COMMONWEALTH WAR GRAVES COMMISSION

Tree Planting and Management

Breadth of Opportunity

The spread of the Commission's responsibilities over some 148 countries in temperate, mediterranean, tropical and desert climates provides wonderful opportunities to experiment with nature's wealth of tree species.

We are particularly fortunate in being able to grow many interesting and beautiful trees and we will explain how we manage them and what splendid specimens they can make.

Why Plant Trees?

Trees are planted for a variety of reasons: their amenity value, leaf shape and size, flowers, fruit, habit, form, bark, landscape value, shelter or screening, backcloth planting, shade, noise and pollution reduction, soil stabilisation and to encourage wild life. Often we plant trees solely for their amenity value. That is, the beauty of the tree itself. This can be from the leaves such as those in Robinia pseudoacacia 'Frisia', the flowers in the tropical tree Tabebuia or Albizia, the crimson stems of the sealing wax palm (Cyrtostachys renda), or the fruit as in Magnolia grandiflora.

above: Sealing wax palms at Taiping War Cemetery, Malaysia with insert of the fruit of Magnolia grandiflora

Selection

Generally speaking the form of the tree is very often a major contributing factor and this, together with a sound knowledge of the situation in which the tree is to be grown, guides the decision to the best choice of species.

Exposure is a major limitation to the free choice of species in northern Europe especially and trees such as Sorbus, Betula, Tilia, Fraxinus, Crataegus and fastigiate yews play an important role in any landscape design where the elements are seriously against a wider selection. The variety of trees we grow in all corners of the world is extensive. A list of trees grown in our five main Areas is provided at the end of this article.

left: The tropical tree Tabebuia

below: Flowers of the tropical tree Albizia julibrissin

Planting Design

Scale is of major importance when considering the type of tree to plant in a cemetery. The layout of the borders and plots will, to a greater extent, dictate where trees can be planted as they are never planted in headstone or pedestal borders. Avenues offer a splendid opportunity for adventurous schemes as can be seen by the planting of Cypresses in **Florence War Cemetery, Italy** compared to the broad-leaved trees grown previously.

A fine avenue of fastigiate hornbeam (Carpinus betulus 'Fastigiata') blankets the hill at **Villers Bretonneux Military Cemetery, France** to mimic lines of marching soldiers. These trees have grown well on the shallow chalk soils of the cemetery. In the tropics palms can make attractive avenue trees. Roys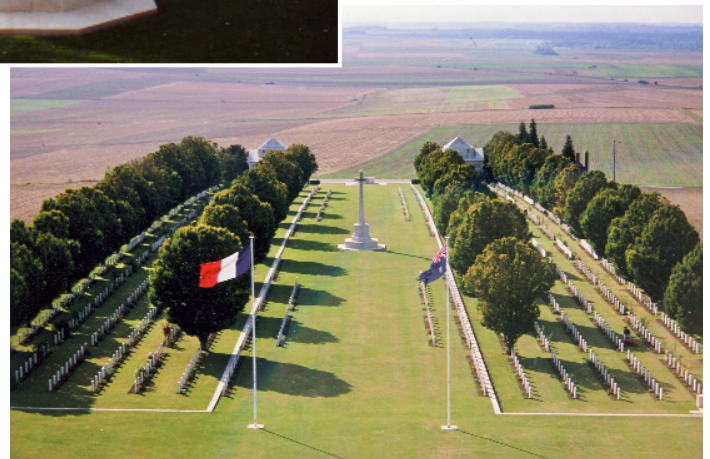tonea elata palms at **Taiping War Cemetery, Malaysia**, lead to the Cross of Sacrifice and contrast with the dense jungle beyond. When a choice of tree has been made they are planted at final spacings rather than planting more to thin later. The exception is with shelter belts where a quicker effect may be needed.

far left: Florence War Cemetery, Italy before planting Cypresses . . . .

left: . . . . .and after planting Cypresses

below: Fastigiate hornbeam (Carpinus betulus 'Fastigiata') at Villers Bretonneux Military Cemetery, France

Roystonea elata palms at Taiping War Cemetery, Malaysia

Choice of Stock

The deciduous trees planted in northern Europe are generally planted bare rooted. In warmer climates, only container grown plants are available because in many cases trees do not have a dormant season. Evergreens are nearly always planted as container grown stock because of their dislike of root disturbance.

Root balling is used for trees which are not easy to move bare rooted, and this includes extra heavy standards which are moved with a substantial amount of soil attached to the roots. Conifers and evergreens over 1.5 metres are successfully moved as root balled specimens and can be sprayed with an anti-dessicant the day before lifting.

Tree Planting Specification

Timing

November to March is the best time to plant bare rooted stock in northern Europe. Container grown trees are planted October to April in northern Europe and at the onset of rains in warmer regions. Where water is available, container grown trees can practically be planted the year round but the cooler season (November to February) is preferred in the Mediterranean and Middle East. Evergreens are best planted in October or November and March or April in Europe.
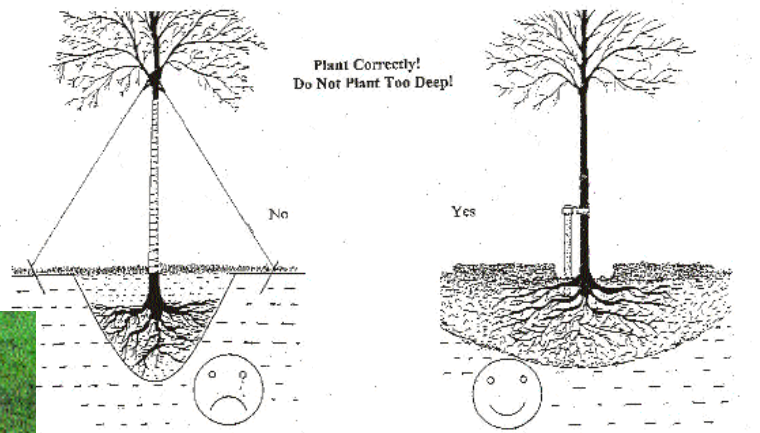

Tim Sandall, The Garden

Positioning the tree

The Planting Site

The illustration (right) and photographs show clearly the importance of preparing a planting site, a square hole in a circle of 1.5m in diameter is prepared to a depth of 30cm, (wide rather than deep holes result in better tree establishment).

Plant Correctly!
Do Not Plant Too Deep!

