are still spreading into surrounding bush. The boundaries were plotted at 180 m from east to west, with scattered plants extending for 125 m north to the brow of the hill in bushland.

It is well established at the site but to date none of the next generation has produced seed. It is the most invasive of planted species at the site.

A long-leaved deciduous tree, less popular now due to its aggressive suckering habit. Many colonies of suckers persist and spread, as these have since the 1983 fire.

STATUS: Naturalised in W.A., S.A., Qld, N.S.W., Vic.

VOUCHER: *R.L.Taplin 7, M.Mulvaney 72, E.F.Boehm 601* (AD).

***Allium ampeloprasum* L.**
Wild Leek LILIACEAE

DESCRIPTION: Herb to 1.5 m high.

REGION OF ORIGIN: Africa.

FIRST RECORD: Kloot (1986) gives 1858 as the date of first introduction in S.A.

NOTES: Now spread over the hillside in a former garden area north of the ruins and downstream along the permanently wet Water Gully creekline for 100 m.

It is now well established at this site, but has not spread elsewhere in the park.

The ancestor of the garden leek. Many small populations exist in the Adelaide Hills, often as remnants of early gardens.

Not listed in the Catalogue but part of the garden.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 12* (AD)

***Aloe arborescens* Mill.**
Tree Aloe LILIACEAE

DESCRIPTION: Succulent bush or small tree to 4 m high bearing long inflorescence spikes (Fig. 4).

REGION OF ORIGIN: South Africa.

FIRST RECORD: Kloot (1986) gives 1858 as the date of first introduction in S.A.

NOTES: Large plants with orange flowers grow amongst *Agave* spp. and *Agapanthus praecox* subsp. *orientalis*. An extensive clump is growing near the ruins of the stables. It was also seen in the creekline upstream near the cottage ruin. Hundreds

of plants are spreading up the hillside above the *Cussonia spicata* tree, west of the nursery ruins, evidence of its ability to naturalise.

Not listed in Newman's 1894–1895 Catalogue, but likely to have been cultivated.

Often grown in drier gardens, where old plantings persist and increase in area of cover.

STATUS: Naturalised in S.A., Qld, N.S.W. and listed as incipiently naturalised in Vic.

VOUCHER: *R.L.Taplin 1138* (AD).

***Aloe maculata* All.**

LILIACEAE

Broad-leaf Aloe

DESCRIPTION: Succulent 0.2 to 0.5 m high.

REGION OF ORIGIN: South Africa.

FIRST RECORD: Kloot (1986) gives 1842 as the date of first introduction in S.A.

NOTES: Small plants of both green and variegated forms are growing amongst larger *Aloe arborescens* and *Agave americana* in front of an old stone retaining wall behind the homestead ruins. More plants are spreading beside the ruins amongst *Vinca major*, as well as upstream in the creekline. Those upstream may be from a former cottage nearby.

Not listed in Newman's 1894–1895 Catalogue but likely to have been cultivated.

Often grown in drier gardens and old plantings persist and increase in area.

STATUS: Naturalised in S.A., Qld, N.S.W., Vic.

VOUCHER: *R.L.Taplin 1044, 1121, 1147* (AD).

***Amaryllis belladonna* L.**

AMARYLLIDACEAE

Belladonna Lily

DESCRIPTION: Bulb producing flower stalks 0.5 to 0.9 m high.

REGION OF ORIGIN: South Africa.

FIRST RECORD: Kloot (1986) gives 1842 as the date of first introduction in S.A.

NOTES: This widespread lily is covering the hillslope north of the ruins amongst *Hypericum calycinum* and growing with *Allium ampeloprasum* and extending up the hill into bushland. To the east, scattered patches occur with *Arum italicum* under *Quercus robur*, in a former garden area, as well as on the hillside adjoining the valley floor. Numerous colour forms of *Amaryllis belladonna*, including white flowers are present.

It is well established at the site.

Not listed in the Catalogue but obviously grown in the gardens.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic.

VOUCHER: *R.L.Taplin 1106* (AD).

***Araucaria heterophylla* (Salisb.) Franco**

Norfolk Island Pine

ARAUCARIACEAE

DESCRIPTION: Tree to 60 m high.

REGION OF ORIGIN: Norfolk Island.

NOTES: This tree persisted in the same location north of the house, where it was seen by R. Taplin until the fire in 1983, when the burnt tree was cut down. It can be seen in 1963 photographs of the exotic plants amongst the ruins (Brittle et al. 1990). The fire-scarred cut trunk is still present, lying on the ground next to the shade-house ruin.

It is presumed extinct at the site as no seedlings have appeared in the 25 years since the fire.

The cut, burnt trunk of a nearby conifer shows tree rings indicating it to have been around 100 years old.

Not listed in Newman's 1894–1895 Catalogue, but exotic conifers are shown in the same location in an 1860 woodcut,

as well as in photographs of Newman's Nursery and garden from the 1880s and 1963.

This species is widely cultivated, especially near the coast.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: No voucher collection was made, as the tree was burnt in 1983 and then was cut down due to its unstable condition.

***Arbutus unedo* L.**

ERICACEAE

Strawberry Tree

DESCRIPTION: Tree to 12 m high.

REGION OF ORIGIN: Native of Southern Europe, Ireland, Turkey and northern Africa.

FIRST RECORD: Kloot (1986) gives 1871 as the date of first introduction in SA.

NOTES: Two large multi-trunked trees have regrown from burnt trunks, in the former garden area east of the ruins. Another large tree has several trunks growing from around the margin of a large burnt stump on a south facing hillside north of the ruins. It is near *Umbellularia californica*, *Backhousia myrtifolia* and *Ilex aquifolium*, all regrowth with numerous trunks from burnt bases.

It has not spread at the site and no seedlings have been seen.

This popular garden tree often forms a large lignotuber, an adaptation to fire (Blood 2001).

STATUS: Naturalised in N.S.W., Vic., sparingly naturalised in the Adelaide Hills, S.A., doubtfully naturalised in Qld.

VOUCHER: *R.L.Taplin 18, 820* (AD).

***Arum italicum* Mill.**

ARACEAE

Italian Arum

DESCRIPTION: Herb bearing inflorescence spike to 0.25 m high.

REGION OF ORIGIN: Europe to southern England.

FIRST RECORD: Kloot (1986) gives 1858 as the date of first introduction in S.A.

NOTES: Growing under *Quercus robur* east of the homestead, west of the ruins under *Cussonia spicata*, adjacent the ruins amongst *Vinca major*, but also spreading along the creek upstream to the south. It may also have been growing near the former cottage upstream, to spread downstream along the creekline.

This is a potential environmental weed, spread over a wide area of the nursery site, but confined to this area.

Not listed in Newman's 1894–1895 Catalogue but a likely nursery and garden plant.

It is a tuberous rooted herbaceous perennial, sometimes persisting in old gardens in South Australia.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic.

VOUCHER: *R.L.Taplin 1146* (AD).

***Asparagus officinalis* L.**

LILIACEAE

Asparagus

DESCRIPTION: Herb to .5 m high.

REGION OF ORIGIN: Europe to Ireland and Denmark.

FIRST RECORD: Not recorded by Kloot (1986), but AD herbarium records are from early 1960s.

NOTES: One clump was growing in the former *Camellia* shade-house among other weed species. It was probably adventive, has since been removed and has not re-appeared.

A long-lived, tough, dioecious herbaceous perennial, widely grown in domestic gardens and commercial plantations. Already extensively naturalised along the River Murray banks near Renmark in S.A. but more often in irrigated landscapes and orchard sites.

Not listed in the Catalogue but may have been grown in the gardens near where it appeared.

STATUS: Naturalised in W.A., S.A., Qld, N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1115* (AD).

***Backhousia myrtifolia* Hook. & Harv. MYRTACEAE**
Scrub Myrtle

DESCRIPTION: Tall shrub or tree to 6 m high.

REGION OF ORIGIN: Qld and N.S.W.

NOTES: Six multi-trunked small trees to 6 m high, with green-yellow flowers are growing from burnt bases behind the large *Umbellularia*, in the former garden area north of the homestead.

It has not spread from this clump.

Useful for small timber, however usually grown for its white flowers and its strongly aromatic leaves

Not listed in the Catalogue, but part of the garden.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L. Taplin 1097* (AD).

***Brachychiton discolor* F. Muell. STERCULIACEAE**
Pink Flame Tree

DESCRIPTION: Tree to 15 m high.

REGION OF ORIGIN: Qld and N.S.W.

NOTES: A single-trunked tree 6 m high is growing next to the track, just south of the ruins. It survived the 1983 fire but bears scorches on the undersides of the branches. It flowered prolifically with large, bright-pink, hairy bell-flowers borne on bare branches in summer.

It has not naturalised at this site.

Not listed in Newman's 1894–1895 Catalogue, but possibly included as *Sterculia*.

STATUS: Not recorded as naturalised in Australia but widely planted as an ornamental tree.

