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**Management of the plant collection
at the Eastwoodhill Arboretum**

Volume II: Appendices

**A thesis presented in partial
fulfilment of the requirements
for the degree of**

DOCTOR OF PHILOSOPHY

**in Horticultural Science at
Massey University.**

Marion Brenda MacKay

1996

Abstract

Eastwoodhill Arboretum at Ngatapa, near Gisborne, New Zealand, was developed by the late William Douglas Cook (1884-1967). Between 1920 and 1960, Cook planted an extensive range of exotic woody trees, shrubs and climbers throughout 65 hectares of the 130 hectare property. Considered by many to be an important collection in New Zealand, the Arboretum deteriorated during Cook's latter years due to diminishing time and resources for maintenance. An Act of Parliament in 1975 established the Eastwoodhill Trust Board and empowered them to 'maintain and develop the property as an arboretum'. Under the Board's direction, a clearing strategy was initiated to solve the problems of overcrowding and poor plant condition in the Arboretum and to establish a catalogue of the collection.

To meet their obligations under the Act, the Trust Board had to focus their management on the plant collection. The biological value of the Arboretum had to be sustained, particularly with respect to issues of conservation and biodiversity. The visual value of the Arboretum, an important factor for attracting public support, had deteriorated and required intervention. Moreover, as the landscape of the Arboretum was not a natural system and lacked self-regulating processes for renewal of important plants or plant groupings, systematic management was needed to sustain the collection within this human-made landscape. The Trust Board's efforts to address these issues were hampered by a lack of resources and appropriate data.

This research reports the results of an extensive landscape management study of the collection and develops and characterises the data and management processes needed for long term management of the biological value of the Arboretum. Although management frameworks and processes for landscape management have been reported in the literature, most operate at scales inappropriate for single sites and none focus upon the human-made landscape of an arboretum. Thus, while common characteristics of these processes (e.g. inventory, evaluation, development of goals and strategies) provided a basic framework, their application to an arboretum required development.

A complete and current inventory of the plant collection was made. The Arboretum was mapped at 1:200 using a grid square method, and a catalogue formed listing every plant in the collection. A second catalogue recorded the extensive range of accessions that had previously been in the collection but which no longer existed. In addition, about 1200 herbarium samples were made, two potential database formats developed for the data, and a record of management history formulated.

Although the inventory showed that the collection was extensive, its importance could only be established through an evaluation. As an extensive literature search failed to locate a suitable

process for evaluating a plant collection on a single site, a novel process was proposed that evaluated the site using two key concepts, significance and condition, and linked this evaluation to the goals of the Arboretum. Significance, a measure of the importance of a site according to selected landscape values, was determined using various indicators of diversity and rarity. Analysis revealed that Eastwoodhill was the most significant collection of its type in New Zealand, with 1666 species and 962 cultivars of trees, shrubs and climbers, of which 73% were of northern hemisphere origin and 41% of Asian origin. Eighty percent of species and cultivars in the collection were not readily available from commercial sources in New Zealand, and 102 species were on world conservation lists. These data were used to identify the most significant genera in the collection. The second concept, condition, measures health (in the broadest sense) of the site using such indicators as age, density, and maturity. Measurements of age and density showed that condition of the collection was below optimum. Moreover, plant death, particularly of short lived species, had changed the composition of the collection to the extent that about 53% of the plants collected by Cook no longer existed.

The evaluation process also revealed that while the collection had the potential to meet existing goals, condition was not ideal and unless it was improved significance could be lost. This interaction between significance and condition led to the proposal of a new concept for 'landscape category' as a framework for describing the relationship between the two factors. Four categories, each requiring different management actions, were derived and discussed. The mission of the arboretum indicates which category is required, while the evaluation data show which category actually applies. To achieve the role of an arboretum in the long term Eastwoodhill needs to be a category one landscape (i.e. significant and in good condition), but is currently in category two (i.e. significant but with condition below par). This discrepancy between actual category and required category indicated the subsequent management action necessary to bring the Arboretum to category one status.

The second new concept arising from this research was developed as part of the processing stage of the evaluation. As Eastwoodhill is an arboretum, and biological value underpins its primary purpose, both biological significance and condition must be excellent. But vegetation also has aesthetic values, particularly visual qualities, and these play an essential role in many of the human values associated with arboreta. Landscape management paradigms were established to provide a framework for managing the balance between biological and visual value of a site. The paradigms describe a hierarchy for managing the interplay between biological and visual values, and can be configured for either value in the primary position. This concept provides a framework for integrating values and prioritising subsequent management actions. The evaluation data,

landscape category, and landscape management paradigms were used to propose management actions and priorities for those actions.

Three workshops were conducted during the course of this research to address a series of collection management issues. Conducted using a systematic management approach, the workshops involved a panel of experts using the data from inventory and evaluation to prepare three reports outlining plans and decisions for short and long term management of the plant collection. An important long term outcome was an assessment of the collection using botanical and aesthetic rating scales to determine the intrinsic importance of the genera in the collection. These data were used to identify the 'key' genera that would form the focus of collection development and to determine roles for the Arboretum. Detailed operational plans for three parks and two key genera within the Arboretum were also prepared during the workshops. Park plans covered objectives for the park, composition of the park, botanical and aesthetic importance of plants in the park, and future development strategies. Genus plans covered composition of that genus in the collection, status of key plants in the field, and future development policies. A key feature of park and genus plans was a system of rating scales used to determine plant status and prioritise management decisions. Development of park and genus plans led to a proposal for a method for vegetation management in human-made landscapes.

Overall synthesis of the management process led to a proposal for a model for management of a plant collection that could be applied to Eastwoodhill and other plant collections. Understanding of the underpinning principles allows the model to be readily adapted for application to other landscapes.

keywords: arboretum management, botanic garden management, landscape evaluation, landscape inventory, landscape management, plant collection, vegetation management.

Acknowledgements

I am very appreciative of the efforts of my supervisors in helping me complete this work. Dr David Chalmers was an enthusiastic participant in the workshops, and provided valuable editorial comment on early drafts of this thesis. In more recent times Dr Tony Jackman and Professor Errol Hewett made themselves available for consultation and I am grateful for their patient, thorough and timely edits of this work.

I wish to thank the Department of Plant Science and Massey University for the opportunity to undertake postgraduate study. I am particularly grateful to Professor Robert Anderson, Dean of Agricultural and Horticultural Sciences, for encouraging me to undertake the early visits to Eastwoodhill that led to this work being started.

The Eastwoodhill Trust Board and associates played a key role in this work. I thank them for making the Arboretum and its facilities available for this study, and for their willingness to support and participate in the workshops. The curator, Mr Clapperton, provided hospitality on many occasions and assisted with information and frequent discussions about the Arboretum.

This work would not have been possible without the funding support provided by the Massey University Agricultural Research Foundation, the C. Alma Baker Trust, the New Zealand Lottery Board, the Massey University Research Fund and the Faculty of Agricultural and Horticultural Sciences. I am grateful to these bodies for their support.

Studying the plant collection at Eastwoodhill required considerable field work and regular visits to Gisborne. I am very grateful to Stuart and Jackie Davis, for extending their hospitality to me on numerous occasions and allowing me to use their home as a base for my field work.

My family and friends have continued to give moral support to this endeavour. My parents, and my friends Pam Howell and Elizabeth Patching, deserve special mention for always being available with time to listen and give encouragement.

Finally, and most of all, my husband Bruce deserves the highest praise for his unlimited dedication and patience over many years. He gave energy, drive, and generosity of spirit that helped me complete this work and I am deeply grateful to him for his continued encouragement and contribution throughout this study.

Table of contents: Volume One
CHAPTER 1: INTRODUCTION

1.1	The Eastwoodhill Arboretum	3
1.1.1	Douglas Cook and the creation of the Eastwoodhill Arboretum	4
1.1.2	Formation of the Trust Board	15
1.1.3	This research	17
1.2	Landscapes	17
1.2.1	Components of landscapes and the landscape continuum	18
1.2.2	Factors that shape landscapes	20
1.2.2.1	Natural processes	20
1.2.2.2	Human processes	21
1.2.3	Landscape values and their management	23
1.2.4	Goals of landscape management	25
1.2.5	Scope, scale and the role of the manager	29
1.3	Botanic gardens, arboreta and plant collections	30
1.3.1	Roles and functions	30
1.3.2	The scientific role	32
1.3.3	The educational and recreational role	34
1.3.4	Botanic gardens and plant collections in New Zealand	35
1.4	Managing landscapes	36
1.4.1	Management theory	36
1.4.2	Management skills	38
1.4.3	Management functions	39
1.4.4	Are landscapes managed?	40
1.4.5	Landscape management processes	41
1.4.6	Managing arboreta and the Eastwoodhill Arboretum	43

CHAPTER 2: DEVELOPING AN INVENTORY OF THE PLANT COLLECTION AT THE EASTWOODHILL ARBORETUM

2.1	Introduction and review	49
2.1.1	Principles of inventory	50
2.1.2	Types of inventory	51
2.1.3	Components of an inventory: maps	52
2.1.4	Components of an inventory: plant files	55
2.1.4.1	Catalogue	55
2.1.4.2	Plant records	55
2.1.4.3	Reference numbers	56
2.1.4.4	Herbarium samples	57
2.1.5	Components of an inventory: written documents	57
2.1.6	Variables to record	57
2.1.7	Computerisation of records	59
2.1.8	Eastwoodhill Arboretum	60
2.2	Method	60
2.2.1	Maps and catalogue	60
2.2.2	The previous collection	62

2.2.3	Herbarium and photographs	63
2.2.4	Database	63
2.2.5	Arboretum management relating to the collection	63
2.3	Results and discussion	63
2.3.1	The collection	64
2.3.1.1	The 'previous' collection	67
2.3.1.2	The total collection	67
2.3.2	The records	68
2.3.2.1	Maps and catalogue of the current collection	68
2.3.2.2	The 'previous' collection	68
2.3.2.3	Database	70
2.3.2.4	Previous management of the collection	73
2.3.3	The method of inventory	74
2.3.3.1	Accuracy	74
2.3.3.2	Completeness	75
2.3.3.4	Recording protocols	76
2.3.3.5	Reference numbers	76
2.3.3.6	Variables recorded	77
2.3.3.7	The permanent record	77
2.3.4	Operation of the inventory	78
2.3.5	Application of inventory information in landscape management	80
2.4	Conclusion	83

CHAPTER 3: EVALUATION OF THE PLANT COLLECTION AT THE EASTWOODHILL ARBORETUM

3.1	Introduction and review	87
3.1.1	Principles of evaluation	89
3.1.1.1	Overall method	89
3.1.1.2	The measurement step: concepts	90
3.1.1.3	The processing step: conceptual skills	91
3.1.1.4	The processing step: practice	92
3.1.2	Other approaches and processes	93
3.1.3	Significance: understanding landscape values	97
3.1.3.1	Landscape values: Intrinsic biological values	97
3.1.3.2	Landscape values: Ascribed human values	98
3.1.3.3	Direct versus indirect values	103
3.1.3.4	Landscape values and economics	104
3.1.4	Significance: measuring values	106
3.1.5	Measuring biological value	109
3.1.6	Measuring and interpreting biological condition	114
3.1.7	Eastwoodhill Arboretum	116
3.2	Method	117
3.2.1	Introduction	117
3.2.2	Measuring significance of the collection: diversity	120
3.2.3	Measuring significance of the collection: rarity	120
3.2.3.1	Comparison with other collections	120
3.2.3.2	Rare and endangered species	121
3.2.3.3	Availability in trade	121

3.2.4	Measuring condition of the collection	121
3.2.5	Processing	121
3.3	Results and discussion part one: significance	122
3.3.1	Diversity	122
3.3.1.1	Composition	122
3.3.1.2	Distribution of major genera within the Arboretum	122
3.3.1.3	Geographic origin of plant material in the collection	126
3.3.1.4	Deciduous versus evergreen	129
3.3.2	Rarity	133
3.3.2.1	Comparison with other collections	133
3.3.2.2	Rare and endangered species	135
3.3.2.3	Availability of species and cultivars in the Eastwoodhill collection in commercial nurseries in New Zealand.	140
3.3.3	Developing a combined ranking for significance	147
3.3.4	Conclusion: significance and the fabric of the Arboretum	151
3.4	Results and discussion part two: condition	153
3.4.1	Condition	153
3.4.1.1	Age and stage of succession	153
3.4.1.2	Density and overcrowding	154
3.4.2	Change between 'total' and 'current' collections	157
3.4.3	Conclusion: condition and the need for urgent action	160
3.5	Results and discussion part three: processing	162
3.5.1	Processing: relating significance and condition to mission and goals	162
3.5.2	Processing: probable goals and priorities	164
3.6	Results and discussion part four: overall discussion	167
3.6.1	Managing significance and condition: proposal for 'landscape category'	167
3.6.2	Proposal for biological and visual management paradigms	171
3.6.3	Proposal for an evaluation methodology	173
3.7	Conclusion	175
CHAPTER 4: A PLANNING AND DECISION MAKING MECHANISM: THE WORKSHOPS		
4.1	Introduction and review	181
4.1.1	Planning	181
4.1.1.1	The mission and goals of an enterprise	183
4.1.1.2	Planning processes and types of plans	184
4.1.1.3	Strategic management	186
4.1.2	Collection planning at Eastwoodhill	188
4.1.3	Decision making	194
4.1.4	Organising a decision making group	198
4.1.4.1	Participants in decision making groups	198
4.1.4.2	Organising a decision making group: the meeting	199
4.1.4.3	Organising a decision making group: roles	199
4.1.5	Decision making for collection management at Eastwoodhill	200
4.2	Method	204
4.2.1	Formation of the workshop: participants and expertise	205