No   Yes

The incorrect and correct method of planting and staking a tree

Tim Sandall, The Garden

Positioning the tree

The sides of the hole are broken to aid root penetration and the soil returned to the pit allowing space for the tree. Organic matter is generally not added.
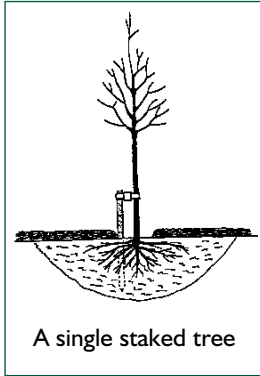
Planting

The tree is placed upright in the centre of the tree pit and the roots spread out. Roots of container grown trees are teased out and encouraged to grow outwards. It is critical that the tree is planted at the correct depth: planting too deep is a major cause of losses and the root collar should be level with the surrounding ground (see above). The backfill is firmed around the roots gently shaking the tree to settle the soil as the tree is heeled in. During this process, mycorrhizal fungi, in the form of a powder, are added and mixed with the backfill around the roots. If the site has poor, dry soil conditions a water retaining polymer is well mixed with the backfill, but is only added if it can be regularly 'recharged' with water during dry periods. It is also good practice to place an irrigation tube around the roots where water can be provided in times of drought where no irrigation systems are installed.
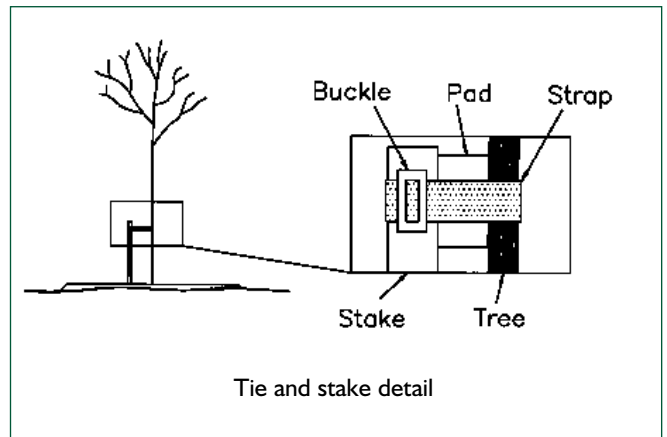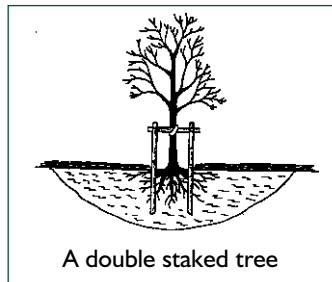

Positioning an irrigation tube

Tree Staking and Mulching

A single staked tree

While the tree is being positioned in the middle of the hole, a short, round stake, 10cm diameter, no more than one third the height of tree above the ground and 75cm below, is placed on the windward side of the tree. The stake is there to support and stabilise the roots as regeneration of the finer, nutrient seeking root hairs takes place. The short stake allows the stem to sway with the wind which increases stem diameter. In the early years of growth it is important that weeds do not compete with the tree's roots for moisture and nutrients and therefore a thick (8cm) layer of bark mulch is placed around the base of the tree keeping the stem clear to avoid suffocation. This may need topping up in future years.
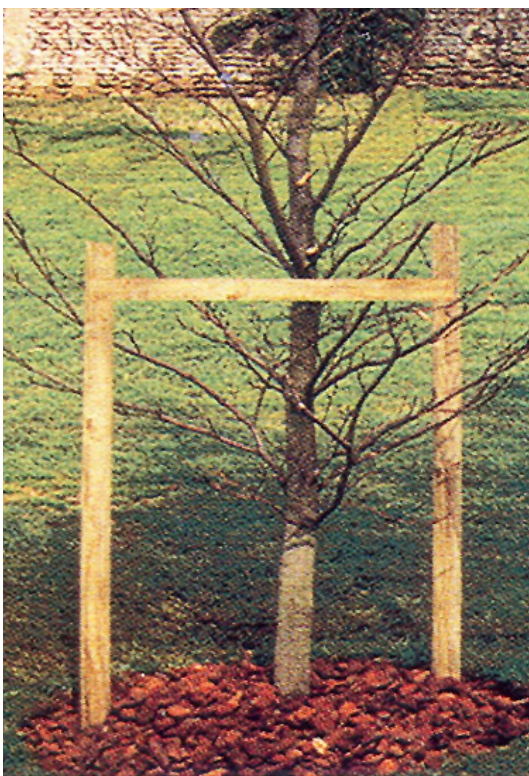
Where more support is required and a larger tree is being planted, crossbar staking is used. All stakes are generally removed the second spring after planting.

A double staked tree

Tie and stake detail

Initial pruning?

Apart from removing any dead or crossing branches, which should not be necessary if good quality stock has been purchased, the tree is not pruned. Older practices have often recommended that branches are removed to compensate for the loss of roots after transplanting. Modern arboricultural practice no longer recommends this.

Reducing the number of buds and consequently leaves on a transplanted tree removes starch and sugars and other photosynthetic by-products which would otherwise be translocated to the roots and aid root regeneration.
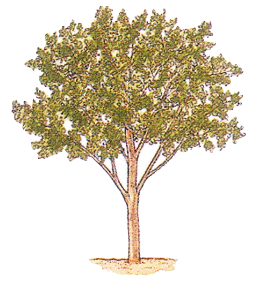

above: An avenue of clipped Ficus retusa at Alexandria (Hadra) War Memorial Cemetery, Egypt

left: Staking a large tree

Forms and Uses of Trees

The five main forms of trees described are the branched-head standard such as the Prunus avium 'Plena' (below left), multi-stemmed such as the Arbutus andrachne on the Gallipoli peninsular (below right), weeping standard such as these weeping willows (centre left), fastigiate trees such as the yews, over the page, and central-leader standard such as this tulip tree (Liriodendron tulipifera - centre right). Specific forms such as these can be produced by careful pruning, but the choice of tree often dictates the ultimate form that will result.

Branched-head standard

Prunus avium 'Plena' at
Ovillers Military Cemetery, France

Arbutus andrachne at
7th Field Ambulance Cemetery, Gallipoli

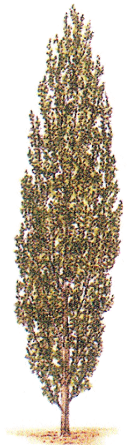Multi-stemmed tree

Weeping willows at
Lijssenthoek Military Cemetery, Belgium

Tulip tree at
Ypres Reservoir Cemetery, Belgium

Weeping standard

Trees can be grown into a variety of shapes and forms, some of which are shown here. ***Topiary*** is the art of clipping trees into architectural or geometrical forms as illustrated by the Ficus retusa at ***Alexandria (Hadra) War Memorial Cemetery, Egypt***, previous page, where there is insufficient space to grow a full sized tree, or at ***Arras Road Cemetery, France***, over the page, where Carpinus betulus has been clipped into cones. The effect is particularly striking in mid-winter. At ***Heliopolis War Cemetery, Egypt***, (left) Ficus retusa trees have been shaped into a covered walk: an interesting type of formal training.