VOUCHER: *R.L. Taplin 1084* (AD)

***Brachychiton populneus* (Schott & Endl.) R.Br. STERCULIACEAE**
subsp. *populneus*
Kurrajong

DESCRIPTION: Tree to 10 m high (Fig. 5).

REGION OF ORIGIN: Qld, N.S.W. and Vic.

NOTES: One spreading tree to about 12 m high is growing at the top of the track, nearly 1 km south of the ruins. This is near the entrance from the former Anstey Hill Road and probably formed part of the avenue of trees lining the driveway to the homestead. It produced white flowers in summer. There are two saplings, 2 and 4 m high, nearby. Another two saplings, 4 m high, are growing 500 m east amongst eucalypts in bushland, evidence that it has begun to naturalise at this site since the 1983 fire. (The bush was burnt to the ground in the Ash Wednesday fire).

It is incipiently naturalising at the site.

Not listed in Newman's 1894–1895 Catalogue, but possibly included as *Sterculia*.

Extensively planted in South Australian country areas and also used as a street tree.

STATUS: Sparingly naturalised in W.A. and S.A. and outside its native range in Vic.

VOUCHER: *R.L. Taplin 1058, 1079, R.J. Bates 37245* (AD).

***Brachychiton populneus* × *acerifolius* STERCULIACEAE**
Kurrajong hybrid

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Qld, N.S.W. and Vic.



Fig. 5. *Brachychiton populneus*, flowers.

NOTES: In 1987 this was a tree 8 m high, with a trunk circumference of 2 m was recorded and specimens collected. It is now an erect tree to 15 m high, with a trunk circumference measured at 3.5 m. It has lobed leaves and small, smooth, pink bell-flowers. It is growing just north of *Brachychiton populneus*. The undersides of all of the branches were scorched in the 1983 fire and are now rotting.

It has not spread at this site.

Not listed in Newman's 1894–1895 Catalogue, but possibly included as *Sterculia*.

Various forms of this hybrid are grown as ornamental trees. It is not true from seed and best forms are grafted.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L. Taplin 1, 1050* (AD)

***Buddleja dysophylla* (Benth.) Radk. BUDDLEJACEAE**
Buddleja; White Climbing Sage

DESCRIPTION: Shrubby climber 1.5 to 7 m high.

REGION OF ORIGIN: Southern Africa to Tanzania.

NOTES: This shrub has spread from one plant seen in 1987 to a large thicket extending for 25 m and climbing 3 m up trees. It is growing in a former garden area where Crepe Myrtle grew in 1987, but this has since died or been smothered by *Buddleja dysophylla*. *Hypericum* spp., *Arbutus unedo*, *Acacia baileyana*, *Myrtus communis* and *Syzygium australe* are also growing amongst *B. dysophylla*. Another patch extends for approximately 10 m on a roadside near gate 13, 1 km south. This was the former entrance to the Newman property so it may have been planted there.

This species is definitely naturalising at the site and is now being sprayed for control.

Not listed in Newman's 1894–1895 Catalogue, but three other species of *Buddleja* were listed.

This scrambling white-flowered shrub is not commonly grown.

STATUS: It is not listed in Barker et al. (2005) as naturalised in SA.

STATUS: Naturalised in W.A., N.S.W. Vic. and now in S.A.

VOUCHER: *R.L. Taplin 1063* (AD).

Callistemon sp.

MYRTACEAE

Bottlebrush

DESCRIPTION: Shrub to 2 m high.

REGION OF ORIGIN: Australia (? hybrid).

NOTES: Two 3 m high, multi-stemmed clumps of a crimson-flowered sharp leaved form are growing in a former garden area with other shrubs behind the *Buddleja dysophylla* thicket. Another 3 m plant was found uphill several metres away. The species was unable to be determined by Herbarium staff.

It has not spread at the garden site.

One species of *Callistemon* was listed in the 1894–1895 Catalogue.

Currently popular garden shrubs with many cultivars available.

VOUCHER: *R.L.Taplin 1096* (AD).

Camellia japonica L.

THEACEAE

Camellia

DESCRIPTION: Shrub or small tree to 4 m high.

REGION OF ORIGIN: Japan, SE Asia.

NOTES: In 1979, a row of 4 m high shrubs bearing pink, red or white flowers was growing inside the northern wall of the former shade-house. Colour photographs taken in 1963 show these camellias (Brittle et al. 1990). All were burnt in the 1983 fire and were apparently dead, but in July 2005, one trunk began to re-sprout from the rootstock. The regrowth is now approximately 1 m high. In 2006 and 2007 several white flowers were produced. In 1925, stock was taken from the old varieties of camellia to the current site of Newman's Nursery and is still grown (J. Hall, pers. comm.).

This species is listed in the Catalogue under numerous cultivar names.

An extremely popular garden shrub grown world-wide in cool temperate areas. Numerous cultivars are available, some of which produce seed.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: No voucher specimen was collected as the plant had only just re-sprouted, almost 25 years after the fire.

Ceanothus thyrsiflorus Eschsch.

RHAMNACEAE

California Lilac

DESCRIPTION: Shrub to 3 m high.

REGION OF ORIGIN: North America (California).

NOTES: Five multi-stemmed shrubs had grown to 2 m high from bases burnt in 1983. They were growing amongst and behind the *Buddleja dysophylla* patch in a former garden east of the homestead ruins. Following the 2007 drought, only one shrub remains.

It has not naturalised at this site.

A Californian shrub widely grown for its striking masses of small dark-blue flowers.

A single AD record exists of a 'possibly self-sown' plant, collected near old buildings at Wirrabara, S.A. in 1992. This is more likely to be persisting from an old planting, as at this site.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 19, 1085* (AD).

Cedrus atlantica (Endl.) G.Manetti ex Carriere

PINACEAE

Blue Atlas Cedar

DESCRIPTION: Tree to 40 m high.

REGION OF ORIGIN: North Africa.

NOTES: This large tree was part of the extensive garden area with Kauri and Norfolk Island Pines depicted in 1880 and 1963 photographs. It was seen in 1979, but was destroyed in

the 1983 fire. The burnt trunk, with long drooping branches is still standing in the garden east of the ruins, near another dead conifer.

No seedlings have appeared in the 25 years since the fire, so it is presumed extinct.

A cutting taken in 1925 from a lateral branch of this plant (J. Hall, pers. comm.) is growing as a large horizontal-branched tree in the present Newman's Nursery garden at Tea Tree Gully.

This large ornamental conifer is widely grown in temperate parks and gardens.

STATUS: Not recorded as naturalised in Australia

VOUCHER: No voucher specimen was collected as this tree was burnt before the study period but there is a photographic record from 1963 (Brittle et al. 1990).

Chaenomeles japonica (Thunb.) Lindl. ex Spach**Japonica**

ROSACEAE

DESCRIPTION: Shrub to 2 m high.

REGION OF ORIGIN: SE Asia.

NOTES: One 2 m high sprawling shrub became apparent amongst blackberries, when it flowered in summer. It is growing with multiple trunks from a burnt base, with *Cussonia spicata*, *Acca sellowiana* near *Magnolia ×soulangea* in a former garden area west of the ruins.

It has not spread at the site.

Now widely grown as a garden shrub. Its growth habit makes it likely to survive fire.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1091* (AD).

Chamaerops humilis L.

PALMAE

European Fan Palm

DESCRIPTION: Tree to 3 m high.

REGION OF ORIGIN: Europe.

NOTES: A sprawling clump 3 m by 5 m with two tall upright trunks is growing from burnt fallen trunks. A photograph taken in 1963 shows six tall burnt trunks. It is near a well in a former garden east of the homestead ruins.

It has not spread at the site.

This species grows well in the Adelaide area. A compact fan palm with trunk rarely more than 3 m high. Several stems sprout from the base to form clumps. Widely grown in temperate areas and not too large for domestic gardens.

A collection in 2000 from the Murray region of S.A. is described as a clump near ruins S of Dutton (*R.J.Bates 55957*, AD).

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1014* (AD).

Chasmanthe floribunda (Salisb.) N.E.Br.

IRIDACEAE

African Corn-flower

DESCRIPTION: Herb bearing inflorescence spike to 1.5 m high.

REGION OF ORIGIN: Africa.

FIRST RECORD: Kloot (1986) gives 1845 as the date of first introduction in SA.

NOTES: One 3 m wide patch bearing orange flowers has become established in *Hypericum calycinum* on the hillside in an old garden north of the ruins of the dairy. Another small clump is growing amongst *Agave* spp. in the former back garden, in front of an old stone retaining wall east of the house ruins.

It has not spread at the site, but may have increased in area covered.

It is widely, if sparingly established in SA.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1139, 1145* (AD).

***Citharexylum spinosum* L.
Fiddlewood**

VERBENACEAE

DESCRIPTION: Shrub to 6 m high or tree to 10 m.

REGION OF ORIGIN: Tropical America.