4.2.2	Organisation of the workshop	207
4.2.3	Decision making	211
4.3	Results and discussion	213
4.3.1	Workshop structure	214
4.3.1.1	Participants	214
4.3.1.2	Roles	216
4.3.2	Operation of the workshops	217
4.3.2.1	Planning the workshops	217
4.3.2.2	Programme	218
4.3.2.3	Decision making and data	219
4.3.2.4	Implementation of workshop outcomes	220
4.3.3	The workshops as a management strategy	221
4.3.3.1	Strengths: a possible framework for collection management	222
4.3.3.2	Weaknesses	225
4.3.3.3	Modifications	226
4.3.3.4	Workshops needed because of changes in the enterprise	228
4.3.3.5	Groups or individual decision makers	229
4.4	Conclusion	231

CHAPTER 5: USING THE WORKSHOP FOR COLLECTION MANAGEMENT PART ONE: LONG RANGE GOALS

5.1	Introduction	235
5.2	Method	236
5.2.1	Assessment of the collection	236
5.2.2	Role of the Arboretum and development of the collection	238
5.2.3	Development of the remaining 65 hectares of the property	238
5.3	Results and discussion	240
5.3.1	Establishing the present status of the collection	240
5.3.1.1	Assessment of the collection	240
5.3.1.2	Key genera	243
5.3.2	The role of the Arboretum	247
5.3.3	Goals for development of the collection	249
5.3.3.1	Development of the remaining 65 hectares	253
5.3.3.2	Key genera in the future	254
5.3.4	Critique of the method	257
5.3.5	Development of a strategic position	259
5.4	Conclusion	260

CHAPTER 6: USING THE WORKSHOP FOR COLLECTION MANAGEMENT PART TWO: PARK AND GENUS PLANS

6.1	Introduction and review	263
6.1.1	The need for deliberate management action to sustain vegetation in human-made landscapes	263
6.1.2	Knowledge needed in vegetation management	266
6.1.2.1	Understanding the life phases of a plant	266

6.1.2.2	Measuring plant status - rating scales	268
6.1.2.3	Understanding plant populations in human-made landscapes	277
6.1.2.4	Managing plant populations in human-made landscapes	277
6.1.3	A systematic approach to vegetation management	280
6.1.4	Eastwoodhill Arboretum	281
6.2	Method	282
6.2.1	Developing vegetation management plans	282
6.2.2	Rating scales to measure tree attributes	282
6.2.3	Application of the rating scales	285
6.2.4	Genus and park plans	286
6.2.4.1	Tree management exercises at the first workshop: a forerunner to the park and genus plans	286
6.2.4.2	Genus plans	287
6.2.4.3	Park plans	290
6.3	Results	295
6.3.1	Park plans	295
6.3.2	Genus plans	296
6.4	Discussion	297
6.4.1	Methodology for park and genus plans	297
6.4.2	A vegetation management framework: understanding and concepts	299
6.4.2.1	'When': vegetation management and plant performance	300
6.4.2.2	'Where': vegetation management and physical layout	303
6.4.3	A framework for vegetation management: process	305
6.5	Conclusion	309
CHAPTER 7: GENERAL DISCUSSION		
7.1	Introduction	313
7.2	Managing a plant collection: a model	313
7.2.1	Understanding management concepts	316
7.2.2	The management process: strategic position absent or under review	320
7.2.3	The management process: strategic position present	326
7.2.4	Application to other landscapes	327
7.2.5	Further developments	328
7.3	Eastwoodhill Arboretum and the future of its plant collection	329
7.3.1	Preview	329
7.3.2	Outcomes of this research	329
7.3.3	Future approaches: utilising this research for collection management	332
7.3.3.1	Opportunity: reviewing the purpose, mission and goals of landscape management.	333
7.3.3.2	Opportunity: reviewing systematic management approaches	333
7.3.3.3	Challenge: resolving issues relating to mission and strategic position	334
7.3.3.4	Opportunity: using a revised workshop method for collection management	336

7.3.3.5	Challenge: making best use of the workshop and decision making methods	337
7.3.3.6	Challenge: resources for collection management	338
7.3.4	A possible plan of action for the Trust Board	339
7.4	Conclusion	340
CHAPTER 8: BIBLIOGRAPHY		345

Table of contents: Volume II

APPENDICES

1	Catalogue of the 'current' collection.....	377
2	Grid map, maps of Pear Park, Orchard Hill and Basinhead.....	467
3	Catalogue of the 'previous' collection.....	475
4	Mapped distribution of major genera in the Arboretum.....	597
5	First workshop report.....	613
6	Second workshop report.....	629
7	Third workshop report.....	693
8	Collection assessment data.....	767

Introduction to Volume II

This volume contains the appendices that relate to the thesis 'Management of the plant collection at the Eastwoodhill Arboretum' which comprises Volume I. These appendices contain various archival data and documents that relate to the investigations that were carried out to complete the thesis.

Appendices 1, 2 and 3 are inventory documents for the collection and are discussed in Chapter 2 in Volume I.

Appendix 4 is part of the evaluation of the collection and relates to Chapter 3 in Volume I.

Appendices 5, 6 and 7 are the three workshop reports that were completed as part of this study and relate primarily to Chapter 4 in Volume I, but also to Chapters 5 and 6. These reports were written several years before this thesis was completed, and there are sometimes minor differences in detail between them and the main body of the thesis, e.g. numbers of species and cultivars in the collection may have changed slightly due to new data subsequent to the workshops. It should also be noted that, although the author was acting as workshop manager at the time, the workshop reports represent the consensus view of the workshop group, and not the view of the author.

Appendix 8 is the collection assessment data and relates to Chapter 5 in Volume I.

Catalogue of the current collection



Michelia doltsopa, Gardens, August 1987.

**EASTWOODHILL ARBORETUM
NGATAPA, GISBORNE**

Inventory Part One: The 'current' collection

CATALOGUE OF TREES, SHRUBS AND CLIMBERS

**Marion MacKay
Massey University, Palmerston North**

**First published 1989
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Eastwoodhill Publication No. 1

This catalogue is one of three parts which comprise the inventory for the plant collection at the Eastwoodhill Arboretum. This catalogue describes the current collection. Part two is the accompanying set of maps which show the location of each tree. Part three describes the additional plant material which was in the collection but is no longer present. These documents have been prepared following the completion of a comprehensive inventory of all plants at the Arboretum.

Acknowledgements

The author acknowledges the information provided by Mr G.W. Clapperton, Curator, Eastwoodhill, and Mr R.J. Berry, Hackfalls Arboretum, Tiniroto.

The preparation of this catalogue and the accompanying plan set was completed with the support of the Massey University Agricultural Research Foundation, the C.Alma.Baker Trust, and the New Zealand Lottery Board.

INTRODUCTION

This catalogue and the associated set of plans are the result of a three year study on the plant material at the Eastwoodhill Arboretum. This project is the founding study of a programme on botanical resources at the Arboretum, and in New Zealand, which has been initiated at the Department of Horticultural Science at Massey University.

Eastwoodhill is 35km from Gisborne in a relatively isolated rural area of undulating to steep hill country. The Arboretum encompasses 65 hectares, with another 65 hectares of land unplanted. The elevation at the Eastwoodhill homestead is 150m a.s.l. with higher ridges to the north and west. Latitude is 38 degrees 33 minutes south, and longitude 177 degrees 40 minutes east. Rainfall averages 1000mm annually. Frosts may be minus 4-7 degrees Celsius.¹

The Arboretum contains mostly northern hemisphere trees shrubs and climbers, approximately 2600 species and cultivars of plants, with about 8000 trees in all. Northern hemisphere plants make up 75% of the collection, 15% is southern hemisphere flora, 10% horticultural origin. A significant portion of the collection (42%) is of Asian origin.

The Arboretum was the life's work of Mr W.D.Cook (1884-1967), horticulturist, of Gisborne. Douglas Cook came to the property in 1910; he described it as virgin land of mixed grasses and covered in manuka scrub. In 1910 he planted radiata pine and eucalyptus for firewood and an orchard for home use. Many thousands of timber trees were planted on dry ridges and poor places. The framework for park planting included *Platanus orientalis*, *Acer pseudoplatanus*, *Acer platanoides*. He started with what he described as 'bits and pieces', but began planting in quantity in 1917 after returning unfit from World War 1. He was disturbed by what he had seen in Europe and was afraid that the north would destroy itself along with its trees. In 1922-1924 Douglas Cook travelled to England and visited gardens. "I loved the country scene in England and its beautiful parks and wondered how far I could get in the creation of a park in one lifetime. I determined to make a start." He began acquiring plants in earnest in about 1927 and continued to do so until the late 1950s. Glen Douglas was the last planting, in about 1960.

Although Mr Cook obtained some plants from New Zealand sources, the majority of the material came from overseas. The main supplier was Hillier and Sons of England. Over time Mr Cook imported about 5000 different species and cultivars of plants. Although only about half remain today, he had amassed a collection of trees unique in New Zealand.² In 1949 he wrote in the Royal Horticultural Society journal, "We hope in the very near future to be growing at Eastwoodhill practically every tree and shrub available in Britain." For his lifelong contribution to horticulture Douglas Cook was awarded the prestigious Veitch Memorial Medal.

In his latter years Mr Cook was anxious that his collection be preserved. Two years before Mr Cook's death Eastwoodhill was purchased by local businessman Mr H.B.Williams of Gisborne. In 1975, after the passing of the Eastwoodhill Trust Act, Mr Williams gifted the Arboretum to the newly formed Eastwoodhill Trust Board. In the initial years after Mr Cook's death investigation of the collection was done by Mr R.J. Berry of Gisborne. He was a member of the Trust Board and compiled information on the collection by way of a catalogue in 1976, revised in 1980 and 1982.

I became associated with the Arboretum from early 1986. At that time it was apparent that, for planning purposes, a detailed inventory of the collection was needed. The property had not been comprehensively mapped and the full extent of the collection was unknown. Each park within the arboretum was subjected to a detailed study involving field and laboratory work. Initially the only information available was the early work by Mr Berry, and some survey work undertaken about 20 years ago which covered the lower parks of the arboretum; latterly Mr Clapperton constructed a map of the property at 1:2000 from aerial photographs. Using this information as a base I formed plans for each park at a scale of 1:200. These show every tree plus physical features. The name for the tree is shown, its reference number, and the name of the person who has confirmed the identity of that particular tree. Written descriptions and photographs were taken when appropriate. An herbarium of approximately 1200 specimens and considerable written archival material complete the data.

Although the identity of every plant may not be known, the documents provided by this study form a framework for the addition of further information, and the basis for further study of the collection. I wish to thank the Eastwoodhill Trust Board for their goodwill and cooperation for the duration of this project.

Marion MacKay
January 1993

Footnotes

1. Physical information provided by Mr R.J.Berry
2. A review of the material imported for the collection can be found in part three of the inventory.

The catalogue method

This catalogue is an alphabetical listing of all the trees, shrubs and climbers at the Eastwoodhill Arboretum. Each entry follows the pattern:

Scientific name. Naming authority. COMMON NAME. Country of origin. Source. Location and confirmation of identity.

Not all pieces of information are available for each entry. Location is indicated by number and letter codes, e.g. M3, L4, N9, which refer to a particular grid square on the map. Confirmation of identity is indicated by the + sign, and the initials of the person by whom the identity was confirmed. For example, *Lagunaria patersoni* M3+MM, is located in square M3 and the identity has been confirmed by MM, which in this case is the author.

Confirmation of identity codes

- AJ Allan Jellyman
- BB Bob Berry
- BS Bill Sykes
- CN The notebooks of W D Cook
- DG Dorothy Grey
- DJC David Chalmers
- E Eastwoodhill Plant Management Committee
- GC Garry Clapperton
- HH Dr H Heine
- IDS Visiting group of the International Dendrology Society, Feb 1990.
- JD John Dean
- JN John Nichols
- MM Marion MacKay
- MT Metal tag attached to the tree
- McK Ian McKean
- RF Ray Freeman

NM Indicates a plant that is catalogued but not entered onto the maps.

Sources of plant material.