Ficus retusa trees at Heliopolis War Cemetery, Egypt

Fastigiate tree

Central-leader standard

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Formative Pruning

Prior to such specific pruning it is important to ensure that in the early stages of growth any double-leaders are removed if the form required is a tree with a central-leader. Omitting to do so can create a weak junction and failure of one of the codominant branches in later years.

Carpinus betulus at Arras Road Cemetery, France

Pruning Mature Trees

Pruning established trees is a professional job which is performed by qualified arborists within the Commonwealth War Graves Commission. There are numerous operations which can be carried out to trees: three of the most important are described. ***Crown lifting*** is an operation which removes the lower branches of a tree allowing more light to penetrate beneath the canopy or to allow the passage of vehicles or pedestrians. Raising the crown can also open up a vista or view beneath the
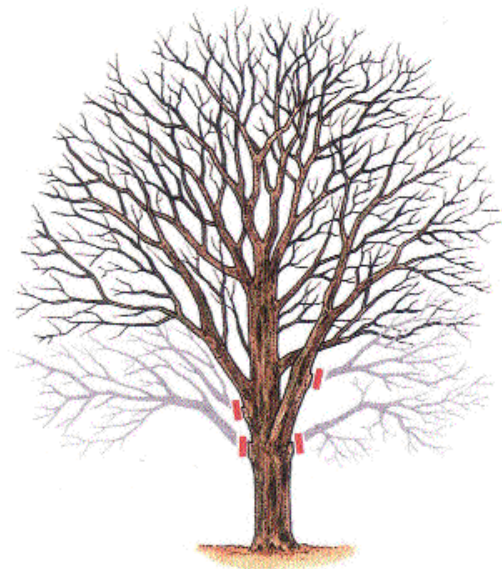

Crown Thinning and Reduction

These operations are often combined to reduce the size of a tree and allow more light and air to penetrate through the crown, reducing wind resistance and stress from wide-spreading, heavy branches By permission of Dorling Kindersley Limited

tree which may have previously been obscured. ***Crown reduction*** reduces the size of the crown by either removing the tips of most of the branches all around the sides of the tree or all over the canopy. It is performed to reduce the spread of the tree, often in restricted
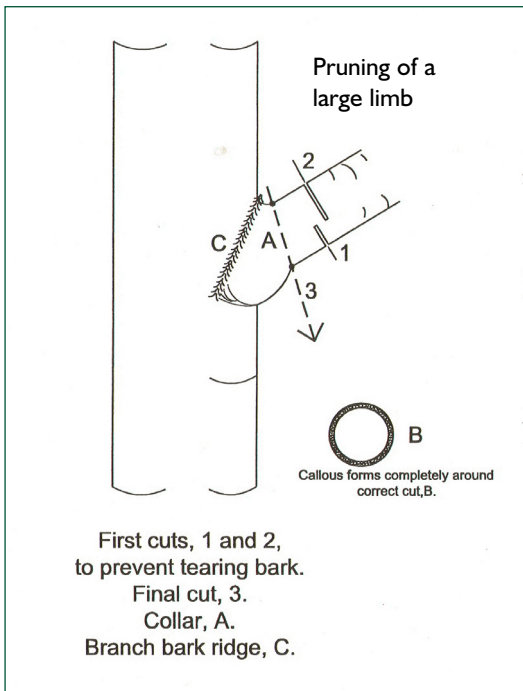

Crown Lifting

Sections or all of some lower branches are removed to create more room below the tree, for example to allow a bus to pass freely below or to expose a street light that has become hidden in the branches
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situations. ***Crown thinning*** aims to thin the canopy, possibly due to a congested branch system, allowing more light into the tree and consequently to shrubs or plants beneath it. Crossing and dead branches are removed at the same time. The correct way to prune a large limb is illustrated over the page. Cuts are made to ensure minimal damage is caused to the tree avoiding snags or flush cutting.
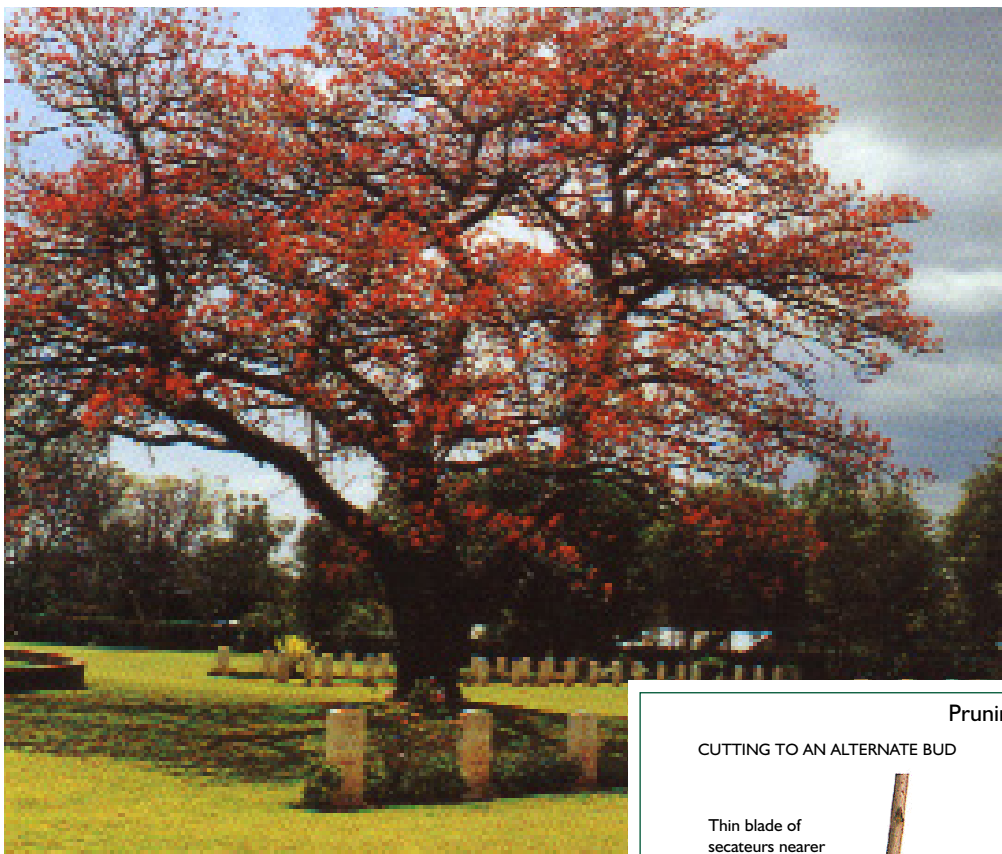
Pollarding must start when the tree is young and describes the practice of annually or regularly pruning branches back to a framework (see illustration on last page). Plane trees in the town of Aix en Provence, France or Lagerstroemia indica trees in northern Italy are regularly pruned in this way. ***Lopping*** or ***topping*** are

Pruning of a large limb

First cuts, 1 and 2, to prevent tearing bark.
Final cut, 3.
Collar, A.
Branch bark ridge, C.