NOTES: This shrub survived the 1983 fire and a specimen was collected from a 1.5 m high plant in the garden area north of the ruins in 1989. It has since died or been removed in the attempted eradication of *Ailanthus altissima*.

No seedlings have appeared so it is presumed extinct at the site.

A large shrub to small tree widely grown in gardens for its colourful leaves.

STATUS: Naturalised in Qld.

VOUCHER: *R.L.Taplin 157* (AD).***Citrus sinensis* (L.) Osbeck
Orange**

RUTACEAE

DESCRIPTION: Tree to 3 m high.

REGION OF ORIGIN: SE Asia.

NOTES: Three small trees have regrown since the fire. They form part of a row with lemon trees along a stone wall above the Water Gully creekline, near a large fig tree and an old grape vine. They are probably part of the garden of a cottage, now a nearby ruin. The fruit was ripe in summer and sweet to taste.

The 'Water Gully' nursery orange orchard was in an area near the River Torrens over 1 km south, below the Lower North East Road. This area is now an extensive sand and gravel quarry.

Widely grown in orchards and gardens. Remnants of former orchards often persist near old buildings in S.A.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1110* (AD)***Citrus limon* (L.f.) Burm.f.
Lemon**

RUTACEAE

DESCRIPTION: Tree to 3 m high.

REGION OF ORIGIN: SE Asia.

NOTES: Four small trees are growing near the stone wall in the Water Gully creekline. Ripe fruit was produced in summer. A single tree is still producing fruit near a cottage ruin south of the former homestead. This was seen suckering in 1987, following the 1983 fire.

Bushy, often thorny tree widely grown in orchards and gardens.

Not known to be naturalised in SA.

STATUS: Naturalised in Qld, N.S.W..

VOUCHER: *R.L.Taplin 1109* (AD).***Corymbia ficifolia* (F.Muell.) K.D.Hill & L.A.S.Johnson
Red-flowering Gum**

MYRTACEAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: South western W.A.

NOTES: A row of 5 m high, sprawling trees bearing crimson flowers can still be seen lining an old track near the former garden area east of the nursery ruins. There are two young trees 1.5 and 4 m high nearby. Two young saplings nearby were seen in 2005–2006, but must have died in the 2007 drought. Another plant seen in the creek 500 m west has also died.

This suggests some tendency for it to become sparingly naturalised.

A showy tree with scarlet, crimson or pink flowers. This species is one of the earliest and most widely cultivated gum trees. It often forms a conspicuous lignotuber.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1095* (AD).***Crataegus azarolus* L.
Azarola Thorn**

ROSACEAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Eastern Mediterranean.

FIRST RECORD: Kloot (1986) lists *C. sinaica* Boiss. with first introduction in 1858.

NOTES: A single, 4 m high tree with large, yellow fruit is growing near the creekline south of the ruins. This mature tree may be adventive, as it is growing near an outlet to the Anstey Hill Filtration Plant. Another smaller shrub to 1.5 m high was found 300 m east, near the Mannum to Adelaide pipeline entrance to the park, indicating that it may be naturalising at the site.

AD herbarium records show that this decorative, edible species is now sparingly naturalised in higher rainfall areas in S.A.

This species is included as a synonym of *C. sinaica* in the list of Noxious weeds for Australia and specifically for S.A. and WA. (Australian Weeds Committee 2007)

STATUS: Naturalised in S.A.

VOUCHER: *R.L.Taplin 1099, 1158* (AD).***Crataegus monogyna* Jacq.
Hawthorn**

ROSACEAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Europe.

FIRST RECORD: Kloot (1986) gives 1845 as the date of first introduction in S.A.

NOTES: This Proclaimed Pest Plant is scattered mainly along creeklines and the hill above 'Water Gully', as well as in the former garden area near the oak. The original collection was made from a pink-flowered plant which is still growing behind the camellia shadehouse ruin.

This is a major weed in the Adelaide Hills area, particularly along creeklines and may be a later invasion at the nursery site.

It is well established throughout the park as well as at the site.

Not listed in Newman's 1894–1895 Catalogue, but could be among the three other *Crataegus* species listed.

STATUS: Naturalised in S.A., Qld, N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 9, 1148* (AD).***Cussonia spicata* Thunb.
Cabbage-tree**

ARALIACEAE

DESCRIPTION: Tree 3 to 10 m high.

REGION OF ORIGIN: Eastern South Africa.

NOTES: A single 5 m high tree has regrown in a garden area west of the ruins. The original fallen, burnt trunk can be seen at the base, with two trunks growing from it. The tree has not been seen to produce flowers or fruit. These trees produce massive, swollen, water-holding roots and are likely to survive fire. Rarely grown even now. In the U.S.A., it has been assessed as being at low risk of becoming a weed (U.S. Forest Service 2007).

It has not spread at the site in the 130 years before the 1983 fire nor in the 25 years since.

Not listed in Newman's 1894–1895 Catalogue but part of the garden.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1011* (AD).

***Cydonia oblonga* Mill.
Quince**

ROSACEAE

DESCRIPTION: tree to 4 m high.

REGION OF ORIGIN: Eastern Europe.

FIRST RECORD: Kloot (1986) lists 1837 as the date of first introduction in SA.

NOTES: A collection was made in 1987 from a group of several multi-trunked, 1 m high trees regrowing from burnt bases. They were near the old cottage ruin south of the nursery complex and have since died or been removed.

No other plants have grown so this species is presumed extinct at the site.

There is a remnant quince orchard, producing yellow fruit, in a damp gully near a ruin c. 1 km South of the Newman property, below the filtrations plant water tanks.

Quinces were part of the former orchards and are listed in the Catalogue. They were widely grown in old gardens. Although the trees sucker and form long-surviving clumps, they are doubtfully naturalised in S.A. The species is listed in the Barker et al. (2005), but records appear to be from single trees persisting near old buildings and on roadsides.

STATUS: Naturalised in S.A., Qld.

VOUCHER: *R.L.Taplin 5* (AD).***Diospyros kaki* Thunb.
Japanese Persimmon**

EBENACEAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Eastern Asia.

NOTES: One 4 m high tree and five smaller shrubs nearby still produce fruit. They are growing with multiple trunks from burnt bases behind *Sparmannia africana*, in the creek near the homestead ruins. Another multi-trunked tree and smaller shrub are growing downstream in the Water Gully creekline near a cottage ruin. The smaller plants may have spread from the two large trees, but they are localised near the adult plants.

In 1925 cuttings were taken to the current Newman's Nursery where this variety, 'Dai Dai Maru', is still sold (J. Hall, pers. comm.).

Not listed in Newman's 1894–1895 Catalogue, but growing in the garden alongside the house.

A deciduous tree with colourful autumn leaves and fruit, long cultivated in Asia and in Australian gardens.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1093, 1123* (AD).***Diospyros whyteana* (Hiern) F.White
African Snow-drop**

EBENACEAE

DESCRIPTION: Shrub to 2 m or rarely tree to 6 m high.

REGION OF ORIGIN: Native to south-eastern South Africa to Ethiopia.

NOTES: One tall multi-stemmed clump and one smaller clump of this shiny-leaved species, earlier known as *Royena lucida* L., are growing from a burnt base, in the former garden area east of the ruins. It has not spread at the site.

A shrub or small tree with dense, dark green, glossy leaves and an attractive red calyx below the fruit.

Not listed in Newman's 1894–1895 Catalogue.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 1012, 1090* (AD).***Erica arborea* L.
Tree Heath**

ERICACEAE

DESCRIPTION: Shrub to 3 m high.

REGION OF ORIGIN: Europe.

FIRST RECORD: Kloot (1986) gives 1871 as the date of first

introduction in S.A.

NOTES: In 1987 an extensive area along the Water Gully creekline and adjoining hillside was covered with this invasive species. This population has since been removed, but numerous plants still persist. It is growing at the nursery site on the hill north of the ruins and scattered amongst bushland, and also 1 km east and south in bushland throughout the park.

It is well established at the site and the seeds are viable in the soil for several years.

A shrub or small tree grown for its abundant white flowers. The woody nodules of the roots of this species were used to make briar pipes.

This species and *Erica lusitanica* Rudolphi are now well established in the Adelaide Hills.

STATUS: Naturalised in S.A., N.S.W., sparingly naturalised in Vic., Tas.

VOUCHER: *R.L.Taplin 10, 1015* (AD)***Erythrina variegata* L.
Coral Bean Tree**

LEGUMINOSAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: India.

NOTES: One straggly, thorny shrub became apparent when bright-red pea flowers appeared in summer amongst blackberries. It is growing near *Brachychiton discolor* and *Ilex auifolium*, just south of the old homestead ruin.

It has not spread at the site.

A large genus of shrubs or trees, sometimes thorny, usually with showy, red flowers.

STATUS: Naturalised in Qld.

VOUCHER: *R.L.Taplin 1080, R.J.Bates 62206* (AD).***Ficus carica* L.
Edible Fig**

MORACEAE

DESCRIPTION: Tree to 3 m high.