Anderson	Andersons Nursery, Napier, New Zealand.
Appleton	Appletons Tree Nursery, Nelson, New Zealand.
Barrett	Taranaki, New Zealand.
Bayley	R. Bayley, Gisborne, New Zealand.
Berry	Bob Berry, Tiniroto, New Zealand.
Bull	D. Bull, Massey University Grounds Maintenance, Palmerston North, New Zealand.
Bush	Spencer Bush, Arboretum Supervisor.
Cave	Cave's Tree Nursery, Cambridge, New Zealand.
Cedar Lodge	Cedar Lodge Nursery, New Plymouth, New Zealand.
Collier	Gordon Collier, Taihape, New Zealand.
Costello	Terry Costello, Tairāwhiti Polytech, Gisborne, New Zealand.
Denes	Denes Gardenway, Havelock Nth, New Zealand.
D&D	Duncan and Davies Nursery, New Plymouth, New Zealand.
DSIR	Department of Industrial and Scientific Research, New Zealand; Ak, Auckland; Ax Alexandra.
Etherington	G. Etherington, Nelson, New Zealand.
Food Resources Ld	Auckland, New Zealand.
Fraser	Frasers Garden Centre, Kihikihi, New Zealand.
Freeman	Ray Freeman, Albany, New Zealand.
FRI	Forestry Research Institute, Rotorua, New Zealand.
Gallen	Judge Gallen, Havelock Nth, New Zealand.
Gordon	Ron Gordon, Taihape, New Zealand.
Goodwin	Jack Goodwin, New Plymouth, New Zealand.
Goudie	Goudie's Nursery, New Zealand.
Hamilton	Don Hamilton, Katikati, New Zealand.
Harrison	Harrisons Tree Nursery, Palmerston North, New Zealand.
Hatch	Terry Hatch, Joy Plants, Pukekohe, New Zealand.
Henderson	Jarra Park, Tauranga, New Zealand.
Heritage	Heritage Horticulture, New Zealand.
H&S	Hillier and Sons, England.
Hortex	John Stuart-Menzies, Tauranga, New Zealand.
Horsham	John Horsham, Scotland.
Horton	Horton's Nursery, New Zealand.
IDS	Plants purchased with money donated by the International Dendrology Society.
Jellyman	Allan Jellyman, New Plymouth, New Zealand.
Just	B H Just, Palmerston North, New Zealand.
Karaca	Hayrettin Karaca, Karaca Arboretum, Turkey.
KH	Knap Hill Nursery, England.
MAF	Ministry of Agriculture and Fisheries, New Zealand.
Martin E.	E. Martin, Hamilton, New Zealand.
Massey	The New Zealand Rhododendron Association Nusery, previously attached to Massey University, New Zealand.

McKay	Bill McKay, then of Gisborne, New Zealand.
McKean	Ian McKean, Rangiwahia, New Zealand.
Millichamp	Millichamp's Nursery, Ashburton, New Zealand.
Mike Steven	Hamilton, New Zealand.
Mortimor	Bunny Mortimor, Hamilton, New Zealand.
Murphy	Peter Murphy, Gisborne, New Zealand.
MWD	Ministry of Works and Development, Plant Materials Centre, New Zealand.
Nairn	Nairn Brothers Nursery, Christchurch, New Zealand.
Nichols	John Nichols, Tauranga, New Zealand.
NZFS	New Zealand Forest Service, New Zealand.
NZRA	New Zealand Rhododendron Association.
Ormond	Peter Ormond, Havelock Nth, New Zealand.
Overbye	John Overbye, Ormond, Gisborne, New Zealand.
Platt	Graeme Platt, Platts Nursery, Auckland.
PS	Private source.
Puha	Timberlands Puha Nursery, Gisborne, New Zealand.
Pukeiti	Pukeiti Rhododendron Trust, New Plymouth, New Zealand.
Purdie	John Purdie, Havelock North, New Zealand.
Read	Nigel Read, Taradale, Napier, New Zealand.
Rosetead	John Stephenson, Hastings, New Zealand.
Scrivener	Mollie Scrivener, Geraldine, New Zealand.
Sloccock	Sloccock Nursery, England.
Stevens	Stevens Nursery, New Zealand.
Tantrum	Don Tantrum, Taihape, New Zealand.
Thermal	Thermal Nursery, Rotorua, New Zealand.
Toptrees	Toptrees Nursery, Hastings, New Zealand.
Veitch	Veitch's Nursery, England.
Webb	Webb's Nursery, New Zealand.
Welch	Stuart Welch, Marton, New Zealand.
White	P & J White, Hawkes Bay, New Zealand.
White	Stan White, Te Mahanga, New Zealand.
Wilson	Wilson's Nursery, Christchurch, New Zealand.

Families and Genera in the current collection at Eastwoodhill

Total: 118 families, 410 genera.

GYMNOSPERMAE: 8 families, 36 genera**Ginkgoales**

Ginkgoaceae: Ginkgo

Coniferales

Araucariaceae: Agathis, Araucaria

Cephalotaxaceae: Cephalotaxus

Cupressaceae: Chamaecyparis, X Cupressocyparis, Cupressus, Juniperus, Libocedrus, Thuja, Thujopsis, Widdringtonia

Pinaceae: Abies, Cedrus, Keteleeria, Larix, Picea, Pinus, Pseudolarix, Pseudotsuga, Tsuga

Podocarpaceae: Dacrycarpus, Dacrydium, Phyllocladus, Podocarpus, Prumnopitys.

Taxaceae: Taxus, Torreya

Taxodiaceae: Cryptomeria, Cunninghamia, Glyptostrobus, Metasequoia, Sciadopitys, Sequoia, Sequoiadendron, Taiwania, Taxodium

ANGIOSPERMAE: 110 families, 374 genera**Monocotyledonae** 5 families, 11 genera

Agavaceae: Cordyline, Furcraea, Phormium

Amaryllidaceae: Beschorneria, Bomarea, Doryanthes

Aracaceae(Palmae): Phoenix, Trachycarpus

Liliaceae: Smilax

Poaceae(Graminae): Arundo, Phyllostachys

Dicotyledonae 105 families, 363 genera

Acanthaceae: Beleoporone, Strobilanthes, Thunbergia

Aceraceae: Acer

Anacardiaceae: Cotinus, Pistachia, Rhus, Schinus, Spondias

Anonaceae: Asimina

Apiaceae: Heteromorpha

Apocynaceae: Nerium, Strobilanthes, Trachelospermum

Aquifoliaceae: **N**ex

Araliaceae: Aralia, Fatsia, Pseudopanax

Aristolochiaceae: Aristolochia

Asclepiadaceae: Wattakaka

Asteraceae: Brachyglottis, Dahlia, Eupatorium, Helichrysum, Olearia, Senecio

Berberidaceae: Berberis, Mahonia, Nandina

Betulaceae:	Alnus, Betula, Carpinus, Corylus, Ostrya
Bignoniaceae:	Campsis, Catalpa, Doxantha, Eccremocarpus, Jacaranda, Pandorea, Phaedoranthus, Podranea, Tecomanthe
Buxaceae:	Buxus, Sarcococca
Caesalpinaceae:	Cassia, Ceratonia, Cercis, Gleditsia, Gymnocladus, Peltophorum
Calycanthaceae:	Calycanthus, Chimonanthus
Caprifoliaceae:	Abelia, Diervilla, Dipelta, Kolkwitzia, Lonicera, Sambucus, Viburnum, Weigelea
Casuarinaceae:	Casuarina
Celastraceae:	Catha, Celastrus, Euonymus, Maytenus, Tripterygium
Cercidiphyllaceae:	Cercidiphyllum
Cistaceae:	Cistus
Clethraceae:	Clethra
Coriariaceae:	Coriaria
Cornaceae:	Aucuba, Cornus, Griselinia
Corynocarpaceae:	Corynocarpus
Cunoniaceae:	Callicoma, Ceratopetalum, Cunonia
Cyrillaceae:	Cyrilla
Davidiaceae:	Davidia
Ebenaceae:	Diospyros
Ehretiaceae:	Ehretia
Elaeagnaceae:	Elaeagnus
Elaeocarpaceae:	Aristotelia, Elaeocarpus
Epacridaceae:	Cyathodes
Ericaceae:	Arbutus, Enkianthus, Erica, Gaultheria, Kalmia, Ledum, Leucothoe, Lyonia, Oxydendrum, Pieris, Rhododendron, Vaccinium
Escalloniaceae:	Carpodetus, Escallonia
Eucommiaceae:	Eucommia
Eucryphiaceae:	Eucryphia
Euphorbiaceae:	Glochidion, Mallotus, Sapium
Fabaceae:	see Caesalpinaceae, Mimosaceae, and Papilionaceae.
Fagaceae:	Castanea, Castanopsis, Fagus, Lithocarpus, Nothofagus, Quercus
Flacourtiaceae:	Aberia, Azara, Berberidopsis, Idesia, Poliothyrsus
Garryaceae:	Garrya
Hamamelidaceae:	Corylopsis, Disanthus, Distylum, Fothergilla, Hamamelis, Liquidamber, Loropetalum, Parrotia, Parrotiopsis, Stachyurus, Sycopsis
Hippocastanaceae:	Aesculus
Hypericaceae:	Hypericum
Icacinaceae:	Pennantia
Illiciaceae:	Illicium
Juglandaceae:	Carya, Juglans, Platycarya, Pterocarya
Lamiaceae:	Colquhounia, Lavandula, Prostanthera, Rosmarinus, Salvia, Teucrium
Lardizabalaceae:	Akebia, Decaisnea, Holboellia, Lardizabala, Stauntonia
Lauraceae:	Cinnamomum, Laurus, Neolitsia, Persea, Sassafras, Umbellularia
Leguminosae:	see Fabaceae
Loganiaceae:	Buddleia, Desfontainea, Gelsemium

Lythraceae:	Lagerstroemia
Magnoliaceae:	Liriodendron, Magnolia, Manglietia, Michelia, Schisandra, Talauma
Malvaceae:	Abutilon, Hibiscus, Hoheria, Lagunaria
Melastomataceae:	Tibouchina
Meliaceae:	Melia, Toona
Melanthaceae:	Greyia
Mimosaceae:	Acacia, Albizia, Calliandra, Leucaena, Pithecellobium
Monimiaceae:	Hedycarya
Moraceae:	Broussonetia, Cudranea, Ficus, Morus, Paratrophis
Myoporaceae:	Myoporum
Myricaceae:	Myrica
Myrsinaceae:	Myrsine
Myrtaceae:	Angophora, Baeckia, Callistemon, Eucalyptus, Feijoa, Leptospermum, Melaleuca, Metrosideros, Myrtus, Syzygium, Tristania, Ugni.
Nyssaceae:	Nyssa
Ochnaceae:	Ochna
Oleaceae:	Abeliophyllum, Chionanthus, Fontanesia, Forsythia, Fraxinus, Jasminium, Ligustrum, Nestegis, Olea, Osmanthus, X Osmarea, Parasyringa, Syringa
Onagraceae:	Fuchsia
Papilionaceae:	Amorpha, Castanospermum, Cladrastis, Clianthus, Cytisus, Erythrina, Genista, Goodia, Hardenbergia, Hedysarum, Indigofera, Kennedia, Laburnum, Lespedeza, Petteria, Piptanthus, Robinia, Sesbania, Sophora, Spartium, Virgilia, Wisteria.
Passifloraceae:	Passiflora
Pittosporaceae:	Hymenosporum, Pittosporum, Sollya
Platanaceae:	Platanus
Plumbaginaceae:	Ceratostigma
Proteaceae:	Banksia, Embotrium, Grevillea, Knightia, Lomatia, Macadamia, Protea
Punicaceae:	Punica
Ranunculaceae:	Clematis, Paeonia
Rhamnaceae:	Alphitonia, Ceanothus, Hovenia, Paliurus, Pomaderris, Rhamnus
Rosaceae:	Amelanchier, Aronia, Chaenomeles, Cotoneaster, X Crataegomespilus, Crataegus, X Crataemespilus, Dichotomanthes, Eriobotrya, Exochorda, Kerria, Lyonothamnus, Malus, Mespilus, Neillia, Osmaronia, Photinia, Physocarpus, Potentilla, Prinsepia, Prunus, Pseudocydonia, Pyracantha, Pyrus, Quillaja, Rhapsiolepis, Rhodotypos, Rosa, X Sorbaria, X Sorbopyrus, Sorbus, Spiraea, Stephanandra, Stranvaesia
Rubiaceae:	Coprosma, Emmenopterys
Rutaceae:	Calodendrum, Choisya, Citrus, Euodia, Phellodendron, Poncirus, Ptelea, Zanthoxylum.
Sabiaceae:	Meliosma
Salicaceae:	Populus, Salix
Sapindaceae:	Alectryon, Dodonaea, Koelreuteria
Saxifragaceae:	Carpentaria, Decumaria, Deutzia, Dichroa, Hydrangea, Itea, Philadelphus, Quintinia, Ribes, Schizophragma
Scrophulariaceae:	Bowkeria, Freylinia, Hebe, Paulownia

Simaroubaceae:	Ailanthus, Picrasma
Solanaceae:	Brugmansia, Cestrum, Cyphomandra, Solanum
Staphyleaceae:	Euscaphus, Staphylea
Sterculiaceae:	Brachychiton, Firmiana
Styracaceae:	Halesia, Pterostyrax, Sinojackia, Styrax
Symplocaceae:	Symplocos
Tamaricaceae:	Tamarix
Tetracentraceae:	Tetracentron
Theaceae:	Camellia, Gordonia, Schima, Stuartia, Ternstroemia
Tiliaceae:	Crinodendron, Tilia
Thymeleaceae:	Dais, Daphne, Edgeworthia
Trochodendraceae:	Trochodendron
Ulmaceae:	Celtis, Ulmus, Zelkova
Verbenaceae:	Callicarpa, Clerodendron, Duranta, Lantana, Raphithamnus, Vitex
Violaceae:	Melicytus
Vitaceae:	Ampelopsis, Cissus, Parthenocissus, Vitis

In the original catalogue a plan of the arboretum, with overlaid grid, appeared at this point. Readers of this thesis will find a copy of that plan in thesis Appendix 2.