Callous forms completely around correct cut, B.
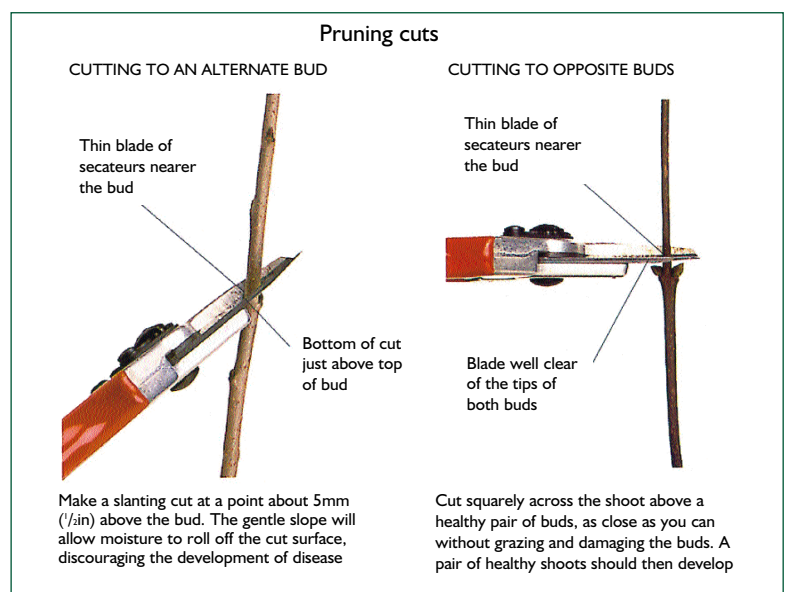
By permission of Alex Shigo, Tree Basics

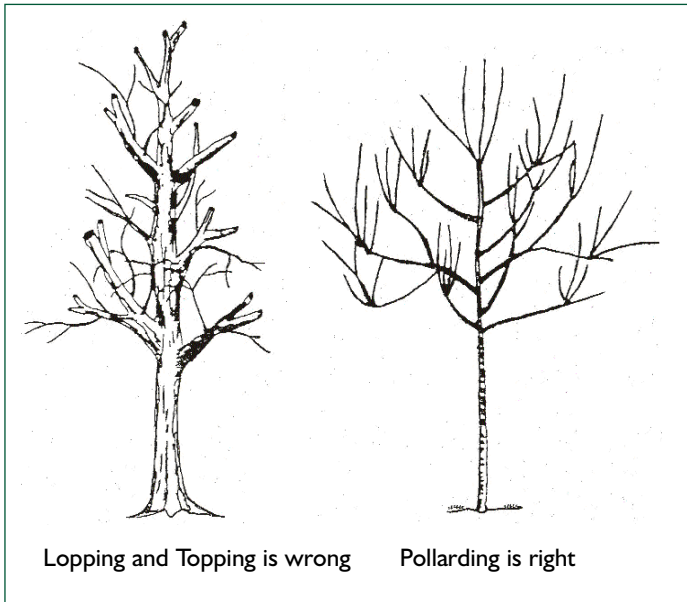*above: Fastigiate yew planting at Hersin Communal Cemetery Extension*

left: The beautiful Erythrina abyssinica tree at Nanyuki War Cemetery, Kenya

often confused with pollarding which is a sound and good arboricultural practice. The practice of lopping or topping is not recommended and often results in an ugly and unsightly tree as a consequence. It is often done on trees which have 'become too large', the problem having originated by poor species selection at the beginning. See illustrations over the page.

Pruning cuts

CUTTING TO AN ALTERNATE BUD

Thin blade of secateurs nearer the bud

Bottom of cut just above top of bud

Make a slanting cut at a point about 5mm ('/2in) above the bud. The gentle slope will allow moisture to roll off the cut surface, discouraging the development of disease

CUTTING TO OPPOSITE BUDS

Thin blade of secateurs nearer the bud

Blade well clear of the tips of both buds

Cut squarely across the shoot above a healthy pair of buds, as close as you can without grazing and damaging the buds. A pair of healthy shoots should then develop

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Lopping and Topping is wrong   Pollarding is right

Renovation, Replanting and Recycling

After the First World War much planting was done in the mid 1920s and many of our oldest trees date from this period. The devastation inflicted by the war brought a need to recreate a green landscape in the shortest time possible. There were far fewer cultivars to choose from then but earlier selections were made from those trees which could withstand severe exposure of a northern European climate. Deciduous trees such as Acer campestre, Betula, Carpinus, Crataegus, Fraxinus, Sorbus (aria and aucuparia) and Tilia were probably the favoured few. Taxus baccata (in its Fastigiata form) long associated with cemetery landscapes, Pinus nigra and Thuja were hardy conifers also frequently used.

Cypresses (Cupressus sempervirens 'Stricta') were a familiar sight in the countries bordering the Mediterranean and known for their association with cemeteries and it also became one of the more common trees for cemetery landscaping from northern Italy to the Middle East, as the yew was in colder, northern Europe.

The passage of time inevitably meant many of the earliest plantings, which were rather dense, needed thinning. Much of this was started in the 1980s in earnest, but work did begin before when considered necessary. Periodically all of the trees in a cemetery may decline, reaching the end of their useful life within an often restricted space in which to flourish. They will need to be removed and new trees chosen suited to the present growing conditions which may, in certain circumstances, be quite different to what they were when the trees were first planted. Dying trees are normally removed with their stumps especially if some have succumbed to fungal infections, otherwise the stumps are ground in-situ. Infected wood is burnt and the rest is chipped and shredded to be composted and returned to the soil at a later date. The Commonwealth War Graves Commission has an environmental policy and is committed to achieving environmental best practise throughout its activities wherever this is practicable. One of its objectives, is to maximise environmentally sound waste reuse and recycling . It is the aim of the Commonwealth War Graves Commission as far as practicable, to eliminate green waste disposal in its operations throughout the world by composting and recycling plant waste.

In 1996 a programme of recycling commenced with the aim of reducing disposal and eliminating burning. Challenging targets were set for different regions and good progress has been made with many regions reaching a target of 70%-80% of plant waste now being recycled.

Beirut War Cemetery before and . . . . . .