REGION OF ORIGIN: Central & eastern Europe.

FIRST RECORD: Kloot (1986) gives 1839 as the date of first introduction in S.A.

NOTES: A few trees are scattered along the gully west of the ruins, with plum trees nearby. A large tree is growing near orange and lemon trees, with a grape vine nearby. Another large tree is in the Water Gully creekline, which has permanent water flow. Some of the smaller trees scattered along the creekline may be more recent additions.

It is naturalised at the site.

Six cultivars are listed in the Catalogue. The species was widely cultivated in older gardens.

It is sparingly naturalised in S.A., usually near or above creeklines.

STATUS: Naturalised in W.A., S.A., Qld, N.S.W., Vic.

VOUCHER: *R.L.Taplin 1108* (AD).***Garrya elliptica* Douglas ex Lindl.
Silk Tassel**

GARRYACEAE

DESCRIPTION: Tree to 6 m high.

REGION OF ORIGIN: North America (California).

NOTES: One 4 × 6 m male large shrub with numerous trunks is growing near *Arbutus unedo* in the former garden area east of the ruins. There are 2 smaller plants forming a large clump. In 1987 the burnt base of a large trunk could be seen with vigorous regrowth around the edge.

Still grown for its long-tasselled male flowers. The male plant is usually grown, so seeds are not produced. The surviving clump is part of the former gardens and was probably used as nursery stock, as it is listed in the Catalogue.

It has not spread at the site as only male flowers are produced.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 22, 1007* (AD)

Hedera helix* L. subsp. *helix ARALIACEAE
Ivy

DESCRIPTION: Climber to 30 m.

REGION OF ORIGIN: Europe to Ukraine.

FIRST RECORD: Kloot (1986) gives 1841 as the date of first introduction in S.A.

NOTES: In 1987, a thick-trunked old ivy covered and protected part of the wall behind the kitchen of the homestead. In a clean-up of the ruins in 1999, it was removed and sprayed. None was found during 2005–2007.

No seedlings have been found so it is presumed extinct at the site.

The taxon used to be very popular for covering walls. It is increasing its spread in higher rainfall areas of S.A.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas., doubtfully naturalised in Qld.

VOUCHER: No voucher specimen was collected as it was removed before the study period.

***Hymenosporum flavum* (Hook.) F.Muell.** PITTOSPORACEAE
Native Frangipani

DESCRIPTION: Tree to 12 m high.

REGION OF ORIGIN: Tropical Qld. N.S.W..

NOTES: In 1998 and 2006 two small saplings were found near Horse-chestnut regrowth, growing from cut trunks in the former garden area north of the ruins. These have now reached over 2 m high and produced flowers in 2007.

It has not spread at the site.

A tall, evergreen tree grown for its creamy, strong-scented flowers that turn yellow with age.

STATUS: Not recorded as naturalised outside of its native range in Australia.

VOUCHER: *R.L.Taplin 1156* (AD).

***Hypericum calycinum* L.** GUTTIFERAE
Large-flower St John's Wort

DESCRIPTION: Creeping rhizome with stems to 0.6 m (Fig. 6).

REGION OF ORIGIN: Turkey to SE Bulgaria.

NOTES: This ground cover extends over a large area of hillside north of the ruins in a former garden area. In 1987 it covered only 6 square metres but has now spread to cover approximately 50 square metres. *Philadelphus coronarius*, *Chasmanthe floribunda* and *Amaryllis belladonna* are growing amongst it, with hundreds of suckers of *Ailanthus altissima* and *Robinia pseudoacacia*.

Not listed in Newman's 1894–1895 Catalogue, but likely to have been nursery stock and part of the gardens.

It is listed in Barker et al. (2005), due to 6 collections from bushland near old houses in S.A.

At this site it has localised spread from the original patch. It has not spread into bushland or outside the site.

STATUS: Naturalised in S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 11* (AD).

***Hypericum monogynum* L.** GUTTIFERAE
Gold Flower

DESCRIPTION: Shrub to 3 m high.

REGION OF ORIGIN: Eastern Asia.

NOTES: Two 2 m high, multi-stemmed shrubs were found amongst the *Buddleja dysophylla* thicket east of the ruins, in



Fig. 6. *Hypericum calycinum*, flower.

a former garden area. In 1987 it was recorded as 2 m high regrowth from burnt bases.

It has not spread at the site.

Not listed in Newman's 1894–1895 Catalogue, but likely to have been nursery stock and part of the gardens.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L.Taplin 51, 1086* (AD)

***Ilex aquifolium* L.** AQUIFOLIACEAE
Holly

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Europe.

FIRST RECORD: Kloot (1986) gives 1858 as the date of first introduction in S.A.

NOTES: In 1987 two burnt bases were re-sprouting vigorously to 4 m high, with one seedling in the former garden area north of the ruins. In 2005 only two shrubs remained. A 3 m high, multi-stemmed plant is growing under a large *Arbutus unedo* on the hill north of the ruins and another smaller shrub to the south beside of the track near the ruins.

It does not appear to have spread beyond the two remaining plants. There were no seedlings at the site.

The red berries and green leaves have long been associated with Christmas. Various colours and leaf forms are cultivated. There are a few records of apparently naturalised plants in S.A.

STATUS: Naturalised in S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 16* (AD).

***Lagerstroemia indica* L.** LYTHRACEAE
Crepe Myrtle

DESCRIPTION: Tree to 6 m high.

REGION OF ORIGIN: China.

NOTES: In 1987 a 2 m high multi-stemmed shrub was growing from around the base of a large burnt trunk, east of the ruins, near *Buddleja dysophylla* and *Myrtus communis*. It has since died or been smothered by the *Buddleja* thicket.

No regrowth or seedlings have been found at the site.

A shrub widely grown for its showy flowers.



Fig. 7. *Myrtus communis*, flowers.

STATUS: Naturalised in Qld.
VOUCHER: *R.L.Taplin 23* (AD).

***Leucojum aestivum* L.** AMARYLLIDACEAE
Snowflake

DESCRIPTION: Herb to .25 m high.
REGION OF ORIGIN: Europe and Ireland.
FIRST RECORD: Kloot (1986) gives 1845 as the date of first introduction in S.A.

NOTES: Snowflakes grow with daffodils and jonquils in the more fertile soil of the valley floor north east of the ruins. These bulbs have survived thirty years of sheep grazing after the sale of the 'Water Gully' property in 1932. They are still abundant along the track edge and upstream in the creekline. In some places, they are spreading into the margins of bush. The lower valley floor has been mown for use as a fire haven for park vehicles and has become infested with *Echium plantagineum* L. and *Plantago lanceolata* L..

It is well established at the site.

A widely grown bulb with scattered naturalised populations, mostly associated with old gardens.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.
VOUCHER: *R.L.Taplin 1129* (AD).

***Magnolia grandiflora* L.** MAGNOLIACEAE
Southern Magnolia

DESCRIPTION: Tree to 20 m high.
REGION OF ORIGIN: Southern U.S.A.

NOTES: One tree is growing with two trunks from its original, fallen burnt trunk and still produces numerous white flowers. It is in the creek in part of the former house garden, near *Sparmannia africana*.

It has not spread at the site

A large, evergreen tree grown for its large cream, strongly-scented flowers. Widely grown in parks and gardens in cool to warm temperate regions.

STATUS: Not recorded as naturalised in Australia.
VOUCHER: *R.L.Taplin 1122* (AD).

***Magnolia ×soulangeana* Soul.-Bod.** MAGNOLIACEAE
Saucer Magnolia

DESCRIPTION: Tree to 6 m high.
REGION OF ORIGIN: China (Hybrid).

NOTES: This deciduous shrub is growing with multiple stems from a burnt base, in a former garden area west of the ruins, near *Acca sellowiana*, *Aloe arborescens*, *Cussonia spicata* and *Chaenomeles japonica*. It still produces large lilac flowers in September. A photograph taken in 1963 shows it growing next to a 12 m high palm, which no longer can be found (i.e., the palm was probably burnt in 1983).

It has not spread at the site.

Not listed in Newman's 1894–1895 Catalogue, but may be among several cultivars listed.

STATUS: Not known to be naturalised in Australia.
VOUCHER: *R.L.Taplin 1111* (AD).

***Malus pumila* Mill.** ROSACEAE
Apple

DESCRIPTION: Tree to 3 m high.
REGION OF ORIGIN: Europe.
FIRST RECORD: Kloot (1986) gives 1837 as the date of first introduction in S.A.

NOTES: Several large apple trees are growing at the site and produce apples. There is a large tree near the ruins by the quarry wall, but this must be more recent as the quarry was not there at the time of the nursery. Another large tree is growing upstream in the creekline, as well as several downstream from the ruins, in the permanently wet creekbed. These may be adventive, as there are no remnant apple trees in the area of the former orchards.

The catalogue lists 77 cultivars of this tree.