Abelia: Caprifoliaceae (3+0=3)*graebneriana* Rehd. China. not found I8*x grandiflora* (Andre).Rehd. Hort. Webster, E8+MM; H&S1948 F10+MM J6+MM J7+MM K11+MM*schumannii* (Grabn).Rehd. China. D&D 1934, H7+MM I8+MM I9+MM**Abeliophyllum: Oleaceae (1+0=1)***distichum* Nakai. Korea. L5+GC; H&S 1947 not found H10**Aberia: Flacourtiaceae (1+0=1)***caffra*. (Hook f.) J Hart. (*Dovyalis caffra*) KEI APPLE. S Africa. Hortex1986, M4**Abies: Pinaceae (31+3=34)**

L10 (OH633), S4

alba Mill. EUROPEAN SILVER FIR. Europe. not found N9*amabilis* Forbes. PACIFIC SILVER FIR. W N America. H&S 1949, L10; not found F5*balsamea* (L).Mill. BALSAM FIR. N America. H&S 1949, K7+E, not found H9

‘Hudsonia’ H&S 1950, not found L7 (dead?)

bracteata (D Don)D Don ex Poit. BRISTLECONE FIR. W USA. H&S 1949, L10+McK*cephalonica* Loud. GRECIAN FIR. Greece. H&S 1949, L10+McK*coahuilensis* see *A.durangensis* var. *coahuilensis**concolor* Hildbre. WHITE FIR. USA Mexico. H&S 1949, L10+E O6 P6+E ?6+GC R5+MM R7+GC

‘Candicans’ H&S 1949, K10+GC

‘Compacta’ (‘Glauca Compacta’) H&S 1949, not found L10

‘Glauca’ H&S 1949, L10

delavayi Franch. China. L8+E*delavayi* var. *delavayi* (*A. fabri* (Mast.)D.R.Hunt) China. H&S 1949, L8+E*delavayi* var. *georgei* (Orr).Melville. (*A. georgei*) China.H&S 1949, K10 (labelled *A.georgiana* related *faxoniana*.)*durangensis* var. *coahuilensis* (I M Forst.)Mart. COAHUILA FIR Mexico. Mckean 1988. T5 (NM),*fabri* see *A.delavayi* var. *delavayi*.*firma* S&Z. MOMI FIR. Japan. H&S 1949, L10+McK; Tantrum 1988, K9+GC (NM),*fraseri* (Pursh)Poir. FRASER FIR. USA. H&S 1951, not found P10 (found at Blackwater)*georgiana* (related *faxoniana*) see *A. delavayi* var. *georgei*.*grandis* (Don ex Lamb) Lindl. GIANT FIR. USA. H&S 1948, G4+CS*holophylla* Max. MANCHURIAN FIR. Korea. H&S 1949, L10+E*homolepis* S&Z. (*brachyphylla* Maxim.) NIKKO FIR. Japan.H&S 1952, K7+GC (wrongly labelled *veitchii*), I4 (labelled *brachyphylla*)*kawakamii* (Hayata)Ito. FORMOSAN FIR. Taiwan. H&S 1949, not found L10*koreana* Wils. KOREAN FIR. Korea. H&S 1949, not found L10*lasiocarpa* (Hook).Nutt. SUBALPINE FIR. W USA. H&S 1949, not found L10*magnifica* A. Murr. CALIFORNIAN RED FIR. W USA. NZFS ?, not found O7 or Q7*mariesii* Mast. MARIES FIR. Japan. PS 1980, not found H8*nebrodensis* (Lojac). Mattai. SICILIAN FIR. Sicily. H&S 1951, M7+E*nobilis* see *A.procera*.*nordmanniana* (Steven)Spach. CAUCASIAN FIR. Caucasus. D&D 1934, I7 L8*numidica* De Lannoy. ALGERIAN FIR. Algeria. H&S 1949, L10+McK*pindrow* var. *brevifolia* D&J. (*gamblei*) WEST HIMALAYAN FIR. Himalaya. 1949, not found L10*pinsapo* Boss. SPANISH FIR. Spain. B6 D5 F4 K6 L7 R8 S8 Q9*f. glauca* (Carr)Beissn. E9+GC R7*procera* Rehd. (*A.nobilis*). NOBLE FIR. W USA. H&S 1949, L10 P6 P7 Q6 R7?,

- recurvata* Mast. MIN FIR. China. H&S 1949, not found L10
religiosa (HBK). Schlect. SACRED FIR Mexico. NZFS ?, O6+GC P6+GC Q7+GC
spectabilis var. *brevifolia* (Henry)Rehd. HIMALAYAN FIR Himalaya. H&S 1949, K10+McK
veitchii Lindl. VEITCH'S FIR Japan. H&S 1949, L10+McK

***Abutilon*: Malvaceae (2+1=3)**

- x hybridum* Hort. not found H11 or O5, many seedlings G10 H10 N4
striatum G Dickson ex Lindl. South America.
 'Thompsonii' Rosestead 1987, H11+MM
vitifolium Presl. Chile. Berry1989, G11 (NM),

***Acacia*: Fabaceae - Mimosaceae (15+1=16)**

- F8(CP558,580) G8 N8(DP108) N9(DP129) O8(DP128) R6(DP131)
baileyana Muell. COOTAMUNDRA WATTLE. Australia. D8+MM G8+MM P7+MM
 P8+MM R5+MM R8+MM
 'Purpurea' PURPLE COOTAMUNDRA WATTLE. 1980, G8+GC
cutriformis A.Cunn. KNIFE LEAF WATTLE. Australia. O8+MM
dealbata Link. SILVER WATTLE. Australia. C13+MM E5+MM J4 J10+MM N8+DJC
decurrens (Wendl)Willd. GREEN WATTLE. Australia. not found F10,
elata CEDAR WATTLE. Australia. many seedlings M4
floribunda (Venten.) Willd. GOSSAMER WATTLE. Australia.
 1987 MWD2959, H11 (NM); 1987 MWD3043, H11 (NM);
leprosa Sieb. LEPER WATTLE. Australia. not found O10
longifolia (Andr)Willd. SYDNEY GOLDEN WATTLE. Australia. N9+DJC
melanoxylo R.Br. BLACKWOOD. Australia, Tasmania. H8+GC, N9+DJC, not found N5
pravissima Muell. OVENS WATTLE. Australia. O8+MM P7+MM R6+MM, not found I9
prominens A.Cunn. GOLDENRAIN WATTLE. Australia. Webb 1935?, N5+GC
pycnantha Benth. GOLDEN WATTLE. Australia. DSIR Ak 1975, not found R8
retinoides Schlect. WIRILDA. Australia. DSIR Ak 1980, not found
rubida A.Cunn. RED STEMMED WATTLE. Australia. 1987 MWD2985, H11 (NM);
silvestris BODALLA SILVER WATTLE. Australia. 1987 MWD3025, H11 (NM)

***Acer*: Aceraceae (83+50=133)**

- E8 G7 G9(CP532) I10(Ga807) K5 K10(OH660,661) L3 L10 M4 O7 P5
amplum Rehd. China. H&S 1949, K11; Appleton 1988, J6+GC, K10+GC (NM)
buergerianum Miq. (*trifidum*) TRIDENT MAPLE. China. (all+MM) D5 D11 C12 F9 I9 J2
 J7 J9 K5 N2 N4 O2 O4 P3 P5 Q3 R2 R5 R10 S3 S5
caesium Wall. China, Himalaya. Appleton1987, H6+GC
campbellii Hook.f.Thoms. Himalaya. H&S 1955, I4+BB
campbellii ssp. *wilsonii* China. EWH1989, C7(NM); H&S 1948-55, E10+MM I3+MM
campestre L. HEDGE MAPLE. Europe, Asia minor. Appleton 1987, G7 (NM)
 'Schwerinii' H&S 1957, O2+GC
capillipes Max. RED SNAKE BARK MAPLE. Japan. H&S 1955-59, R3
cappadocicum Gledtisch. CAPPADOCIAN MAPLE. Caucasus, Asia minor to Himalaya.
 I10+GC, D4+GC, not found E11
 'Aureum' H&S 1948, E10+MM; Appleton 1988, K10+GC (NM);
 'Rubrum' H&S 1948, E10+MM
 var. *sinicum* Rehd. China. H&S(IDS) 1979, G6
 f. *tricaudatum* (Rehd)Rehd. China. H&S 1964, not found O8

- carpinifolium* S&Z. HORNBEAM MAPLE. Japan. H&S 1955, I2+MM
Cave(ex Kunming)1988, L3+GC (NM);
- caudatifolium* S&Z. (*kawakamii* Koidz, *morrisonense* Hayata) Taiwan.
Berry(seed 2275m Daxue Shan, Taiwan), H6
PS(ex seed Daxue Shan,Taiwan), K11+GC; Gallen1986 S3+GC (NM)
- circinatum* Pursch. VINE MAPLE. W USA. H&S 1949, E10+MM
- cissifolium* (S&Z)K Koch. Japan. H&S(IDS) 1979, G7(reverted to stock)
- dauidii* Franch. DAVID'S MAPLE. China. P3, not found J8
'George Forrest' ('Horizontalis') H&S 1949, K11(fallen)
- diabolicum* K Koch. HORNED MAPLE. Japan. H5+BB, (female)
- diabolicum f. purpurascens* (Franch & Sav)Rehd. Japan. E10+MM (male)
- divergens* Pax. (*quinquelobum* K.Koch, not Gilib.) Asiatic Turkey.
H&S 1965, not found P9; Millichamp1990 (nsy)
- erianthum* Swcher. China. H&S(IDS) 1979, G7 dead.
- fargesii* Rehd. China. H&S 1959, P9; Appleton(ex EWH)1988, S8+GC (NM)
- flabellatum* Rehd. China. H&S(IDS) 1979, F6
- forrestii* Diels. China. Appleton 1988, S7+GC (NM), K10+GC (NM),
- ginnala* Max. (*tataricum var. ginnala*) AMUR MAPLE. China, Korea, Japan.
Cave 1988, E10+MM, M4+GC, L5+GC (NM),
- glabrum* Torr. ROCK MAPLE. W USA. H&S 1957, not found G4
- grandidentatum* see *A. saccharum ssp. grandidentatum*
- griseum* (Franch)Pax. (*nikoense var. griseum*). PAPERBARK MAPLE. China.
H&S 1952, E10+MM I5+MM N7+MM O8+MM
- grosseri* Pax. China. H&S 1948, not found K11 (could this be the one at the bottom of OH)
var. hersii (Rehd)Rehd. China. H&S 1949&55, G4+MM, not found K11
- heldreichii* Orph. GREEK MAPLE. Greece, Bulgaria. Hors1986, H6+GC
- henryi* Pax. China. H&S 1949&57, G3 K11
- hersii* see *A.grosseri var. hersii*
- x hillieri* Hort. (*campestre x miyabei*) H&S(IDS) 1979, F6
- hookeri* Miq. Himalaya. I4+CN, N5+CN
- x hybridum* Bosc. (*opalus x pseudoplatanus*) Hort. F5 F6(Ci400)?
- hyrcanum* Fisch. & Mey. BALKAN MAPLE. Balkan, Europe.
H&S(IDS)1979, G6+MM; H&S1949 L12+IDS; H&S1948 I7+IDS;
- japonicum* Thunb. DOWNY JAPANESE MAPLE. Japan. ex Japan, not found H10
not found O7 (something at Rock Point pond), Appleton 1988, K10+GC (NM)
'Aconitifolium' ex Japan?, not found H10 R9
'Aureum' ex Japan?, not found H10
'Vitifolium' H&S 1955&65, I2+MM, H8+GC (NM), not found O7
- kawakamii* Koidz. see *A.caudatifolium*
- kawakamii hybrid* Goodwin(ex University of Washington)1986, P5+GC
- laetum* see *A.cappadocicum*
- laxiflorum* Pax. China Tibet, Appleton 1988, G5
- leucoderme* Small. (*saccharum ssp. leucoderme* (Small).Sarg.).
CHALK MAPLE. USA. H&S(IDS) 1979, F6
- lobelii* Ten. Italy. H&S 1955, H2+MM
- macrophyllum* Pursch. BIGLEAF MAPLE. W USA. J6+GC Q8+MM R10+MM
- mayrii* Schwer. (*mono var. mayrii*). Japan. H&S(IDS) 1979, F6