. . . . . . after removal of cypresses

TREES USED IN UNITED KINGDOM

Acer capillipes

Acer platanoides 'Crimson King'

Acer pseudoplatanus

Acer rubrum 'Scanlon'

Acer rubrum 'Schlesingeri'

Acer saccharinum

Aesculus hippocastanum

Betula costata

Betula nigra

Betula papyrifera

Betula pendula

Betula pendula 'Youngii'

Betula utilis var. jacquemontii 'Grayswood Ghost'

Carpinus betulus 'Fastigiata'

Carya ovata

Chamaecyparis lawsoniana 'Fletcheri'

Corylus colurna

Crataegus laevigata 'Paul's Scarlet'

Cryptomeria japonica 'Elegans'

Cupressus macrocarpa

Fagus sylvatica 'Dawyck'

Gleditsia triacanthos 'Sunburst'

Liriodendron tulipifera

Magnolia x soulangiana 'Rustica Rubra'

Malus transitoria

Malus x magdeburgensis

Malus x purpurea 'Eleyi'

Ocyparis leylandii 'Castlewellan'
       syn. x Cupressocyparis leylandii 'Castlewellan'

Populus nigra 'Italica'

Prunus avium

Prunus avium 'Plena'

Prunus 'Hisakura'

Prunus lusitanica

Prunus padus 'Colorata'

Prunus virginiana 'Schubert'

Quercus castaneifolia 'Green Spire'

Quercus frainetto 'Hungarian Crown'

Quercus robur

Robinia hispida 'Rosea'

Sorbus 'Joseph Rock'

Sorbus aria 'Lutescens'

Sorbus aria 'Majestica'

Sorbus aucuparia

Sorbus aucuparia 'Beissneri'

Sorbus intermedia

Sorbus x thuringiaca 'Fastigiata'

Taxus baccata 'Fastigiata'

TREES USED IN THE MEDITERRANEAN

Acacia baileyana

Acacia dealbata

Acer campestre

Acer japonicum

Acer macrophyllum

Acer negundo 'Variegatum'

Acer palmatum

Acer platanoides 'Columnare'

Acer pseudoplatanus

Acer saccharinum

Acer saccharinum 'Laciniatum'

Aesculus x carnea 'Briotii'

Albizia grandibracteata

Albizia julibrissin

Albizia lebbek

Alnus glutinosa 'Imperialis'

Amelanchier lamarckii

Arbutus andrachne

Arbutus unedo

Betula pendula 'Dalecarlica'

Betula utilis var. jacquemontii

Carpinus betulus

Carpinus betulus 'Columnaris'

Carpinus betulus 'Fastigiata'

Casuarina cunninghamiana

Casuarina equisetifolia

Catalpa bignonioides

Cedrus deodara

Cedrus libani

Celtis australis

Ceratonia siliqua

Cercis siliquastrum

Chamaerops humilis

Chorisia crispiflora

Chorisia ventricosa

Cornus mas

Cornus nuttallii.

Crytomeria japonica

Cupressus arizonica

Cupressus funebris

Cupressus sempervirens

Cupressus sempervirens 'Stricta'

Elaeagnus angustifolia

Eucalyptus camaldulensis

Eucalyptus ficifolia

Eucalyptus johnstonii

Eucalyptus lansdowneana subsp. lansdowneana

Eucalyptus platypus

Fagus sylvatica 'Atropurpurea'

Ficus carica

Ficus nitida

Fraxinus ornus

Ginkgo biloba

Grevillea robusta

Jacaranda mimosifolia

Juglans nigra

Juniperus chinensis

Koelreuteria paniculata

Laburnum vossii

Lagerstroemia indica

Lagunaria patersonii

Laurus nobilis

Ligustrum lucidum

Ligustrum lucidum 'Variegatum'

Liquidambar styraciflua

Liriodendron tulipifera

Maclura pomifera

Magnolia grandiflora

Malus floribunda

Malus prunifolia

Malus tschonoskii

Melia azedarach

Metrosideros excelsa

Morus alba

Trees used in the Mediterranean continued

Morus alba 'Pendula'
Myrtus communis
Olea europaea
Phoenix canariensis
Phoenix dactylifera
Pinus brutia
Pinus halepensis
Pinus nigra
Pinus pinaster
Pinus pinea
Pistacia atlantica
Platanus orientalis
Platanus x hispanica
Podocarpus falcatus
Podocarpus rumphi
Populus nigra 'Italica'
Prunus x schmittii
Prunus cerasifera
Prunus cerasifera 'Pissardii'
Prunus 'Kanzan'
Prunus lusitanica
Prunus padus
Prunus x subhirtella 'Autumnalis Rosea'
Pyrus sp.
Quercus cerris
Quercus coccifera
Quercus frainetto
Quercus ilex
Quercus macrolepis syn. aegilops
Quercus macrolepsis

Quercus pubescens
Querus robur 'Fastigiata'
Quercus rubra
Quercus suber
Robinia hispida 'Rosea'
Robinia pseudoacacia
Robinia pseudoacacia 'Frisia'
Robinia pseudoacacia 'Inermis'
Robinia pseudoacacia 'Umbraculifera'
Salix chilensis (syn. humboltiana)
Schinus molle
Sophora japonica
Sophora japonica 'Pendula'
Sophora secundiflora
Sorbus aria
Sorbus aucuparia
Tamarix sp.
Taxus baccata 'Fastigiata'
Thevetia peruviana
Thevetia thevetioides
Thuja occidentalis
Thuja occidentalis 'Spiralis'
Thuja orientalis
Thuja orientalis 'Compacta'
Thuja plicata
Tilia x euchlora
Tilia x europaea
Trachycarpus fortunei
Washingtonia filifera

TREES USED IN BELGIUM, HOLLAND AND GERMANY

Acer campestre
Acer campestre 'Elsryk'
Acer davidii
Acer griseum
Acer heldreichii
Acer japonicum
Acer lobelii
Acer opalus
Acer palmatum
Acer palmatum 'Atropurpureum'
Acer pensylvanicum
Acer platanoides
Acer platanoides 'Crimson King'
Acer platanoides 'Drummondii'
Acer platanoides 'Globosum'
Acer platanoides 'Schwedleri'
Acer pseudoplatanus
Acer pseudoplatanus 'Atropurpureum'
Acer rubrum
Acer saccharinum
Acer saccharinum 'Laciniata Wieri'
Acer saccharinum 'Pyramidale'
Aesculus hippocastanum
Aesculus hippocastanum 'Baumannii'
Aesculus indica 'Sydney Pearce'
Aesculus x carnea
Aesculus x carnea 'Briotii'
Alnus cordata
Alnus glutinosa
Alnus glutinosa 'Imperialis'
Alnus incana
Betula ermanii
Betula papyrifera
Betula pendula
Betula pendula 'Dalecarlica'
Betula pendula 'Purpurea'
Betula pendula 'Tristis'