Adventive plants are widespread along roadsides, presumably from discarded cores. They occur in surprisingly dry areas and often fruit well, but the spread of seedlings from these trees has not been convincingly recorded. It is widely grown in gardens and orchards.

STATUS: Recorded as naturalised in S.A., Qld, N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1057* (AD).

***Myrtus communis* L.** MYRTACEAE
Common Myrtle

DESCRIPTION: Shrub to 5 m high (Fig. 7).
REGION OF ORIGIN: SW Europe.

NOTES: This 1 m high shrub was seen in 1987 east of the ruins in the garden area near *Buddleja dysophylla* and next to a large pink flowered Crepe Myrtle. Following the 1983 fire, hundreds of plants have proliferated along the creekline south of the ruins. Numerous plants have now spread north to the hill opposite. There is an extensive patch near an old cottage ruin and spreading downstream along the creekline. Some of these plants were sprayed, but not killed, during the attempted control of *Noltea africana* in 2006. Others have been removed in track widening in late 2007.

This species has naturalised extensively at the site, particularly since the 1983 fire.

The source may have been the garden of the former cottage south of the ruins, which is also where the *Noltea africana* population appears to have originated. The only other AD record is of one plant from roadside near Naracoorte Caves, south-eastern S.A.

This dense, leafy, evergreen shrub is widely cultivated for flowers, fruits and aromatic leaves.



Fig. 8. *Noltea africana*, fruits.

STATUS: Naturalised in S.A. but not recorded as naturalised in other states.

VOUCHER: *R.L.Taplin 4, M.Mulvaney 73, R.J.Bates 22090* (AD).

***Narcissus pseudonarcissus* L. AMARYLLIDACEAE**
Daffodil

DESCRIPTION: Herb to .5 m high.

REGION OF ORIGIN: W Europe to N England.

NOTES: Numerous clumps are growing in the former bulb beds in the artificially flattened valley floor of Water Gully, amongst jonquils and snowflakes. Most are a small cream form with a yellow trumpet.

Several clumps of two larger forms of *N. ×incomparabilis* Mill. are growing amongst *Amaryllis belladonna* in the former garden on the hillside behind the *Camellia* shadehouse ruins. They are all yellow or cream with a yellow trumpet.

It is well established at the site.

Widely cultivated both commercially and in domestic gardens. Scattered patches persist but are not as common as jonquils (see below).

STATUS: Naturalised in W.A., SA, N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1135, 1136* (AD).

***Narcissus tazetta* L. AMARYLLIDACEAE**
Polyanthus Jonquil 'Paper White'

DESCRIPTION: Herb to 0.25 m high.

REGION OF ORIGIN: Europe.

FIRST RECORD: Kloot (1986) gives 1841 as the date of first introduction in S.A.

NOTES: This all white form of jonquil with narrow leaves grows on the rocky edges of the broad valley east of 'Water Gully' ruins. Some are spreading into bush. A similar form with broader leaves and larger flowers is growing in better soil in front of the former house verandah. It has a much stronger perfume than the former.

It is established at the site.

A bulb widely grown for its spring flowers. Scattered

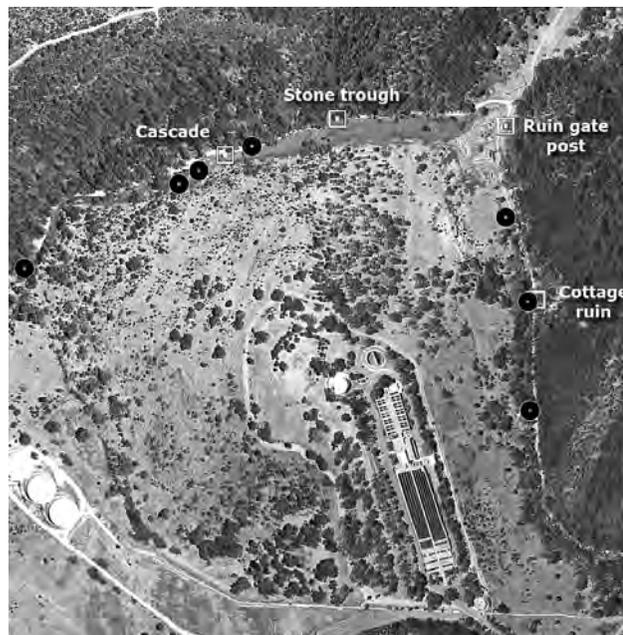


Fig. 9. Extent of the spread of *Noltea africana* (black circles) from upstream of the cottage ruin to downstream of cascade. (The population in the creekline between gates 6 & 7 is not shown).

clumps persist, often related to old gardens.

STATUS: Naturalised in WA, SA, N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1131, 1134* (AD).

***Narcissus tazetta* L. AMARYLLIDACEAE**
Jonquil (Cream & yellow)

DESCRIPTION: Herb to 0.25 m high.

REGION OF ORIGIN: Europe to Asia.

FIRST RECORD: Kloot (1986) gives 1841 as the date of first introduction in S.A.

NOTES: Jonquils are growing prolifically amongst snowflakes in the broad valley east of the "Water Gully" ruins. A photograph taken in 1963 (Brittle et al. 1990) shows a more extensive population persisting, despite 30 years of sheep grazing after the sale of the nursery in 1932. The area has been repeatedly sprayed to control Salvation Jane, *Echium plantagineum* L., not seen elsewhere on the site but spread since the formerly cleared area was no longer used for horticultural purposes. It is kept mown to provide a refuge for park vehicles during fires.

It is well established at the site.

Widely commercially cultivated bulb and in domestic gardens. Scattered clumps persist.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1130* (AD).

***Narcissus tazetta* L. AMARYLLIDACEAE**
Jonquil (Double-yellow cup)

DESCRIPTION: Herb to 0.25 m high.

REGION OF ORIGIN: Europe to Asia.

FIRST RECORD: Kloot (1986) gives 1841 as the date of first introduction in S.A.

NOTES: Numerous clumps are growing amongst rocks and spreading into bush above the Water Gully valley.

It is well established at the site.

This bulb is widely grown for its spring flowers. Scattered clumps persist near old gardens.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.



Fig. 10. *Philadelphus coronarius*, flowers.

VOUCHER: *R.L. Taplin 1132* (AD).

***Nerium oleander* L.**
Oleander

APOCYNACEAE

DESCRIPTION: Shrub to 4 m high.

REGION OF ORIGIN: Europe to Japan.

NOTES: Three multi-trunked clumps of this tough drought-resistant shrub are growing amongst a large area of *Vinca major* in the garden area east of the ruins. They have dark-pink, single flowers.

Many cultivars are grown, but it is only the single-flowered forms that produce seed. Though long cultivated, it has been slow to become naturalised. This may be because many of the early cultivars had double flowers and were sterile.

The plants in the nursery garden have not spread, despite being single-flowered.

Surprisingly, it is not convincingly recorded as naturalised in the Adelaide Hills. The locally severe infestations in South Australia at Angorichina and Balcanoona in the Flinders Ranges, along the Barrier Highway near Yunta and in a creekline south of Woomera, have single flowers and are fertile.

It might be advisable to restrict nursery sales to double-flowered forms.

STATUS: Naturalised in W.A., S.A., Qld, N.S.W. and incipiently naturalised in Vic.

VOUCHER: *R.L. Taplin 1114* (AD).

***Noltea africana* (L.) Endl.**
Noltea

RHAMNACEAE

DESCRIPTION: Shrub to 6 m high (Fig. 8).

REGION OF ORIGIN: South Africa.

FIRST RECORD: Pt. Victor [= Victor Harbor], s.coll., 1909 (AD 988482933).

NOTES: In a visit to the nursery site with M. Mulvaney in 1987, hundreds of seedlings were seen producing fruit when only 0.5 m high, as well as multiple trunks to 4 m high, coppicing from burnt bases. This species may have proliferated as a result of

the 1983 fire. Extensive thickets of 5 m high, spreading shrubs occur from near an old cottage ruin, downstream to the nursery complex, with scattered large clumps further downstream in the Water Gully creekline. Several plants had spread downstream on the same creekline into a Council Reserve 2 km west. These have now been removed but seed may still be present. This invasive shrub is well-established in the creek upstream from the ruins for a distance of 225 m (Fig. 9).

It is well established at this site and spreading outside the study area.

Until recently, this was the only known occurrence in Australia. The taxon has also recently been found near Darlington, north-east of Perth, W.A., where it was reported to be growing vigorously and spreading along a creek (D. Bickerton, pers. comm.).

In 2006 as a result of this report, some plants on the edge of the track were sprayed in an attempt to control its spread. On a subsequent visit, R.L. Taplin observed that thickets of hundreds of large plants still remain in the creekline and those sprayed are now resprouting. Scattered large shrubs downstream were not sprayed. A smaller population 1 km west in the same creekline and extending for 100 m near the park entrance was not sprayed, as well. This is the site of the first collection from this location (*W.R. Barker & R.M. Barker 629*, AD), described as a new record for S.A. and Australia. However, there is an earlier AD record with no details given, from 1909 from Victor Harbor, on southern Fleurieu Peninsula.