- maximowiczianum* Miq. (*nikoense*). NIKKOMAPLE. Japan. E10+MM O7+MM P7+MM
- miyabei* Max. MIYABE'S MAPLE. Japan. H&S 1938, I5
- monspessulanum* L. MONTPELIER MAPLE. Europe Asia. D&D1939, E10+MM;
Appleton 1988 K10+GC (NM);
- morrisonense* Hayata. see *caudatifolium*.
- negundo* L. BOXELDER, ASH LEAF MAPLE USA. (all +MM) B5 D6 E4 F6 F9 I2 J9 L12 O10
three foliate green H5 I7 R10
'Auratum' L6+MM
'Aureomarginatum' J9+MM mostly reverted
'Variegatum' O7+MM, not found C5
var. californicum (Torr & Gr.) Sarg. California. H&S 1959, R3
var. mexicanum Wessm. Mexico, Guatemala. Berry1987 S5+GC
var. violaceum (Kirch)Jag. USA. H&S 1959, S3
- nigrum* Michx. see *A. saccharum ssp. nigrum*
- nikoense* Maxim. see *A. maximowiczianum*. Miq.
- oliveranum* Pax. China. H&S 1955, not found G5;
- oliveranum hybrid* Goodwin(ex University of Washington)1986, G5
- opalus* Mill. ITALIAN MAPLE. Switzerland France. H&S 1947, I2? I7,
- opalus ssp. obtusatum* Croatia, Bosnia, Serbia. E12+MM, H4+MM
- orientale* see *sempervirens*
- palmatum* Thunb. JAPANESE MAPLE. Japan. (all +MM) B6 C6 D8 D9 E4 E6 E8 F9 G3 G11
H9 H10 I6 I9 I10 J8 J9 L8 N5 O7 O9 P3 P7 P8 P9 Q5 Q8 R9 R10;
purple types H10 I9 I10 I10 J10
'Atropurpureum' H&S 1938, H5+CN, M6+CN
'Aureum' Birch Hill Pond, Hillier Dam Lagoon
var. coreanum Nakai. Korea. H&S 1965, not found P9
'Crispii' H&S 1965, I10
'Dissectum' ex Japan?, I10+MM
'Dissectum Atropurpureum' ex Japan?, I10+MM
'Hillieri' R6
'Isingaki' I6 (is this 'Tsumingaki' ?)
'Koshimino' Cave1988 L4+GC; Q8+MM
'Lutescens' H&S 1964, not located P9(dead?)
'Nigrum' H5+CN J6+GC R6
'Osakasuki' G5+CN I9+MM O7+CN, not located H5 (check circus corner) O3
'Oshiu Beni' N5
'Rubrum' I5+CN I6+CN
'Sango Kaku' ('Senkaki') H&S 1952, I2 I5+GC, not located O7
'Seigan' Q7, not located H5
'Septemlobum' L7 Q3
'Septemlobum Rubrum' H5+CN M3+CN
'Septemlobum Superbum' M4
'Septemlobum Purpureum Superbum' L4+CN
'Sessiliflorum' see 'Koshimino'
'Shishigashira' H&S 1956, Q5+MM
'Sumingashi' H5+CN

- paxii* Franch. China. H&S 1957, P4; Cave 1988 S7+GC(NM);
- pensylvanicum* L. STRIPED MAPLE, MOOSEWOOD, USA Canada
H&S 1949, not found K11 (dead). Cave(ex Berry ex EWH)1988 I3+GC, P8+GC
'Erythrocladum' H&S(IDS) 1979, G7+GC
- pentaphyllum* Diels. China. Cave(ex Berry ex Hillier)1988, F5+GC M4+GC
- platanoides* L. NORWAY MAPLE. Europe. C12 E4 G10 H2 I2 I7 J7 J9 J10 L8 P9
R5 S5, purple type R5
'Crimson King' H&S 1957, O2+CN O3+CN P4+CN S3+CN
'Cucullatum' H&S 1965, P10+MM
'Drummondii' H&S 1966, I9 reverted to stock
'Goldsworth Purple' H&S 1955, I2+CN
'Lorbergii' H&S 1957, same as *Palmatifidum* according to K
'Palmatifidum' H&S 1956, H3+MM H4+MM
'Reitenbachii' H&S 1949, E12+MM, not found E10
'Schwedleri' SWEDLER MAPLE. P8 P10
- pseudoplatanus* L. SYCAMORE. Europe, Asia. D4 D8 D9 D13 H6 G7
'Brilliantissimum' H&S 1938, I4+CN L6+MM L9+MM O9+MM, not found M6
'Esk Sunset' J6
'Esk Sunset II' Q10
'Leopoldii' VARIEGATED SYCAMORE, Q4+MM, not found I9
'Worleei' H&S 1948, I4+MM, E12+MM (removed)
f. erythrocarpum (Carr)Pax. RED FRUITED SYCAMORE. Bavaria.
H&S 1965&66, F4+MM P10+MM, not found F9
f. purpureum PURPLE SYCAMORE, C4+MM D4+MM D5+MM L8+MM O9+MM
- pseudosieboldianum* Komar. Korea, Manchuria. H&S 1965, Q7+MM
- pseudosieboldianum* var. *takesimense* (Nakai)de Jong. Horsham 1986, H6(NM)
- rubrum* L. RED MAPLE. E USA. H&S 1937, F10+MM I5+MM K7+MM. L3(Brill?)
'Brilliant' D&D?, E10+GC F10+CN L5+MM L6+CN L8+GC
'October Glory' Collier 1988 K10+GC(NM)
- rufinerve* S&Z. RED VEIN MAPLE. Japan. H&S 1938, I5 F9+GC
f. albolimbatum (Hook f.)Scwher. Japan. H&S 1947&56, H4+MM K12+MM
- saccharinum* L. (*dasycarpum* Ehrh.) SILVER MAPLE. USA.
D&D 1934, F6+MM I9+MM I7+MM K3+MM
f. laciniatum CUT LEAF SILVER MAPLE, H&S 1952?, F9+GC I4+MM
'Pulverulentum' H&S 1948, E10+GC
'Pyramidale' ('Fastigiatum') G4+GC
- saccharum* Marsh. SUGAR MAPLE. USA. H&S 1938, E4+BB I5 G11
Arnold Form (ex seed Arnold Arboretum), E11
spp grandidentatum (Torr & Gray)Desm. USA H&S1948 died;
McKean1988, C10+GC(NM); McKean(ex MWD)1985, (NM)
ssp. nigrum (Michx f.)Desm. BLACK MAPLE. USA.
H&S1937, H9+GC; H&S(IDS)1979, G7
- sempervirens* L. (*creticum, orientale*) CRETAN MAPLE. Meditt. H&S 1949,
tree at L12 is *A. hyrcanum*
- serrulatum* Hayata. Japan. H&S(IDS) 1979, F6
- sieboldianum* Miq. Japan. H&S 1966, I3
- sessiliflorum* see *palmatum* 'Sessiliflorum'
- spicatum* Lam. MOUNTAIN MAPLE, USA Canada. H&S(IDS)1979, G7

- sterculiaceum* Wall. Himalaya. H&S 1965, P10+MM
tegmentosum Max. Manchuria, Korea. Hors1986, G6+GC
triflorum Komar. THREE FLOWER MAPLE. Korea. H&S 1955, Q5+MM (labelled *triflorum mandshurica*)
trautvetteri Medwed. CAUCASIAN MAPLE. Caucasus. H6+GC
truncatum Bunge. China. Horsham1986, H6(NM).
turkestanicum Pax. TURKESTAN MAPLE. Asia. H&S(IDS) 1979, F6
ukurunduense Trautv. & Mey. (*A. caudatum* var. *ukurunduense*) China H&S(IDS) 1979, G7
velutinum Boiss. Caucasus, Iran.
velutinum var. *vanvolxemii* (Mast)Rehd. E.Caucasus. H&S 1957, E12+MM F11+MM H2+MM
velutinum var. *vanvolxemii* x *pseudoplatanus purpureum* PS(ex seed) 1975, T5+BB
wilsonii Rehd. see *campbellii* ssp. *wilsonii*.
x zeoschense Pax. (*campestre* x *lobelii*) H&S 1959, R3+MM P10+MM

Aesculus: Hippocastanaceae (15+5=20)

B12 M4 O7

- arguta* Buckl. TEXAS BUCKEYE. Texas. H&S(IDS) 1979, F6
californica Nutt. CALIFORNIA HORSE CHESTNUT. California. PS(ex seed 470m California), K2 dead.
x carnea Hayne. (*hippocastanum* x *pavia*) PINK HORSE CHESTNUT, Hort.
 I4+MM I7+MM K3+MM P5+MM R5+MM Q7+MM
 ‘**Briotii**’ H6+MM, not found M6
chinensis Bunge. CHINESE HORSE CHESTNUT. China. H&S(IDS) 1979, nursery
discolor var. *mollis* (Raf.)Sarg. (*austrina*) USA. H&S 1948, H3
flava Soland. (*octandra*, Marsh.) YELLOW BUCKEYE. USA. H&S 1947&55, H4
flava hyd (could this be *A x hybrida*; (*pavia.flava*) ?) O9
glabra Willd. OHIO BUCKEYE. USA. H&S 1956, H4 D12
hippocastanum L. HORSE CHESTNUT. Greece, Bulgaria. (all +MM) B5 B6
 B7 C6 D4 D5 E9 F3 F9 G3 G9 G10 H2 I2 J9
 ‘**Digitata**’ (‘**Pumilum**’) H&S 1949, L12+MM
 ‘**Praecox**’ H2+MM
 ‘**Pyramidalis**’ H&S 1949, D12
indica (Camb)Hook. INDIAN HORSE CHESTNUT India. (all +MM) G5 H2
 H3 I2 K9 L3 L7 O2 O7 O9 P2 P10 Q3 R3 R7 S7 S8
x mutabilis (Spach)Schnelle. (*pavia* x *sylvatica*). Hort.
 ‘**Induta**’ H&S 1948, D10+MM
x neglecta Lindl. (*flava* x *sylvatica*) PAINTED BUCKEYE. USA. H&S(IDS) 1979, G7
parviflora Walt. USA. H&S 1938, G5+MM H11+MM O7+MM O8+MM (plus theatre)
pavia L. RED BUCKEYE. USA. H&S 1956, I3
x plantierensis Andre. (*hippocastanum* x *carnea*). Hort. H&S 1947&49, D10 D12; Cave1986 Q6+GC;
splendens Sarg. USA. H&S 1949&55, D10 H3

Agathis: Araucariaceae (1+0=1)

- australis* Salisb. KAURI. New Zealand. FRI R(100 ex Auckland) 1979, M2 M3(bush)

Ailanthus: Simaroubiaceae (1+0=1)

- altissima* (Mill)Swingle. TREE OF HEAVEN. China. D4+MM, H11 (NM)

Akebia: Lardizabalaceae (1+0=1)

- quinata* (Houtt)Dcne. China, Japan, Korea. Nichols 1988, L5+GC

Albizia: Fabaceae - Mimosaceae (1+0=1)

- julibrissin* Durazz. PINK SIRIS. Iran to Japan. H9+MM J9+MM O10+MM

Alectryon: Sapindaceae (1+0=1)*excelsus* Gaertn. TITOKI. New Zealand. G11+MM**Alnus: Betulaceae (21+5=26)**

F4(Ci289) G5 I3

acuminata arguta (Name not confirmed). MEXICAN ALDER, P3 O9, not found R10

Berry1987 P3 S5 T5; Berry1988 F5;

acuminata glabrata (Name not confirmed). Berry1988 T3*arguta* see *acuminata arguta*.*cordata* (Loisel)Desf. ITALIAN ALDER. Italy, Corsica.

H&S 1955, I3, not found R3; Puha1988 O0 O1 P1(all NM);

cremastogyne Burk. China. FRI1988, G5(NM); FRI1989 S8(NM)*firma* S&Z. Japan. Puha1988 F4+GC,*glutinosa* (L.)Gaertn. COMMON ALDER. Europe, Nth Africa. Cave1988 O0 O1 (both NM)

'Aurea' H&S196X Q7; Cave(ex EWH)1988, H4+GC (NM);

'Laciniata' H&S 1956, not found H4

hirsuta (Spach)Rupr. (*tinctoria*) Asia. H&S 1948&59, search Q3*incana* (L.)Moench. GREY ALDER. Europe, Caucasus, R3

'Aurea' J2; Appleton1988 M6+GC (NM);

'Laciniata' H&S 1956&57, I3 J2(dead), not found I9

'Pendula' WEEPING GREY ALDER, H&S 1957, P2

inokumae Murae.Kuska. FRI Ch(ex seed Mt Iwate, Japan) 1977, P2*japonica* (Thunb) Steub. Japan, Korea, Taiwan. H&S 1948, B12+GC; Berry(ex Hokaido)1988

G5+GC;

zorullensis HBK. Mexico, Argentina. Appleton1988, F4; not found C12*lanata* Duthie. China. H&S 1957, not found I3*nepalensis* D Don. NEPAL ALDER. Himalaya. Appleton1987, F4

Jellyman(4500ft Talamarang Nepal)1988, F5

nitida (Spach)Endl. India, Himalaya, Puha 1988,F4; Mortimor1988, F6; Heritage 1988 O1 (NM);*orientalis* Dcne. ORIENTAL ALDER. Asia, Cyprus. H&S1959, not found Q3*pendula* Matsum. (*firma* var. *multinervis* Reg.) Japan. Hudson1986 nursery.*rhombofolia* Nutt. WHITE ALDER. USA. Heritage1987, F5+GC*rubra* Bong. RED ALDER. USA. H&S 1952, R10*sinuata* (Reg)Rydb. SITKA ALDER. WN America. Overbye 1985, D7+GC; H&S 1965, F4(Ci290)*x spaethii* Call. (*subcordata x japonica*) Hort. H&S 1948, C11+GC; F4 R3+GC R4+GC*tenuifolia* Nutt. THINLEAF ALDER. WN America. FRI Ch 1977 (seed), F4?;IDS 1988, F5+GC (Jellyman *A.tenuifolia x glutinosa* ex Hungary)**Alphitonia: Rhamnaceae (1+0=1)***excelsa* Reiss ex Endl. RED ASH. Australia. S White 1986, M6+GC**Amelanchier: Rosaceae (4+1=5)**

B5 D7

arborea (Michx f.)Fern. (*canadensis* sens. Weig; not *canadensis* L.) E N America C6*asiatica* (S&Z)Endl. Japan, China, Korea, H&S 1947, D10 I3*hybrid* (*grandiflora canadensis x lamarckii* Rubescens) (NNC) I3*laevis* Weig. ALLEGHANY SERVICEBERRY. USA. not found C10*lamarckii* Schroed. E N America'Rubescens' (*A x grandiflora* 'Rubescens') H&S, L4