Betula pendula 'Youngii'
Betula utilis
Betula utilis var. jacquemontii
Carpinus betulus
Carpinus betulus 'Fastigiata'
Castanea sativa
Catalpa bignonioides
Cedrus atlantica
Cedrus atlantica 'Glauca Group'
Cedrus libani
Cercis siliquastrum
Chamaecyparis lawsoniana
Chamaecyparis lawsoniana 'Allumii'
Chamaecyparis lawsoniana 'Columnaris'
Chamaecyparis lawsoniana 'Erecta Viridis'
Chamaecyparis lawsoniana 'Lanei'
Chamaecyparis lawsoniana 'Stewartii'
Chamaecyparis lawsoniana 'Wisellii'
Chamaecyparis nootkatensis
Chamaecyparis nootkatensis 'Pendula'
Cornus kousa
Corylus colurna
Crataegus coccinea
Crataegus crus-galli
Crataegus laevigata
Crataegus laevigata 'Paul's Scarlet'
Crataegus laevigata 'Plena'
Crataegus orientalis
Crataegus persimilis 'Prunifolia'
Crataegus x lavalleei
Crataegus x lavallei 'Carrierei'
Fagus sylvatica
Fagus sylvatica 'Asplenifolia'
Fagus sylvatica 'Atropurpureum'
Fagus sylvatica 'Dawyck'
Fagus sylvatica 'Pendula'
Fagus sylvatica 'Purpurea Tricolor'

Trees used in Belgium, Holland and Germany continued

Fagus sylvatica 'Tortuosa Purpurea'
Fagus sylvatica f. tortuosa
Fraxinus angustifolia
Fraxinus angustifolia 'Raywood'
Fraxinus angustifolia subsp. oxycarpa
Fraxinus excelsior
Fraxinus excelsior 'Jaspidea'
Fraxinus ornus
Gingko biloba
Gleditsia triacanthos
Juglans regia
Larix decidua
Liquidambar styraciflua
Liquidambar styraciflua 'Lane Roberts'
Liriodendron tulipifera
Liriodendron tulipifera 'Fastigiatum'
Magnolia soulangeana
Magnolia soulangeana 'Picture'
Magnolia soulangeana 'Rustica Rubra'
Malus baccata
Malus floribunda
Malus toringo
Malus transitoria
Malus tschonoskii
Metasequoia glyptostroboides
Ocyparis leylandii 'Castlewellan'
      syn. x Cupressocyparis leylandii 'Castlewellan'
Parrotia persica
Paulownia tomentosa
Picea
Pinus nigra
Pinus nigra subsp. nigra
Pinus sylvestris
Platanus x hispanica
Populus canescens
Populus nigra
Populus nigra 'Italica'

Populus simonii
Populus tremula
Populus tremula 'Erecta'
Prunus avium
Prunus avium 'Plena'
Prunus cerasifera
Prunus cerasifera 'Pissardii'
Prunus cerasus
Prunus lusitanica
Prunus maackii 'Amber Beauty'
Prunus padus
Prunus padus 'Watereri'
Prunus padus 'Colorata'
Prunus sargentii
Prunus sargentii 'Rancho'
Prunus serrula
Prunus serrulata
Prunus serrulata 'Choshu-hizakura'
Prunus serrulata 'Hatazakura'
Prunus x juddii
Prunus x juddii 'Kanzan'
Pterocarya fraxinifolia
Pyrus calleryana
Pyrus calleryana 'Chanticleer'
Pyrus nivalis
Quercus americana
Quercus cerris
Quercus coccinea
Quercus frainetto
Quercus ilex
Quercus palustris
Quercus robur
Quercus robur 'Fastigiata Koster'
Quercus robur 'Fastigiata'
Quercus rubra
Robinia pseudoacacia
Robinia pseudoacacia 'Frisia'

Trees used in Belgium, Holland and Germany continued

Salix alba
Salix alba 'Tristis'
Salix alba var. sericea
Salix alba var. vitellina 'Britzensis'
Salix babylonica
Salix exigua
Salix x sepulcralis
Salix x sepulcralis var. chrysocoma
Sequoiadendron giganteum
Sorbus aria
Sorbus aria 'Lutescens'
Sorbus aria 'Magnifica'
Sorbus aria 'Majestica'
Sorbus aucuparia
Sorbus aucuparia 'Beissneri'
Sorbus aucuparia 'Joseph Rock'
Sorbus aucuparia 'Sheerwater Seedling'
Sorbus commixta
Sorbus commixta 'Embley'
Sorbus hybrida
Sorbus hybrida 'Gibbsii'
Sorbus intermedia
Sorbus intermedia 'Brouwers'
Sorbus latifolia
Sorbus x thuringiaca 'Fastigiata'

Sorbus x intermedia
Sorbus 'Wilfrid Fox'
Taxodium distichum
Taxus baccata
Taxus baccata 'Fastigiata Aurea'
Taxus baccata 'Fastigiata Aureomarginata'
Taxus baccata 'Fastigiata Robusta'
Taxus baccata 'Fastigiata'
Thuja occidentalis
Thuja plicata
Thuja plicata 'Dura'
Thuja plicata 'Zebrina'
Tilia 'Petiolaris'
Tilia americana
Tilia americana 'Fastigiata'
Tilia cordata
Tilia cordata 'Green Spire'
Tilia platyphyllos
Tilia platyphyllos 'Fastigiata'
Tilia tomentosa
Tilia x euchlora
Tilia x europaea
Ulmus hollandica
Ulmus x hollandica 'Lobel'

TREES USED IN FRANCE

Abies alba
Abies bracteata
Abies cephalonica
Abies concolor
Abies concolor 'var lowiana'
Abies grandis
Abies homolepis
Abies nordmanniana
Abies numidica
Abies procera
Abies veitchii
Acacia dealbata
Acer campestre
Acer campestre 'Nanum'
Acer capillipes
Acer cappadocicum
Acer cappadocicum 'Rubrum'
Acer davidii
Acer heldreichii
Acer hersii
Acer macrophyllum
Acer negundo
Acer nikoense
Acer palmatum
Acer pensylvanicum
Acer platanoides
Acer platanoides 'Columnare'
Acer platanoides 'Reitenbachii'
Acer platanoides 'Schwedleri'
Acer pseudoplatanus
Acer pseudoplatanus 'Atorpurpureum'
Acer pseudoplatanus 'Brilliantissimum'
Acer pseudoplatanus 'Worleii'
Acer rubrum
Acer rubrum 'Scanlon'
Acer rubrum 'Schlesingeri'
Acer saccharinum
Acer saccharinum 'Fastigiata'
Acer saccharinum 'Laciniatum'