It is not known to be grown as a garden plant, but it may have been used as an early hedge plant.

Not listed in Newman's 1894–1895 Catalogue.

STATUS: Naturalised in W.A., S.A.

VOUCHER: *W.R. Barker & R.M. Barker 629*, *A.G. Spooner 8337*, *10067*, *R.L. Taplin 3*, *1083*, *M. Mulvaney 72*, *R.J. Bates 15647* (AD)

***Pandorea pandorana* (Andrews) Steenis**
Wonga Vine

BIGNONIACEAE

DESCRIPTION: Climber to 6 m.

REGION OF ORIGIN: Eastern Australia, Tropical Australia to Malaysia.

NOTES: One small clump was found growing above the retaining wall and buggy shed remains, near the *Agave americana* and *Aloe* spp. patch behind the house ruins. It has a dead thick, trunk twisted around a eucalypt. In spring it produced cream tubular flowers.

It has not spread at the site, but has the potential to do so.

There is an extensive outbreak of this species climbing tall eucalypts, in Morialta Conservation Park, S.A.

Not listed in Newman's 1894–1895 Catalogue, but may be amongst the fifteen *Bignonia* species listed.

STATUS: Naturalised in S.A. and native to Qld, N.S.W., Vic., Tas.

Voucher specimens: *R.L. Taplin 1089*, *1137* (AD).

***Philadelphus coronarius* L.**
Sweet Mockorange

SAXIFRAGACEAE

DESCRIPTION: shrub to 3 m high (Fig. 10).

REGION OF ORIGIN: Europe to SW Asia.

NOTES: One small, straggly shrub was found growing in the *Hypericum calycinum* garden north of the ruins. It produced white, sweet-scented flowers in December.

It has not spread at the site.

A deciduous shrub grown for its attractive white, perfumed flowers. There are many cultivars.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L. Taplin 1013* (AD).

***Pinus pinea* L.
Stone Pine**

PINACEAE

DESCRIPTION: Tree to 30 m high.

REGION OF ORIGIN: Mediterranean Europe.

NOTES: Two trees to 20 m and four saplings are growing near another tall, dead, burnt pine with the same bark pattern. They are opposite a cottage ruin south of the nursery site. Others have mistaken for *Pinus radiata* or *P. halepensis*, which both occur in the park, and ring-barked. These tall trees may have been part of the avenue of trees lining the driveway leading to the Nursery site, many of which were cut down after the property was sold in 1932 (Brittle et al. 1990).

A large tree with horizontal branches, eventually forming an umbrella shaped crown. The cones are large and contain numerous edible kernels.

Native to the Mediterranean region and widely planted in maritime and temperate Australia for its ornamental value and edible seeds (pine nuts). Most records are of old planted specimens.

Saplings 4 m high have grown beneath the adult trees at this site. They are probably *Pinus pinea*, as *P. halepensis* does not grow nearby. This would suggest that they are incipiently naturalising at the site.

STATUS: Recorded as naturalised in N.S.W., Vic., W.A., with one record for Perth with no information about the number of plants at the site.

VOUCHER: A voucher specimen was not collected, due to the height of the tree, but cones, fallen dead branches and photographs were examined by D.E. Symon and identified as *P. pinea*.

***Polygala myrtifolia* L.**

POLYGALACEAE

Myrtle-leaf Milkwort

DESCRIPTION: Shrub to 2 m high.

REGION OF ORIGIN: South and eastern Africa.

FIRST RECORD: Kloot (1986) gives 1845 as the date of first introduction in S.A.

NOTES: Several small shrubs have been found north of the ruins near *Umbellularia californica* and many more east of the ruins, near *Arbutus unedo*. In a 1987 visit with M. Mulvaney, they were recorded as numerous seedlings 30 cm high, widespread in the burnt garden areas. Most have been removed but a number of large shrubs and young seedlings still persist amongst large *Rhamnus alaternus* shrubs in bushland south of the garden area.

This species has naturalised and has potential for further spread at the site.

Still grown in gardens, but now widely naturalised. Extensive populations have become established along coastal dunes at Kingscote and Robe in S.A.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 14, 1087, M.Mulvaney 69* (AD).

***Populus nigra* L.**

SALICACEAE

Lombardy Poplar

DESCRIPTION: Tree to 30 m high.

REGION OF ORIGIN: Central and eastern Europe.

FIRST RECORD: Kloot (1986) gives 1861 as the date of first introduction in S.A. of *P. alba*.

NOTES: In 1987 this was seen growing upstream in Water Gully, but has since been removed.

No suckers or seedlings have appeared, so it is not known what variety was grown.

It is now presumed extinct at the site.

The erect deciduous tree *P. nigra* var. *italica* Du Roi, Lombardy Poplar, is widely grown. This species suckers prolifically and may form dense thickets that persist. Widely established wherever it has been planted.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic.

VOUCHER: No voucher specimen was collected before the study period and the species can no longer be found at the site.

***Prunus cerasifera* Ehrh.**

ROSACEAE

Cherry-plum

DESCRIPTION: Tree to 8 m high.

REGION OF ORIGIN: Central Asia.

FIRST RECORD: Kloot (1986) gives 1858 as the date of first introduction in S.A.

NOTES: Large trees of both red and green-leaf forms grow near the ruins, as well as in the creeklines to the south and west. They produced small, red fruits in summer.

Widely grown for its pale-pink flowers and purple-leaved cultivars; less often as a fruit crop.

This is definitely naturalised at this site and is spreading in other sites in S.A.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas.

VOUCHER: *R.L.Taplin 1064* (AD).

Prunus domestica* L. subsp. *domestica

ROSACEAE

European Plum

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: SW Asia and northern Africa.

FIRST RECORD: Kloot (1986) gives 1839 as the date of first introduction in S.A.

NOTES: Two large trees with yellow fruit are growing near an old cottage ruin south of the nursery site. Another population was seen growing in a gully further south, outside the Newman property, in an orchard remnant with quinces and almond trees. Prune plums are growing with fig trees in a gully west of the ruins.

It has not spread at the site.

A deciduous tree widely grown in gardens and orchards. Many cultivars were grown by Newman's. This species often persists around abandoned gardens and orchards. State Herbarium records show it as sparingly established in better rainfall areas in S.A. but it is not as common as *P. cerasifera*.

STATUS: Naturalised in W.A., S.A., Vic.

VOUCHER: *R.L.Taplin 1066* (AD).

***Prunus dulcis* (Mill.) D.A. Webb**

ROSACEAE

Almond

DESCRIPTION: Tree to 8 m high.

REGION OF ORIGIN: Central and SW Asia.

FIRST RECORD: Kloot (1986) gives 1837 as the date of first introduction in S.A.

NOTES: Scattered old trees are growing east of the ruins near the flowering gums. Two grow near the old cottage to the south of the ruins. More remnant trees were found in bushland on the steep hill north of the Water Gully valley. Old photographs show this area as cleared and planted as an orchard. (See Fig.1).

Widely grown in domestic gardens and orchards. The species suckers, forming persistent clumps. It is not clear whether regeneration from seed occurs.

It has not spread at the site.

STATUS: Naturalised in W.A., S.A. and listed as incipiently naturalised in Vic.

VOUCHER: *R.L.Taplin 1112* (AD).

***Prunus mahaleb* L.**
Sour Cherry

ROSACEAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Central and southern Europe to Ukraine.

NOTES: Several trees bearing tiny, red fruit in summer are growing near the ruin of a cottage south of the nursery site. Numerous other large trees were found in the former garden areas to the east and west of the ruins.

Cherries were grown in the former orchards. This species has been used as a stock for grafting. A number of trees persist in the vicinity of old orchards. The large number of trees found at 'Water Gully', combined with its widespread distribution indicate its potential for spreading. The large tree on the quarry edge must have grown more recently, as the old photographs show a hill behind the nursery complex where the quarry wall is now.

It is well established at the site.

It has only recently been recognised as naturalised in S.A. (Barker et al. 2005). More information is needed on its distribution in the state.

STATUS: Naturalised in S.A., N.S.W..

VOUCHER: *R.L.Taplin 6, 1043, 1079* (AD).

***Punica granatum* L.**
Flowering Pomegranate

PUNICACEAE

DESCRIPTION: Shrub to 3 m high.

REGION OF ORIGIN: Europe to India.

NOTES: One small shrub became apparent when it produced orange flowers in summer, amongst the extensive patch of *Vinca major*. It is growing in a former garden area near clumps of *Oleander*.

It has not produced fruit or spread at the site.

This shrubby tree has long been cultivated for its edible and decorative fruit. It may be found in old gardens.

STATUS: Naturalised in Qld, N.S.W.

VOUCHER: *R.L.Taplin 1088* (AD).

***Quercus robur* L.**
English Oak

FAGACEAE

DESCRIPTION: Tree to 45 m high.