Amorpha: Fabaceae - Papilionaceae (1+0=1)

fruticosa L. INDIGO BUSH. EN America. Collier1988 L5 (NM);

Ampelopsis: Vitaceae (4+1=5)

aconitifolia Bunge. (*Vitis aconitifolia*) China. Goodwin(ex UofW), N4 (NM);

brevipedunculata (Max)Trautv. (*Vitis heterophylla*, *V.brevipedunculata*) Japan, China. nursery

‘Elegans’ (*Vitis heterophylla* ‘Elegans’) Nichols 1988, L5+GC

var. *maximowiczii* (Regel)Rehd. China, Japan, Korea. Goodwin1986 H11 (NM)

megalophylla Diels & Gilg. (*Vitis megalophylla*) China. H&S1949, dead; EWH1985, L5 (NM)

Angophora: Myrtaceae (1+0=1)

costata Gaertn(Britt). GUM MYRTLE. Australia. Mortimor1986, K6

Aralia: Araliaceae (2+0=2)

chinensis L. China. I6 (this plant is not typical)

spinosa L. HERCULES CLUB. USA. D5 H5 I5. Mortimor(ex Kunming)1988, I6+GC

Araucaria: Araucariaceae (3+0=3)

araucana (Mol)C Koch. (*A.imbricata*) MONKEY PUZZLE. Chile. D7

bidwillii Hook. BUNYA BUNYA PINE. Australia. R10

cunninghamii D Don. HOOPPINE. Australia. H7

Arbutus: Ericaceae (3+0=3)

x andrachnoides Link. (*A x hybrida*) Greece. Gallen1985, H11+GC(NM), L6+GC, Q5+GC

canariensis Duh. Canary Island. Read(ex D&D)1988, M3 (NM);

unedo L. STRAWBERRY TREE. Ireland, Asia minor. D&D 1934, J7 L5 L12

Aristolochia: Aristolochiaceae (1+0=1)

sempervirens L. DUTCHMANS PIPE. Meditt. H&S 1949, I8

Aristotelia: Eleocarpaceae (1+0=1)

chilensis (Molina)Stuntz. (*macqui*) Chile. McKean 1988, I6+GC (NM); Appleton1987, L5+GC

Aronia: Rosaceae (2+0=2)

arbutifolia (L.)Elliot. RED CHOKEBERRY. USA. H10

prunifolia Eastern USA. Appleton1986 L1 (NM);

Arundo: Poaceae (1+0=1)

donax L. GIANT REED. Meditt. F10+GC, removed J1

Asimina: Anonaceae (1+0=1)

triloba (L.)Dun. PAWPAW. USA. H&S 1951, H8

Aucuba: Cornaceae (1+2=3)

japonica Thunb. JAPANESE LAUREL. Japan. H9 three types

‘Crotonoides’ H11

‘Gold Dust’ not found H10, Crotonoides in H11

Austrocedrus: Cupressaceae (1+0=1)

chilensis (D Don)Florin & Boutelje. (*Libocedrus c.*) CHILEAN CEDAR. Chile. O1.

Azara: Flacourtiaceae (5+0=5)

I10(dead), seedling K10 (NM), Costello1990 R7 (NM)

gilliesii see *A.petiolaris*.

integrifolia Ruiz & Pav. Chile. K11

lanceolata Hook.f. LANCE LEAF AZARA. Chile. K5

microphylla Hook.f. BOXLEAF AZARA. Chile. D7 D8 G5 P10, not found I8

petiolaris Johnst. (*A.gilliesii*) HOLLY LEAF AZARA. Chile.

H&S 1947, I8 (NM); EWH seedlings 1987, I8 S7.

serrata Ruiz & Pav. Chile. Goodwin1986, I7

Baeckia: Myrtaceae (1+0=1)

virgata Andr. TWIGGY HEATH MYRTLE. Australia. EWH seedling F8+GC; I9

Banksia: Proteaceae (4+0=4)

N5 P10

collina R Br. HILL BANKSIA. Australia. not found J9 O10

ericifolia L.f. HEATH LEAF BANKSIA. Australia. Webb 1934, R6, not found O10

integrifolia L.f. COAST BANKSIA. Australia. D&D and Webb 1934, P5+MM P9+MM R6+MM

serrata L.f. SAW BANKSIA. Australia. Webb 1935?, P5 Q5

Beleporone: Acanthaceae (1+0=1)

guttata Brandeg. SHRIMP PLANT. Mexico. H11+MM

Berberidopsis: Flacourtiaceae (1+0=1)

corallina Hook f. Chile. White 1988, J7+GC dead. Nichols1989, I5 (NM);

Berberis: Berberidaceae (18+1=19)

C10 G9 H5 I8 K12 K13 L13 Q9

actinacantha Martelli. Chile. K6+MM

aristata DC. Himalaya. Hudson1988. M4 (NM)

x carminea Hort

'Buccaneer' not located K13

concinna Hook.f. China. not found P9, (plant at oregon flat incorrect); Jellyman 1988(Nepal), M4+AJ (dead)

darwinii Hook. DARWIN BARBERY. Chile. K6+MM, O7+GC(NM)

glaucocarpa Stapf. Himalaya. C12+GC E9+MM G10+GC

hypokerina Airey-Shaw. Burma. K12

jamesiana Forrest & Smith. China. K12+MM M6+MM

lempergiana Ahrendt. China. K12+MM

linearifolia Phil. Chile. K12 ?

x lologensis Sandwith. (*darwinii x linearifolia*). Hort. K6+MM

morrisonensis Hayata. Taiwan. not located K13

orthobotrys Schneid. Kashmir. not located H8

panlanensis Ahrendt. China. K12+MM

sargentiana Schneid. China. K12+MM

siano-china (NNC) K12+CN

thompsoniana (Name not confirmed). Scrivener 1988(Nepal) M4+GC

vernae Schneid. China. I9

yunnanensis Franch. China. L13

Beschorneria: Amaryllidaceae (1+0=1)

yuccoides K Koch. Mexico. L5

Betula: Betulaceae (33+3=36)

B6 B7 F4 F5 G4 I3 L5 L7 O7 O8 P8 R8 R10 R10 Q4

albo-sinensis var. *septentrionalis* Schneid. China. H&S 1965, O8;

DSIR 1978&79, not found F4 G5; Cave1989 F5;

coerulea-grandis Blanchard. BLUE LEAF BIRCH. USA, Canada.

H&S 1954&64, J2, not found J7 O7

costata Trautv. Manchuria, Korea. H&S before 1966, G4(hyd); H&S 1966 P9(NM); Appleton 1988, Nursery

- ermanii* Cham. ERMANS BIRCH. Asia, Japan, Korea. Appleton 1988, G4(NM)
var. japonica (Shiraz)Koidz. Japan. H&S 1948&56, not found G4 P8 (Basinhead ?)
x fetisowii C.Asia. H&S 1955 I4; DSIR Ax 1978, not found G4 F4
grossa S&Z. JAPANESE CHERRY BIRCH. Japan. H&S 1967, not found R9
jacquemontii Spach. WHITE BARKED HIMALAYAN BIRCH. Himalaya. DSIR Ax 1978, H4
jacquemontii hyd ? Ex seed Villa Taranto Italy 1967, E11+BB
x koehnei Schneid. (*papyrifera x verrucosa*). Hort.? DSIR Ax 1978, F5; H&S 1966, not found S9
lenta L. SWEET BIRCH. E N America. H&S 1964, not found Q8; Berry(ex Pennsylvania)1988, seedlings in nursery
luminifera Winkl. China. Cave1987, F4 F5
lutea Michx. (*B.alleghaniensis* Britt.) YELLOW BIRCH. EN America H&S 1948, P5; F5
maximowicziana Regel. MONARCH BIRCH. Japan. FRI Ch(ex seed Rubesibe, Japan) 1977, G5
medwediewii Regel. TRANSCAUCASUS BIRCH. Transcaucasus. DSIR Ax 1979, G5
middendorffii Trautv. & Mey. Siberia. H&S 1966, not found P9
nigra L. RIVER BIRCH. E USA. Appleton1985, C7+MM; Harrison 1977, P8+MM O8+MM
‘Heritage’ Cave 1987. G5+GC
neolaskana Sarg. see *B.papyrifera var. humilis*.
occidentalis Hook. WATER BIRCH. USA. Appleton 1988. D7+GC
var. inopena (Name not confirmed). Berry(540m N California)1987, D7
papyrifera Marsh. PAPER BIRCH. N America. H&S 1949&54, I3 E10, not found H4 (WL?)
var. commutata (Reg.)Fern. NW USA. DSIR 1978, F5, H&S 1956 not found P5
var. humilis (Reg.)Fern&Raup. (*B.neolaskana*. Sarg)
USA to Alaska. DSIR 1979, G4 labelled *neolaskana*.
var. kenaica (Evans)Henry. KENAI BIRCH. Alaska. H&S 1948, G4 F5, not found E10 or O7
pendula Roth. SILVER BIRCH. Europe. D&D 1934, D9 D10 E8 F3 F6 H6 I2 I3 I8(largest) I11
J4 K3 N3 P9 Q3 Q7 Q8 R6 S8
‘Dalecarlica’ SWEDISH BIRCH, R7, not found I8
‘Tristis’ WEEPING SILVER BIRCH, DSIR Ax 1977&78, G5 P8 Q7, not found F4
platyphylla Sukatev. ASIATIC WHITE BIRCH. Manchuria, Korea.
var. japonica (Miq)Hara. NE Asia. H&S 1949, L12
var. rockii (Rehd.)Rehd. (*rockii*) China, Tibet. H&S 1967, not found R7
var. szechuanica (Schneid)Rehd. SZECHUAN BIRCH. China. H&S 1948, O9
populifolia Marsh. GRAY BIRCH. E N America. FRI Ch 1977, not found H8; Appleton1987 I5; G5;
pubescens Ehrh. Europe to Siberia. J7 M4 P7; Appleton 1988 P0+GC;
raddeana Trautv. Caucasus. Armstrong. F4+GC
schmidtii Reg. Japan, Korea, Manchuria. Cave1987, G5
turkestanica Litvin. TURKESTAN BIRCH. Turkestan. H&S 1967?, not found O7
utilis D Don. HIMALAYAN BIRCH. Himalaya, Kashmir. DSIR Ax 1979, G5
verrucosa Ehrh. see *B. pendula*
- Bomarea: Amaryllidaceae (2+0=2)**
caldasiana Herb. N & S America. not found M5
multiflora (L.f.)Mirb. Columbia. Nichols 1988, L5+GC
- Bowkeria: Scrophulariaceae (1+0=1)**
gerardiana Harv. S Africa. D&D 1938, K9
- Brachychiton: Sterculiaceae (2+0=2)**
acerifolium F.v.Muell. (*Sterculia acerifolia*) FLAME TREE. Australia. M4

- populneum* (Cav)R Br. (*B.diversifolium*, *Sterculia diversifolium*)
KURRAJONG. Australia. H9+DJC I11+DJC
- Brachyglottis: Asteraceae (1+0=1)**
repanda JR & G Forst. RANGIORA New Zealand.
- Broussonetia: Moraceae (1+0=1)**
papyrifera (L.)L'Her. PAPER MULBERRY. China Japan. H&S 1964, L10 S8
- Brugmansia: Solanaceae (1+0=1)**
sp Bull 1988 M4
- Buddleia: Loganiaceae (16+4=20)**
D9 E9 G5 I5 L6
- alternifolia* Max. FOUNTAIN BUDDLEIA. China. E7 H9 R10
- auriculata* Benth. S Africa. E10+GC
- caryopteridifolia* W W Sm. China. H&S 1949, not found L8
- colvillei* Hook. f. Himalaya. Ormond 1988, M4+GC
- crispa* Benth ex Wall. India. H&S 1964, H9(gone); J10(seedling from H9) (NM);
Cave 1988, M6+GC; not found S6;
- davidii* Franch. (*variabilis*) China. S5 I9
'Alba' Collier 1988, K10+GC (NM);
'Black Knight' Bull 1988, L5
'Empire Blue' H&S 1935 O9, the S5 one?, not found F3
- dysophylla* (Benth)Radlk. S Africa G10+BS, I11+BS
- fallowiana* Balf.f.& W W Sm. China Collier 1988, K10+GC (NM);
- farreri* Balf f. & WW Sm. China. Stevens 1935, H7;
- globosa* Hope. ORANGE BALL TREE. Chile, Peru. B6 C7
- 'Lochinch' Hort. Collier 1988, K10+GC (NM);
- madagascariensis* Lam. Madagascar. Denes 1988, I11+GC
cuttings from above, K10+GC (NM); R6+GC (NM);
- nivea* Duthie. China. M6+BS
- officinalis* Max. China. H&S 1948, E10
- pteroaulis* A B Jacks. Himalaya, Burma. H&S 1948, E10
- saligna* South Africa. I10+BS
- salviifolia* (L.)Lam. SOUTH AFRICAN SAGEWOOD. S Africa. B6+GC, not found H9
- Buxus: Buxaceae (1+1=2)**
sempervirens L. COMMON BOX Europe. P5
'Argentea' VARIEGATED BOX L4
- Calliandra: Fabaceae - Mimosaceae (2+0=2)**
portoricensis (Willd)Benth. WHITE TASSEL FLOWER. Mexico, W Indies. H11+MM
- tweedii* Benth. RED TASSEL FLOWER. Brazil. Anderson 1933? died; Avalon1987, H11+MM
- Callicarpa: Verbenaceae (3+0=3)**
bodinieri var. *giraldii* (Rehd)Rehd. BEAUTY BERRY. China Appleton1986, M4 (NM)
- dichotoma* (*purpurea*) Korea, China. Martins1989 M4(NM)
- japonica* Thunb. BEAUTY BERRY. Japan. Hudson1985, M4 (NM)
- Callicoma: Cunoniaceae (1+0=1)**
serratifolia Andre. Australia. 1934?, M5+BB
- Callistemon: Myrtaceae (8+1=9)**
C10 I9 R6 Q10(BH12)
- citrinus* (Curt)Skeels. (*C.lanceolatus*) CRIMSON BOTTLEBRUSH. Australia. R10

coccineus F Muell. Australia. not found H10 (under large *A. buergeranum*?)