Acer saccharinum 'Pyramidale'
Acer saccharum
Acer velutinum
Aesculus californica
Aesculus x carnea
Aesculus x carnea 'Briotii'
Aesculus turbinata
Aesculus flava
Aesculus hippocastanum
Aesculus hippocastanum 'Baumannii'
Aesculus indica
Aesculus neglecta
Ailanthus altissima
Alnus cordata
Alnus glutinosa
Alnus glutinosa 'Imperialis'
Alnus glutinosa 'Imperialis Laciniata'
Alnus incana
Alnus incana 'Aurea'
Alnus incana 'Laciniata'
Alnus rubra
Alnus subcordata
Amelanchier canadensis
Amelanchier lamarckii
Araucaria araucana
Betula costata
Betula ermanii
Betula maximowicziana
Betula nigra
Betula papyrifera
Betula pendula
Betula pendula 'Dalecarlica'
Betula pendula 'Fastigiata'
Betula pendula 'Verrucosa'
Betula pendula 'Youngii'
Betula pubescens
Betula tristis 'Pendula'
Betula utilis
Betula utilis 'Jermyns'

Trees used in France continued

Betula utilis var. jacquemontii

Betula verrucosa

Betula verrucosa 'Pendula'

Carpinus betulus

Carpinus betulus 'Columnaris'

Carpinus betulus 'Fastigiata'

Carpinus betulus 'Frans Fontaine'

Carpinus betulus 'Pyramidalis'

Carya cordiformis

Carya ovata

Carya tomentosa

Castanea sativa

Catalpa erubescens

Catalpa bignonioides

Cedrus atlantica

Cedrus deodara

Cedrus libani

Cercidiphyllum japonicum

Cercis siliquastrum

Chamaecyparis lawsoniana

Chamaecyparis lawsoniana 'Allumii'

Chamaecyparis lawsoniana 'Columnaris'

Chamaecyparis lawsoniana 'Columnaris Glauca'

Chamaecyparis lawsoniana 'Ellwoodii'

Chamaecyparis lawsoniana 'Erecta'

Chamaecyparis lawsoniana 'Erecta Viridis'

Chamaecyparis lawsoniana 'Lanei'

Chamaecyparis lawsoniana 'Pembury Blue'

Chamaecyparis lawsoniana 'Stardust'

Chamaecyparis lawsoniana 'Stewartii'

Chamaecyparis lawsoniana 'Triomf Van Boskoop'

Chamaecyparis lawsoniana 'Wisellii'

Chamaecyparis nootkatensis 'Glauca'

Chamaecyparis obtusa

Chamaecyparis obtusa 'Nana Gracilis'

Chamaecyparis pisifera

Corylus colurna

Crataegus crus-galli

Crataegus grignonensis

Crataegus laciniata (syn. orientalis)

Crataegus laevigata

Crataegus laevigata 'Paul's Scarlet'

Crataegus laevigata 'Plena'

Crataegus laevigata 'Rosea Flore Plena'

Crataegus monogyna

Crataegus orientalis sanguinea

Crataegus persimilis 'Prunifolia'

Crataegus tanacetifolia

Crataegus x lavalleei

Crataegus x lavalleei 'Carreirei'

Cryptomeria japonica

Cupressus glabra

Cupressus lusitanica

Cupressus macrocarpa

Cupressus torulosa

Davidia involucrata

Eucalyptus gunnii

Eucalyptus niphophila

Eucalyptus nitens

Euodia hupehensis

Fagus sylvatica

Fagus sylvatica Cuprea Group

Fagus sylvatica 'Dawyck'

Fagus sylvatica 'Dawyck Gold'

Fagus sylvatica 'Fastigiata'

Fagus sylvatica 'Heterophylla'

Fagus sylvatica 'Purpurea' Tricolor

Fagus sylvatica 'Riversii'

Fagus sylvatica 'Zlatia'

Fraxinus americana

Fraxinus angustifolia

Fraxinus excelsior

Fraxinus excelsior 'Jaspidea'

Fraxinus excelsior 'Pendula'

Fraxinus excelsior 'Westhof's Glorie'

Fraxinus ornus

Fraxinus oxycarpa

Fraxinus oxycarpa 'Raywood'

Trees used in France continued

Ginkgo biloba

Gleditsia triacanthos

Ilex x altaclerensis 'Camelliifolia'

Ilex aquifolium

Ilex aquifolium 'Green Pillar'

Ilex aquifolium 'Pyramidalis'

Ilex aquifolium 'Silver Queen'

Ilex x altaclerensis

Juglans nigra

Juniperus chinensis

Koelreuteria paniculata

Laburnum watereri 'Vossii'

Larix decidua

Larix kaempferi

Larix x eurolepis

Laurus nobilis

Liquidambar formosana

Liquidambar styraciflua

Liriodendron tulipifera

Magnolia campbellii

Magnolia denudata

Magnolia grandiflora

Magnolia salicifolia

Magnolia soulangiana 'Rustica Rubra'

Magnolia sprengeri

Malus 'Aldenhamensis'

Malus 'Lemoinei'

Malus baccata

Malus 'Eleyi'

Malus floribunda

Malus hupehensis

Malus 'John Downie'

Malus moerlandsii 'Profusion'

Malus pumila

Malus pumila 'Montreal Beauty'

Malus 'Royalty'

Malus sieboldii

Malus spectabilis

Malus sylvestris

Malus tschonoskii

Malus 'Wisley crab'

Malus x atrosanguinea

Malus x purpurea

Malus x scheideckeri

Malus x zumi 'Golden Hornet'

Metasequoia glyptostroboides

Morus nigra

Nothofagus dombeyi

Nothofagus obliqua

Nothofagus procera

Nyssa sylvatica

Ocyparis leylandii 'Castlewellan'
       syn. x Cupressocyparis leylandii 'Castlewellan'

Paulownia imperialis

Paulownia tomentosa

Picea abies

Picea breweriana

Picea glauca 'Conica'

Picea omorika

Picea orientalis

Picea pungens Glauca Group

Picea sitchensis

Pinus ayacahuite

Pinus cembra

Pinus contorta

Pinus jeffreyi

Pinus leucodermis

Pinus muricata

Pinus nigra

Pinus nigra subsp. laricio

Pinus peuce

Pinus pinaster

Pinus pinea

Pinus ponderosa

Pinus radiata

Pinus wallichiana

Platanus orientalis

Platanus x hispanica

Trees used in France continued

Platycladus orientalis
Platycladus orientalis 'Elegantissima'
Platycladus orientalis 'Rheingold'
Podocarpus andinus
Populus alba
Populus alba 'Raket'
Populus 'Balsam Spire'
Populus nigra 'Italica'
Populus nigra var. betulifolia
Populus tremula
Populus tremuloides
Populus tremuloides 'Pendula'
Populus trichocarpa
Populus x canadensis 'Eugenei'
Populus x canadensis 'Robusta'
Populus x canadensis 'Serotina'
Populus x canescens
Prunus 'Amanogowa'
Prunus 'Hokusai'
Prunus 'Kanzan'
Prunus 'Pink Perfection'
Prunus 'Tai Haku'
Prunus avium
Prunus avium 'Plena'
Prunus cerasifera
Prunus cerasifera 'Pissardii'
Prunus cerasifera 'Rosea'
Prunus cerasus
Prunus dulcis
Prunus glandulosa 'Alba Plena'
Prunus lusitanica
Prunus maackii
Prunus padus
Prunus padus 'Albertii'
Prunus padus 'Colorata'
Prunus padus 'Watereri'
Prunus sargentii
Prunus serrula