REGION OF ORIGIN: Europe.

FIRST RECORD: Kloot (1986) gives 1841 as the date of first introduction in S.A.

NOTES: One large tree is growing in the former garden area, east of the nursery site. As a result of the 1983 fire, it bears a large scar extending 4 m up the trunk.

It has not spread at this site.

Widely planted in higher rainfall areas where it may be sparingly naturalised.

STATUS: Naturalised in S.A., Vic., A.C.T.

VOUCHER: *R.L.Taplin 1055* (AD).

***Rhamnus alaternus* L.**
Blowfly Bush

RHAMNACEAE

DESCRIPTION: Shrub to 5 m high (Fig. 11).

REGION OF ORIGIN: Mediterranean Europe.

FIRST RECORD: Kloot (1986) gives 1839 as the date of first introduction in S.A.

NOTES: Several very large shrubs to 3 m are growing in the northern garden area and have spread into bushland with *Ailanthus altissima*. Many more are growing amongst *Acacia paradoxa* in bushland south of the garden area. Scattered very large plants remain on the hill to the north-east where many have been removed. It may have been planted in the garden area. It is an invasive plant scattered throughout the park, so



Fig. 11. *Rhamnus alaternus*, fruits.

may also be adventive to the site.

It is well established and is the most widespread invasive woody weed at the site.

Once used as a hedge, it is now increasingly naturalised in a range of environments. Despite this, it is still sold in nurseries in SA.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., Tas., doubtfully naturalised in Qld.

VOUCHER: *E.F.Boehm 515* (AD).

***Robinia pseudoacacia* L.**
Black Locust

LEGUMINOSAE

DESCRIPTION: Tree to 20 m high.

REGION OF ORIGIN: North America.

FIRST RECORD: Kloot (1986) gives 1841 as the date of first introduction in S.A.

NOTES: Following the destruction of the original trees in the 1983 fire, hundreds of suckers and seedlings have spread over the hillside north of the ruins. One is now a 6 m high tree growing through the top of *Umbellularia californica*. They are growing amongst *Ailanthus altissima* saplings with *Amaryllis belladonna* and *Hypericum calycinum*.

This deciduous tree is found mainly in older gardens. It suckers freely and thus persists in many sites. This has survived fire, cutting and spraying. Hundreds of small trees have developed and are now producing seedpods.

It is well established at the site and spreading into bushland.

STATUS: Naturalised in W.A., S.A., Qld, N.S.W., Vic.

VOUCHER: *R.L.Taplin 15, 814* (AD).

***Rosa banksiae* W.T.Aiton**
Banksia Rose

ROSACEAE

DESCRIPTION: Climber to 6 m high.

REGION OF ORIGIN: China.

NOTES: A large sprawling plant is climbing over the ruins of an old cottage above the Water Gully creekline. In spring it produces masses of small white flowers. Five plum and two persimmon trees grow nearby.

It has not spread at the site.

Fig. 12. *Syzygium australe*, fruits.

A vigorous, mounding, evergreen shrub with sparse prickles and leaves glossy above. It can form basal trunks to 20 cm diameter. This rose is still popular today, with several cultivars grown.

STATUS: Not recorded as naturalised in Australia, though relic plants may persist.

VOUCHER: *R.L.Taplin 1101, 1143* (AD).

***Sparmannia africana* L.f.**
African Linden

TILIACEAE

DESCRIPTION: Shrub to 3 m high.

REGION OF ORIGIN: Southern and eastern Africa.

NOTES: Numerous trunks are growing from a burnt base to form a 3 m by 5 m clump on the edge of Water Gully creek, next to *Syzygium australe*. It bears double white flowers in spring. In old photographs from 1880s and 1963, this area is shown as garden at the side of the homestead.

This shrub forms large multi-stemmed clumps likely to survive fire. Most cultivated plants are fully double flowered and are thus unlikely to produce seed. It has not spread at the site.

STATUS: Not known to be naturalised in Australia.

VOUCHER: *R.L.Taplin 8, 1005* (AD).

***Stenocarpus sinuatus* Endl.**
Wheel of Fire

PROTEACEAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: Tropical Eastern Australia: Qld, N.S.W.

NOTES: One 8 m high single-trunked tree has become enveloped in the canopy of the adjacent *Syzygium australe*. The red flowers are produced below the top of the foliage of the Scrub Cherry.

It has not spread at the site.

Occasionally cultivated but unlikely to become established here.

STATUS: Not recorded as naturalised outside its native area.

VOUCHER: *R.L.Taplin 159* (AD).

Fig. 13. *Syzygium australe*, base with multiple trunks, regrown after the 1983 Ash Wednesday fire.

***Syzygium australe* (J.C.Wendl. ex Link.) B.Hyland**
Scrub Cherry

MYRTACEAE

DESCRIPTION: Tree to 12 m high (Fig. 12).

REGION OF ORIGIN: Eastern Australia: Qld, N.S.W.

NOTES: One 10 m high canopy comprises three multi-trunked clumps growing from the base which was burnt in 1983 (Fig. 13). It is next to *Sparmannia africana* in a former garden area at the side of the house. It can be seen in old photographs from 1880s and 1963. *Stenocarpus sinuatus* is now growing through the canopy.

The species has not spread in this location.

In the garden east of the ruins, there is a smaller tree of the same species growing under the oak and amongst the *Buddleja dysophylla* thicket.

It has not spread at the site, despite having fruit which may be attractive to birds.

Not listed in 1894–1895 Catalogue, but likely nursery stock and may have been amongst the *Eugenia* species listed.

STATUS: Not recorded as naturalised outside its native area.

VOUCHER: *R.L.Taplin 155, 1008, 1017, 1103* (AD).

***Trachycarpus fortunei* (Hook) H.Wendl.**
Chinese Fan Palm

PALMAE

DESCRIPTION: Tree to 10 m high.

REGION OF ORIGIN: E Asia.

NOTES: A single 5 m high palm is growing in front of the verandah of the homestead remains. This is much smaller, about 2 m high in the 1963 photographs. These also show an extremely tall palm over 10 m high, with a trunk of about one metre in diameter growing on the bank of the small gully near *Acca sellowiana* and *Magnolia ×soulangea*. This large palm is no longer extant and must have been destroyed in the 1983 fire.

This compact, cool temperate fan palm is widely grown in gardens. It is usually single-stemmed and retains masses of loosely matted fibres on its trunk for long periods. The species is dioecious, so that isolated plants are unlikely to set seed.

None have grown at the site.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: No voucher specimen was collected as the tree was too tall. A fallen dead frond and a photograph showing the habit and fruit were examined by D. Symon and identified as this taxon.

***Ulmus procera* Salisb.**

ULMACEAE

Common Elm

DESCRIPTION: Tree to 30 m high.

REGION OF ORIGIN: Southern and western Europe.

NOTES: Following the Ash Wednesday fire in 1983, dense thickets of suckers and seedlings have covered the hillside east of the ruins. Large trees and saplings are growing along the creekline to the south. Many have been removed but hundreds of small plants still persist. Just south of the ruins a 10 m high burnt tree has suckers growing from its base.

Although well established at the site, to date none of the young plants has produced fruit.

This species suckers freely and often forms persistent clumps.

STATUS: Naturalised in S.A., N.S.W., Tas., incipiently naturalised in Vic.

Voucher specimens: *R.L.Taplin 2, 816, E.F.Boehm 600* (AD).

***Ulmus ×hollandica* Mill.**

ULMACEAE

Dutch Elm

DESCRIPTION: Tree to 40m high.

REGION OF ORIGIN: Native of Europe and Asia.

NOTES: This 6 m high smooth-barked, multi-trunked elm is growing from the burnt base and fallen trunk of the original tree. Following a visit to this site with M. Mulvaney in 1987, it was identified at the State Herbarium as Dutch Elm. It is in the creekline south of the ruins near a tall pink small-flowered kurrajong and growing with *U. procera*. There are several 5 m high, multi-trunked clumps growing from original trunks. This species does not appear to sucker as prolifically as Common Elm but may form locally persistent clumps. It has not spread beyond the collection site.

STATUS: Naturalised in S.A., N.S.W., Vic., Tas.

VOUCHER: *M.Mulvaney 70* (AD).

***Umbellularia californica* (Hook. & Arn.) Nutt.**

LAURACEAE

Californian Bay Laurel

DESCRIPTION: Tree to 20 m high.

REGION OF ORIGIN: North America (California).

NOTES: One 10 m high, multi-trunked tree is growing from its burnt original trunk in a former garden area north of the ruins. It has shiny, strongly aromatic leaves and produced a few fruit in 2006. *Backhousia myrtifolia* is beneath its canopy and an unknown 4 m high shrub with white flowers and small black berries is growing beside it. Nearby on the steep hillside are *Arbutus*, *Ilex* and *Aesculus*. All have regrown with multiple trunks since the 1983 fire.

It has not spread at the site.