linearis (Sm)DC. Australia. R10

pheoniceus Lindl. Australia. Q10, not found H10

'Red Cluster' (NNC) G8

rigidus R Br. Australia. G8

salignus (Sm)DC. Australia. G8

speciosus (Sims)DC. Australia. not found H9

violacea (Name not confirmed). G8

Calocedrus: Cupressaceae (3+0=3)

decurrens (Torr)Florin. (*Libocedrus d.*) INCENSE CEDAR. SW USA. D5+McKG4, H7+GC

formosana (Florin)Florin. (*Libocedrus f.*) Taiwan. 1955?, G4 G9

macrolepis Kurz. (*Libocedrus m.*) China. H&S 1951, not found H7

Calodendrum: Rutaceae (1+0=1)

capense (L.f.)Thunb. CAPE CHESTNUT. S Africa. D&D 1938, M8

Calycanthus: Calycanthaceae (2+0=2)

S5

floridus L. CALIFORNIA ALLSPICE. USA. H&S 1945; Appleton 1987, Q5+GC;

occidentalis Hook & Arn. USA. L6+GC,

Camellia: Theaceae (17+198=215)

'Barbara Clark' (*saluenensis x reticulata*). O8

'Brian Doak' (seedling of 'Tali Queen'). O8

chrysantha China. Lemard 1988, H11+GC

'Cornish Snow' (*saluenensis x cuspidata*) H&S 1948?, I8+MM

cuspidata Veitch. (*Thea cuspidata*). China. H&S 1947?, I10

drupifera see *oleifera*

'Frances L.' (*saluenensis* 'Apple Blossom' x 'Buddha'). Hort. Cave 1988, L4+GC

granthamiana Hong Kong. Koromiko nursery 1981, H8

x heterophylla 'Barbara Hillier' (NNC) H&S 1958, P9 P10

higo types

'Hi-no-hakama' (higo type) J6 J7+MM M5

'Hi-no-maru' (higo type) J10 M6

hongkongensis Hong Kong. Koromiko nursery 1981, H8

'Inamorata' (*saluenensis x reticulata*) Hort. I8

'Inspiration' (*saluenensis x reticulata*) Hort. H&S 1960 Q5, not found H10

japonica

'A D Elosin' (Name not confirmed). H4

'Alba Plena' not found H10

'Alba Simplex' not found R8

'Alexander Hunter' H4, not found O7

'A M Hovey' (Name not confirmed). H11 I9

'Anemoniflora' R7, not found H11

'Angela Cocchi Rouge' (Name not confirmed). R7

'Anna M Page' (Name not confirmed). R7

'Apaueformis' H10

'Arajishi' E10 I11

'Aspasia' F10 H4 I10 L4, not found L13

- 'Auguste Delphonse' (Name not confirmed; 'Auguste Delfosse' ?). not found R8
 'Begonia' (Name not confirmed). R5
 'Bessie MacArthur' (Name not confirmed). not found H10
 'Blanche' (Name not confirmed). not found K7
 'Blanda' cerise red J7
 'Blood of China' P10
 'Bonomiana' not found H11
 'Campanulata' (Name not confirmed). not found R6
 'Carnation Pink' (Name not confirmed). D&D 1934, 19
 'Chandleri' I10, not found H11
 'Chisyu Kiku Rosey Crimson' (Name not confirmed). H4
 'Cho Cho San' I10, not found H11
 'C H Hovey' L8 M3
 'C M Hovey' I10 I11 M6
 'C M Wilson' not found H10
 'Colleen Temple' x 'Daitarin' I10
 'Contessa Fozzoni' (Name not confirmed; 'Contessa Tozzoni' ?) H10
 'Crimson Waratah' (Name not confirmed). R7
 'Daikagura' D8, not found Q8
 'Daitarin' (higo type) P5, not found H10
 'Dark Red' (Name not confirmed). not found H10 M4
 'Debutante' I8
 'Deep Pink Salmon' (Name not confirmed). M4
 'Dolly Hussey' (Name not confirmed). O6
 'Dorothy Jessup' (Name not confirmed). not found Q8
 'Double Rose Pink' (Name not confirmed). Webb 1935, M4
 'Dr Tinsley' N5 Q7, not found H10
 'Duchess of York' ('Lady Loch') Webb 1934, I11, not found H4
 'Edith Linton' D8, not found Q8
 'Edward Billing' ('Lady Loch') D&D 1934, J8 M3
 'Elegans' I8
 'Emporer of Russia Variegated' ('Czarina', 'Great Eastern':NZ) H4
 'Engladine No 1' (Name not confirmed). not found Q8
 'Firefalls' (Name not confirmed). Q7
 'Flame' ('Moshio') P9+MM
 'Frances Haver' (Name not confirmed: 'Frances Hanger' ?). N7
 'Frau Mina Seidel' ('Usu Otome', 'Pink Perfection') J10
 'Governor Mouton' not found H10
 'Grandiflora' I9+MM J8+MM L6+MM M4+MM
 'Great Eastern': true (Australian) I10+CN
 'Great Eastern':NZ L4, not found M3 H11
 'Great Western' (Name not confirmed). J7
 'Hanafuki' not found H10 P8
 'Ha-natashawan-Bawa' (Name not confirmed). Q10
 'Harriet Beecher Sheather' R7

- 'Hassaku' ('Beni Hassaku')** I8 H10+MM R5
'Helenor' I8 L9+MM, not found Q8
'Henry Favre' D&D 1934, not found M4
'Hikama' (Name not confirmed). not found N6
'Hikaru genji' I9+MM
'Hi-otome' (Name not confirmed). R7
'Hishatsakuma' (Name not confirmed). not found R8
'Imperator' R7, not found Q8
'Isabella' (Name not confirmed). Webb 1935, H9, not found Q8
'Jean Lynne' R7
'Jenny Lind' R7
'John Illges' (Name not confirmed). not found H10
'Joseph Pffingstl' I9
'Jouvan' I11, not correct
'Jupiter' H&S 1951 not found R6
'Kingyo Tsubaki' ('Apuaeformis') see above
'Kramers Supreme' Q7
'K Sawada' shifted to P5
'Kumasaka' R7
'Lady Beresford' (Name not confirmed). not found R8
'Lady Charlotte' (Name not confirmed). P9
'Lady Clare' ('Akashigata') M3 H9, not found Q8
'Lady Parker' (Name not confirmed; 'Lady Parker Peony' ?). M4, not found H11
'Lady St Clair' (Name not confirmed). I9 R7
'La Graciola' H11 I9
'Large fruited form' (Name not confirmed). Berry 1988, M3+BB
'Latifolia' I8 R7
'Levertons' (Name not confirmed). not found Q8
'Leviathan' not found H10
'Look Away' H10+MM
'Madame Hahn' shifted to P5
'Madame Pepin' H9
'Magnoliiflora' H&S 1951 I10
'Magnoliiflora Alba' ('Miyako dori') R5
'Mamoro Wabusuki' (Name not confirmed). I10
'Maroona' (Name not confirmed). D8, not found R8
'Mary Charlotte' P10
'Masterpiece' (Name not confirmed). Q7
'Mathiotiana' F10 I9 H11 J7 M3 M4 O8, not found P10
'Mena Ladnier' P10+MM
'Metallica' (Name not confirmed). R7
'Mikanike' (Name not confirmed). L5
'Miss Most' (Name not confirmed). not found R8
'Moonlight' (Name not confirmed). H10 I10 K5(or is it Nishiki)
'Mrs Greer' (Name not confirmed). I10(counterlabelled 'Carnation Pink')

- 'Mrs Henry Boyce'** ('Paolina Maggi Rosea') I9+MM
'Mrs Tinsley' (Name not confirmed). not found H10
'Nagasaki' ('Lady Audrey Buller') H&S 1951?, R5
'Nigra' (Name not confirmed). H&S 1951?, Q1
'Nishiki' (Name not confirmed). M4
'Nonogami' (Name not confirmed). not found M4
'Nonpareil' (Name not confirmed). M3 I11?
'Ochraleuca' (Name not confirmed). not found H10
'Oni Garona' (Name not confirmed). K8
'Paolina Maggi' not found Q8
'Paxtonii' (Name not confirmed). not found Q8
'Peach Blossom' ('Magnoliiflora':UK) I8
'Preston Rose' ('Duchess de Rohan') H9
'Prince Albert' ('Albertii') M4+MM
'Prince Frederick William' R7
'Prolific' (Name not confirmed). R7
'Pukekura White' (Name not confirmed). Q10
'Purpurea' ('Fuyajo') J6+MM
'Rachel' (Name not confirmed). I8
'Red Gem' (Name not confirmed). H11+GC
'Red Waratah' ('Mariana') H9 H11
'Rose Pink Waratah' (Name not confirmed). H9
'Rossii' (Name not confirmed). R7
'R.L. Wheeler' J10
'Sarah Frost' (Name not confirmed). H8
'Shiro Wabusuki' (Name not confirmed). J6 J7
'Shepherds Red' ('Speciosissima') M4
'Shiragiku' ('Purity') H10
'Shiro-giku' (Name not confirmed). not found Q8
'Shiro Taubuki' (Name not confirmed). R7
'Simeon' (Name not confirmed). Q7?
'Single Red' (Name not confirmed). M5? H5
'Sode kakushi' ('Gauntlettii', 'Grandiflora Alba') M5
'Souvenir de Bahuaud Litou' J10
'Speciosissima Rosea' (Name not confirmed). H4+MM
'Spencers Pink' E10+MM I10+MM
'Storeyii' not found H8
'Summersby' (Name not confirmed). not found H8
'Sunset Glory' (Name not confirmed). Q7
'Tabbs' not found Q8
'Tarona' (Name not confirmed). H11 M6
'The Czar' M4+MM
'Thelma Dale' Q7
'Thompsoni Rosea' (Name not confirmed). not found R8
'Tokyo' (Name not confirmed). not found H10

- 'Tomorrow'** Q7
'Ubane' ('Toki-no-Hagasane') not found P8
'Vicomte de Nieuport' (Name not confirmed). R7
'Villes de Nantes' Q7
'Virgins Blush' (Name not confirmed). I9
'Wabusuki' (Name not confirmed). H8 H9 O8, E10? or is it 'Spencers Pink'
'White Hibiscus' (Name not confirmed). I10
'White Swan' (Name not confirmed). P10
'Winter Cheer' (Name not confirmed). R7
'Woodsii' (Name not confirmed). not found Q8
'Wrightii' (Name not confirmed). D&D, Webb 1935, I11, not found H9
'Yodo No Asahi' R7
'Yoibijin' I9 M5
'Yokohama' ('Sode kakushi') E5 P10
'Yuki Botan' ('Pride of Descanso') P9
'Yukumi Iurema' (Name not confirmed). K8, not found P10
- kissi* India, China. Jellyman1988, M4+GC
lutchuensis Japan. Koromiko nursery 1981, H8
oleifera (drupifera) India, Burma, S.China. Koromiko nursery 1981, H8, J8, K7, P10
'Phyl Doak' (*reticulata* x *saluenensis*) O8 Q7, not found H10
reticulata China. H&S 1949, K8 H8, not found P10
- wild form** P9
types H9 I9 J8 L4 M4
'Buddha' I8
'Captain Rawes' H11, not found H10
'Forrest' ? (Name not confirmed). I10
'Mary Williams' (Name not confirmed). H&S 1960, check H8
'Tali Queen' H&S 1960?, I8
- rocueflora* (Name not confirmed). Koromiko nursery 1981, H8
rosaeflora Ceylon. not found H8
saluenensis Yunnan. H9
saluenensis var. *latifolia* (Name not confirmed). H&S 1951, not found P10
sasanqua Japan.
- 'Autumn Beauty'** (Name not confirmed). M4
'Azuma Nishiki' ('Eastern Brocade') not found H11
'Beni Zuri' (Name not confirmed). H9
'Bonigiri' (Name not confirmed). H9
'Charles Micheal' I10
'Exquisite' J10 R7
'Hijuki Nishiki' (Name not confirmed). I11
'Hinotsukama' (Name not confirmed). H11 M5, not found H9 K7
'Hiryu' ('Kanjiro') L5 K5 M4
'Mine-no-yuki' not found H11 M4
'Monogono' (Name not confirmed). L6 M4
'Onigarona' (Name not confirmed). K7

- 'Pink Snow' K8
 'Plantation Pink' I9, not found H10 H11
 'Red' (Name not confirmed). H9
 'Swell Pink' (Name not confirmed). L6
 'Variegata' H9

sinensis India, China. H11 L6+GC

tenuifolia (*tenuiflora*) Taiwan. Koromiko nursery 1981, H8

transnokoensis Taiwan. H11+GC

tsai Yunnan, Burma, Vietnam. Koromiko nursery 1981, not found H8; Lennard1988, H11+GC

x vernalis 'Dawn' (Name not confirmed). I10

x williamsii (*japonica x saluenensis*)

'Bartley' H9

'Donation' I10, not found H10 R5

'J C Williams' H&S1951, H8 H9 I10

'St Ewe' H&S1954, I10

Misc D6 (CP505), D7(CP431), D7(CP428), D8(CP459), D9 single pink CP428, E10two, F10 three by cottage, H4 four, H5, H8 Ga 826, H11 six, I4two, I7, I8 three, I9 Ga820, Ga 870, Ga855, I10 Ga753 Ga764, Ga763 Ga759 Ga805 Ga801, J8two, J10one, K5 several, L6five, L8 one, M3two, M4 four, M5two, P5 three, P10 two, Q5five, R6two, Q10 one, R5 six

Campsis: Bignoniaceae (1+1=2)

H8

grandiflora (Thunb)Schumann. TRUMPET CREEPER. China H11

x tagliabuana (Vis)Rehd. Hort.