Prunus serrulata
Prunus serrulata 'Shimidsu Zakura'
Prunus 'Snow Goose'
Prunus x subhirtella
Prunus x subhirtella 'Autumnalis'
Prunus subhirtella 'Pendula'
Prunus 'Mount Fuji' syn. 'Shirotae'
Prunus virginiana 'Schubert'
Prunus x schimittii
Prunus x yedoensis
Pseudotsuga menziesii
Pterocarya fraxinifolia
Pterocarya x rehderiana
Pyrus calleryana 'Chanticleer'
Pyrus communis
Pyrus salicifolia
Pyrus salicifolia 'Pendula'
Quercus acutissima
Quercus canariensis
Quercus castaneifolia
Quercus cerris
Quercus coccinea
Quercus frainetto
Quercus ilex
Quercus macranthera
Quercus palustris
Quercus petraea
Quercus phellos
Quercus robur
Quercus robur f. fastigiata
Quercus robusta f. fastigiata 'Koster'
Quercus robur 'Pectinata' (syn. 'Filicifolia')
Quercus rubra
Quercus x hispanica 'Lucombeana'
Rhododendron ponticum
Robinia hispida
Robinia pseudoacacia
Robinia pseudoacacia 'Frisia'

Trees used in France continued

Robinia pseudoacacia 'Pyramidalis'
Robinia x hillieri
Salix alba
Salix alba 'Liempde'
Salix alba var. caerulea
Salix babylonica var. pekinensis 'Tortuosa'
Salix caprea
Salix daphnoides
Salix fragilis
Salix pentandra
Salix x sepulcralis 'Chrysocoma'
Sequoia sempervirens
Sequoiadendron giganteum
Sophora japonica
Sorbus alnifolia
Sorbus aria
Sorbus aria 'Lutescens'
Sorbus aria 'Majestica'
Sorbus aucuparia
Sorbus aucuparia 'Aspleniifolia'
Sorbus aucuparia 'Beissneri'
Sorbus aucuparia 'Dirkenii'
Sorbus aucuparia 'Fastigiata'
Sorbus aucuparia 'Sheerwater Seedling'
Sorbus cashmiriana
Sorbus commixta 'Embley'
Sorbus cuspidata (syn. vestita)
Sorbus domestica
Sorbus folgneri
Sorbus hupehensis
Sorbus intermedia
Sorbus 'Joseph Rock'
Sorbus 'Leonard Spencer'
Sorbus sargentiana
Sorbus thibetica 'John Mitchell'
Sorbus x thuringiaca
Sorbus torminalis
Sorbus vilmorinii

Sorbus 'Wilfrid Fox'
Taxodium distichum
Taxodium distichum var. imbricatum
Taxus baccata
Taxus baccata Aurea Group
Taxus baccata 'Cavendishii'
Taxus baccata 'Erecta'
Taxus baccata 'Fastigiata'
Thuja occidentalis
Thuja occidentalis 'Malonyana'
Thuja occidentalis 'Pyramidalis Compacta'
Thuja plicata
Thuja plicata 'Atrovirens'
Thuja plicata 'Aurea'
Thuja plicata 'Emerald'
Thujopsis dolbrata
Tilia cordata
Tilia dasystyla
Tilia mongolica
Tilia 'Petiolaris'
Tilia platyphyllos
Tilia platyphyllos 'Fastigiata'
Tilia tomentosa
Tilia x euchlora
Tilia x europaea
Tsuga canadensis
Tsuga caroliniana
Tsuga heterophylla
Tsuga mertensiana
Ulmus carpinifolia
Ulmus glabra
Ulmus glabra 'Camperdownii'
Ulmus minor 'Variegata'
Ulmus parvifolia
Ulmus procera
Ulmus pumila
Ulmus x vegeta'
Zelkova serrata

TREES USED IN THE TROPICS

Acacia melanoxylon

Acacia nilotica

Acacia saligna

Acacia seyal

Acacia tortilis

Albizia gummifera

Albizia saman

Albizia schimperiana

Amherstia nobilis

Araucaria columnalis

Arecastrum romanzoffianum

Azadirachta indica

Bauhinia blakeana

Bauhinia monandra

Bauhinia purpurea

Bauhinia racemosa

Bombax ceiba

Bombax malabaricum

Brachychiton acerifolium

Brachylaena huillensis

Callistemon citrinus

Calodendrum capensis

Cananga odorata

Caryota mitis

Cassia fistula

Cassia grandis

Cassia nodosa

Cassia siamea

Cassia spectabilis

Cassia grandis

Chrysalidocarpus lutescens

Cinnamomum iners

Cinnamomum zeylanicum

Cocos nucifera

Cordia sebestena

Croton megalocarpus

Cyrtostachys renda

Dalbergia sissoo

Delonix regia

Dombeya acutangula

Elaeis guineensis

Elaeodendron sp.

Enterolobium contortisiliquum

Erythrina abyssinica

Erythrina indica

Euphorbia candelabrum

Fagraea fragrans

Ficus benghalensis

Ficus lutea

Ficus retusa

Ficus robusta

Ficus sycamorus

Filicium decipiens

Grevillea banksii

Guaiacum officinale

Ilex sp.

Ipomoea arborescens

Lagerstroemia indica

Trees used in the Tropics continued

Lagerstroemia macrocarpa var. reflexa

Lagerstroemia speciosa

Mamitoa browneoides

Mangifera indica

Markhamia lutea

Mesua ferrea

Michelia alba

Michelia champaca

Milingtonia hortensis

Mimusops elengi

Peltophorum pterocarpum syn. ferrugineum

Phoenix reclinata

Phoenix robellini

Picrasma ailanthoides

Plumeria alba

Plumeria rubra

Polyalthia longifolia 'Pendula'

Pritchardia pacifica

Pterocarpus macrocarpus

Roystonea elata

Roystonea regia

Spathodea campanulata

Sterculia acerifolia (syn. Brachychiton acerifolius)

Swietenia mahogani

Syagrus romanzoffiana (syn. Arecastrum romanzoffianum)

Tabebuia rosea

Tamarindus indicus

Warszewiczia coccinea