It is not in the 1874-5 Catalogue. Rarely grown.

STATUS: Not recorded as naturalised in Australia.

VOUCHER: *R.L. Taplin 13, 1006, 1113* (AD).

***Viburnum tinus* L.**

CAPRIFOLIACEAE

Laurustinus

DESCRIPTION: Shrub to 7 m high.

REGION OF ORIGIN: Mediterranean Europe.

FIRST RECORD: Kloot (1986) gives 1845 as the date of first introduction in S.A.

NOTES: One 2 m, multi-stemmed shrub is growing under the

oak in a garden area east of the ruins.

A widely grown, evergreen *Viburnum* forming a multi-stemmed shrub, likely to survive fire.

It has not spread at the site, but produces berries that could be spread by birds.

Not listed in Newman's 1894–1895 Catalogue but a likely nursery stock and garden plant.

STATUS: Naturalised in S.A., N.S.W., Vic.

VOUCHER: *R.L.Taplin 1056* (AD).

***Vinca major* L.**

APOCYNACEAE

Blue Periwinkle

DESCRIPTION: Creeper to .5 m high.

REGION OF ORIGIN: Western Mediterranean Europe.

FIRST RECORD: Kloot (1986) gives 1858 as the date of first introduction in S.A.

NOTES: This rhizomatous creeper has formed a dense ground cover around many old shrubs in the former garden area east of the ruins. Variegated leaf forms grow amongst the green leaves. It has spread along the northern side of the house ruins and along the creek bank for 500 m downstream.

It is well established at the site.

Now widely naturalised as a garden escape and long persistent in abandoned gardens.

STATUS: Naturalised in all other states, except N.T.

VOUCHER: *R.L.Taplin 1128* (AD)

***Viola odorata* L.**

VIOLACEAE

Common Violet

DESCRIPTION: Herb to 10 cm high.

REGION OF ORIGIN: Europe to Asia.

FIRST RECORD: Kloot (1986) gives 1839 as the date of first introduction in S.A.

NOTES: This widely cultivated stoloniferous herb is growing prolifically along the creekline and under eucalypts on both sides of the track south of the ruins. It has not been seen to flower, but produced small purple flowers when grown in the garden by R. Taplin.

That one surviving clump is white-flowered and growing in the corner of the former shade-house near *Camellia*, suggests that it is a nursery remnant.

It is well established at the site.

STATUS: Naturalised in W.A., S.A., N.S.W., Vic., doubtfully naturalised in Qld.

VOUCHER: No voucher specimen was collected as the population at the site has not been seen to produce flowers.

***Vitis vinifera* L.**

VITACEAE

Grape Vine

DESCRIPTION: Woody climber to many metres long.

REGION OF ORIGIN: Southern and central Europe.

NOTES: One small old sprawling clump bearing red grapes is growing on the hillside west of the nursery site. It is near a large fig tree, with small orange and lemon trees above a stone wall along the Water Gully creekline. It is close to the site of a former cottage and may be part of its garden.

It has not spread at the site.

The catalogue lists many cultivars and vines were also grown, mostly muscatels.

Grape growing is now a major industry, where rainfall is adequate or irrigation available. Sprawling vines will root at nodes.

Propagation from seed does not seem to be common and few adventive plants have been recorded.

STATUS: Naturalised in W.A., N.S.W., doubtfully naturalised in



Fig. 14. *Watsonia marginata*, flowers.

Old and incipiently naturalised in Vic.

VOUCHER: R.L.Taplin 1100 (AD).

***Watsonia marginata* ‘Curviflora’**
Saxophone *Watsonia*

IRIDACEAE

DESCRIPTION: Herb to 0.75 m high (Fig. 14).

REGION OF ORIGIN: South Africa. (Cultivar/Hybrid).

FIRST RECORD: Kloot (1986) gives 1845 as the date of first introduction in S.A. of *W. marginata*

NOTES: A single clump producing flowers on curved stems to 1 m is growing near a former cottage south of the nursery complex. It is near almond trees and a lemon tree. It produced bright-pink flowers in late October and may be an old cultivar.

It has not spread at the site.

Not listed in Newman’s 1894–1895 Catalogue but one species was listed.

Watsonia species are now widely established and are grown as decorative plants in domestic gardens.

This *Watsonia* with a serpentine inflorescence is rarely seen and is remarkable to have survived so many years in a single clump.

VOUCHER: R.L.Taplin 1062, 1149 (AD).

***Wigandia urens* var. *caracasana* (Kunth) D.N.Gibson**
Wigandia

HYDROPHYLLACEAE

DESCRIPTION: Shrub to 4 m high.

REGION OF ORIGIN: Tropical America, Mexico to Columbia.

NOTES: Hundreds of plants have been removed but many still remain, often in inaccessible quarry walls. The quarry was not there at the time of the nursery operation, so the spread has occurred more recently, particularly since the 1983 fire. The original shrub can be seen in 1860s and 1963 photographs of the garden. The taxon was first collected in 1987 on a visit to the site with M. Mulvaney, who was documenting the spread of garden plants into bushland. It is reported as growing amongst rocks and walls in the Mediterranean (Tutin et al. 1964–1980).

It is well established but not spread outside of the localised area recorded with GPS and plotted onto an aerial photograph of the site (Fig. 15).

This shrub with large furry leaves and showy purple flowers is now rarely grown but may have been popular in the 19th century. As it is now spreading in the adjacent quarry and hillside, it obviously has great potential to spread in a localised area, particularly after fire. In 2007 more plants were removed in a clean-up amongst the ruins in preparation for the erection of interpretive signage for the historic site.

STATUS: Naturalised in WA, SA.

VOUCHER: R.J.Bates s.n. (AD98847189), M.Mulvaney 74, R.L.Taplin 815, A.G.Spooner 15224 (AD).

Conclusions

Remaining exotic plants at the site of the former Newman’s Nursery and garden give us idea of the plants grown in cultivation 80–160 years ago and also serve as an example of the persistence of some of these species, despite major disruptions, such as the Ash Wednesday fire from 1983.

Of particular interest are garden plants which have become woody weeds at the ‘Water Gully’ nursery site that so far have little or no record of spread in South Australia, outside the nursery site. They include the following species: *Buddleja dysophylla*, *Myrtus communis*, *Noltea africana*, *Prunus mahaleb* and *Wigandia urens* var. *caracasana*. These species were already naturalised at the site when they were first recorded in 1987.

Noltea africana is confined to permanently wet creeklines but is still widespread, despite recent spraying. *Buddleja dysophylla* was not collected and identified until 2005, when it was seen flowering. It has now spread from a single shrub to form a thicket 25 m long × 3 m wide. *Prunus mahaleb* was not identified until 2005, when it was seen bearing fruit. It is widespread throughout the site, with fruit probably spread by birds. *Myrtus communis* is not listed in the censuses of other states as naturalised, but is widespread at this site.

Some of the large old trees, such as *Umbellularia californica*, *Quercus robur* and *Syzygium australe*, as well as the unusual species *Cussonia spicata*, *Backhousia myrtifolia*, *Garrya elliptica* and *Diospyros whyteana* could well be regarded as ‘heritage’ plants. The fact that they have survived for up to 160 years and have not spread or produced seedlings suggests that they are not a danger of becoming weeds and might have some heritage status, as living examples of what was grown in early colonial gardens in South Australia.

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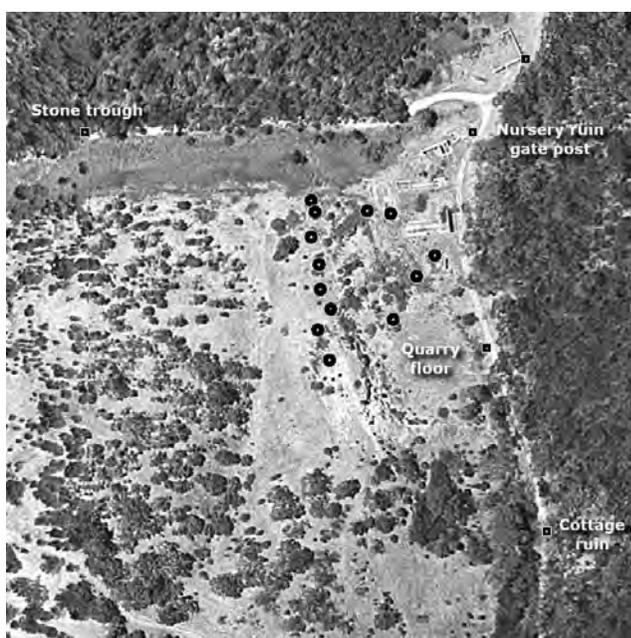


Fig. 15. Extent of *Wigandia urens* var. *caracasana* spread since the Ash Wednesday fire of 1983 from the original plants in the garden. (The quarry was not there at the time of the Nursery).

allowed the reproduction of a photograph of the Nursery in their possession. Aerial photography was provided by Mapland, DEH.

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