'Madame Galen' Nichols 1988, L5+GC

Carpenteria: Saxifragaceae (1+0=1)

californica Torr. California. I10+GC

Carpinus: Betulaceae (8+2=10)

betulus L. COMMON HORNBEAM. Europe. H&S 1949, D10+MM

K11+MM K12+MM L12+MM; Appleton 1988, M5+GC (NM);

'Asplenifolia' stock C10

'Fastigiata' PYRAMIDAL HORNBEAM, I3+MM Q2+MM R3+MM

caroliniana Walt. AMERICAN HORNBEAM. E N America. H&S 1948, S5+MM, not found C10

cordata Bl. Japan. H&S 1959, Q4, not found K13

costata Bl. E Asia. PS(ex seed Mt Kyebang, Korea) (NM);

henryana (Winkl)Winkl. China. H&S 1959, S3+MM

japonica Bl. JAPANESE HORNBEAM. Japan. H&S 1949&59, S3+MM, not found K12

tschonoskii Max. China. H&S 1959, Q4+GC

turczaninowii Hance. China, Korea. H&S(IDS) 1979, G7

Carpodetus: Escalloniaceae (1+0=1)

serratus JR & G Forst. PUTAPUTAWETA. NZ. M6

Carya: Juglandaceae (7+0=7)

aquatica (Michx f.)Nutt. WATER HICKORY. SE USA. DSIR Ak 1981, D7

cordiformis (Wang.)K Koch. BITTERNUT HICKORY. N N America. H&S 1956, I3

glabra (Mill)Sweet. PIGNUT. E USA. Hamilton1983, E4 F6

illinoensis (Wang.)K Koch. (*pecan, oliviformis*). PECAN. USA. H&S 1959, K6; S2 (NM);

laciniosa (Michx f.)Loud. BIG SHELLBARK. USA. Hamilton1988, K2+GC

ovata (Mill)K Koch. SHAGBARK HICKORY. USA. H&S 1959, E11

tomentosa Nutt. MOCKERNUT. USA. H&S 1959, Q5 (NM)

Cassia: Fabaceae - Caesalpinaceae (1+0=1)

tomentosa L.f. GOLDEN SHOWER. Asia. H&S 1947?, R5 R10+DJC

Castanea: Fagaceae (2+0=2)

crenata S&Z. JAPANESE CHESTNUT. Japan. Berry(seed 1980), F6+GC

sativa Mill. SWEET CHESTNUT. Asia minor, Europe, N Africa.
H&S 1948, C11 D11 K12, not found D4

Castanopsis: Fagaceae (1+0=1)

tribuloides (Smith)A D C. China. Jellyman(AJ120)1987 L3(NM);

Castanospermum: Fabaceae - Papilionaceae (1+0=1)

australe A Cunn & Fras. MORETON BAY CHESTNUT. Australia. N8

Casuarina: Casuarinaceae (1+0=1)

P6

Catalpa: Bignoniaceae (5+2=7)

bignonioides Walt. INDIAN BEAN. USA. D4+GC

‘Aurea’ H7+GC

bungei C A Mey. China. Gallen ex Hudson 1988, D10+GC (NM);

x erubescens Carr. (*bignonioides x ovata*). Hort.

‘Purpurea’ Cave1987, C10

fargesii Bur. China. H&S 1950, D10 S7

f. duclouxii (Dode)Gilmour. China. H&S 1948, D10, ex seed 1981 E10

ovata G Don. China. C10; Mortimor 1988, T7+GC (NM);

Catha: Celastraceae (1+0=1)

edulis (Vahl) Forrsk ex Endl. ABYSSIAN TEA. Africa. Denes 1988, M4+GC

Ceanothus: Rhamnaceae (3+1=4)

P5 R6 S5

cyaneus Eastw. W USA. not found I8

x delilianus Spach. (*americanus x coeruleus*). Hort.

‘Gloire de Versailles’ I8, not found L6

impressus Trel. W USA. K9? S5

rigidus Nutt. W USA. Stevens 1935?, not found R6

Cedrelea: Meliaceae

see *Toona*

Cedrus: Pinaceae (5+5=10)

D8 G3 J10 K5

atlantica Manetti. ATLAS CEDAR. NW Africa. C7? K4+GC L4

‘Aurea’ GOLDEN ATLAS CEDAR. H&S 1952, F3+GC H7

f. glauca Beissn. BLUE ATLAS CEDAR. B6 C5 C7 C8 D6 D7 E5 E8 E10 F5 G3 G4

H9 I6 I7 I8 I9 J7 K5 K9 L7 L9 M8 N4 N6 N7 N8 O9 O10 P6 R2 R10 S7

T4 (NM);

‘Glauca Pendula’ Q10

brevifolia (Hook f.)Henry. CYPRESS CEDAR. Cypress. Cave1988, C8+GC

deodara (D Don)G Don. DEODAR CEDAR. Himalaya. C4 C6 C11 E5 F9 G9

I11 K7 P8 R5 R7 R8 S6 S7 S8

‘Aurea’ GOLDEN DEODAR, B5+GC O2+MM R5M, not found J10

‘Robusta’ Cave 1988, D8+GC(NM); H&S 1952, L8;

libani A Rich. CEDAR OF LEBANON. Lebanon. D7+GC

'Sargentii' WEEPING CEDAR OF LEBANON. H&S 1956, H9

Celastrus: Celastraceae (3+0=3)

H8

loeseneri Rehd & Wils. China. H&S 1951, not found O9

orbiculatus Thunb. ORIENTAL BITTERSWEET. China. H&S 1949, M5 I9 O9

rosthornianus Loes. China. not found M5

Celtis: Ulmaceae (7+0=7)

Q7

australis L. NETTLE TREE. Europe, Africa, Asia. H&S 1947&49, F12+MM R7, not found K7 K11

biondii Pampan. China. Berry(seed Kyoto Bot Gardens), P5+GC

caucasica Willd. E Europe, W Asia. D&D 1939, not found P5

glabrata Planch. Caucasus, Asia minor. H&S 1957, H2+MM

laevigata Willd. (*mississippiensis*) USA. H&S 1949, E12+MM, P5+GC

occidentalis L. HACKBERRY. N America. H&S 1949, F11+MM, not found R7

sinensis Pers. CHINESE HACKBERRY. China, Japan, Korea. Berry(seed UK), P5+GC, R6+GC

Cephalotaxus: Cephalotaxaceae (4+0=4)

fortunei Hook. CHINESE PLUM YEW. China. J9, M5+CN

harringtonia K Koch. COW'S TAIL PINE. E Asia.

harringtonia var. *drupacea* (S&Z) Koidz. JAPANESE PLUM YEW. Asia. H&S 1951, I4

harringtonia var. *drupacea fastigiata* (Name not confirmed). M7

Ceratonia: Fabaceae - Caesalpinaceae (1+0=1)

siliqua L. CAROB. Meditt. M9 Q9

Ceratopetalum: Cunoniaceae (2+0=2)

apetalum D Don. COACHWOOD. Australia. 1938?, M3

gummiferum Sm. CHRISTMAS BUSH. Australia. 1938?, R5, not found H10

Ceratostigma: Plumbaginaceae (1+0=1)

willmottianum Stapf. China. H9+MM

Cercidiphyllum: Cercidiphyllaceae (2+0=2)

japonicum S&Z. KATSURA TREE. Japan. 1935?, H5+MM H6+MM H10 I7
I9+MM M4; Cave 1988 Q4+GC (NM);

japonicum var. *sinense* Rehd & Wils. not found (tree at M4 is *japonicum*)

Cercis: Fabaceae - Papilionaceae (5+2=7)

canadensis L. EASTERN REDBUD. USA. R5+MM P5+MM.

'Forest Pansy' P5

chinensis Bge. CHINESE REDBUD. China. D&D 1934, B5+MM K5+MM; Heritage 1986 I7?

occidentalis Torr. CALIFORNIA REDBUD. USA. PS(ex seed UK), F8+GC

racemosa Oliv. China. H&S 1948, G5+MM K6+GC

siliquastrum L. JUDAS TREE. Europe. C6+MM H6+CN H9+MM I7+MM J9+MM

'Alba' Ormond 1988, K10+GC (NM); Roberts(ex Farndon) 1987, L6 dead

Cestrum: Solanaceae (2+0=2)

aurantiacum Lindl. Guatemala. H8+MM

elegans (Brong.) Schlect. (*purpureum*) Mexico. not found H10

Chaenomeles: Rosaceae (2+1=3)

H5 white, I8 I10 N5 white, N7 three N8 white

cathayensis Schneid. (*Cydonia cathayensis*) China. I7 L6

speciosa (Sweet)Nakai. (*Cydonia speciosa*) JAPONICA. Japan. not found H8 O8

‘Falconet Charlot’ not found O8

Chamaecyparis: Cupressaceae (7+32=39)

formosensis Matsum. FORMOSAN CYPRESS. Taiwan. not found N8, (a form of laws?(BB))

funbris (Endl)Franco. China B6 D7 D8 E5 G10 I6

lawsoniana (Murr)Parl. LAWSON CYPRESS. N America. Goudie 1934. B5 B6 C4 F7 J5 J6 J7 K6 M5

forms D5(CP590, CP) M6 yellow

‘Albospica’ not found I11

‘Darleyensis’ not found H9

‘Duncanii’ M6

‘Filifera’ E5(‘Filiformis Elegans’ +CN) J7 L4

‘Filifera Aurea’ M6

‘Fletcheri’ N6

‘Glauca’ I7

‘Lutea’ H9

‘Lycopodioides’ D5+CN

‘Minima’ not found M7

‘Naberi’ Orchard Hill

‘Nidiformis’ not found I11

‘Pottenii’ K7

‘Variegata’ E6

obtusa (S&Z)Endl. HINOKI CYPRESS. Japan, Taiwan. M7

‘Aurea’ GOLDEN HINOKI CYPRESS, not found M7

‘Aurea Youngii’ M6 M7

‘Compressa’ not found B6

‘Cripsii’ not found B6

‘Nana’ D&D 1935, M6 M7 L6

‘Nana Albo Variegata’ M7

‘Nana Aurea’ M6

‘Nana Variegata’ M6

‘Pygmaea’ not found M7

‘Variegata’ ?? H11

‘Youngii’ M6

occidentalis (NNC) E6

pisifera (S&Z)Endl. SAWARA CYPRESS. Japan. C5 M6 N6

‘Filifera’ E5

‘Filifera Aurea’ I8 N7 (these two not the same)

‘Plumosa’ C6 M3(felled) R10+MM

‘Plumosa Aurea’ I8

‘Plumosa Aurea Compacta’ D&D 1935, M6

‘Squarrosa’ Q7 R10, not found L6

thyoides (L.)BSP. WHITE CEDAR. USA. C5

‘Ericoides’ (Carr)Sudw. USA. M6

Chimonanthus: Calycanthaceae (2+2=4)

- praecox* (L)Link. (*C. fragrans*) WINTERSWEET. China. H4 labelled fragrans (Hillier Dam);
I6 not rolled, pale (near Shaltos); I8 not noted (white rail border); N7 not rolled (start 3 pathes)
praecox form H10+MM bright yellow, more scent, shorter petal (Willmot bed); H11 (Garry's tank)
praecox 'Parviflorus' I7 rolled, pale (troll bridge), O9 rolled (end brown oak),
I9 pale, slightly rolled (Gordonia bed)
praecox 'Grandiflorus' F10 dark centre, slightly rolled (above cottage)
yunnanensis W W Sm. China. Purdie(Hudson)1988, K7+GC

Chionanthus: Oleaceae (2+0=2)

- retusus* Lindl & Paxt. Korea, Japan. E10, dead Q5
virginicus L. EUSA. not found I8

Choisya: Rutaceae (1+0=1)

- ternata* HBK. MEXICAN ORANGE BLOSSOM. Mexico. E9+MM

Cinnamomum: Lauraceae (1+0=1)

- camphorum* (L)Presl. CAMPHOR TREE. E Asia, Africa. L12+GC O9+GC

Cissus: Vitaceae (1+0=1)

- striata* Ruiz & Pav. Chile, Brazil. I8+JN,

Cistus: Cistaceae (2+2=4)

- I9 I10 L5(NM) N2(NM)
ladanifer L. N Africa. not found M7 S9
monspeliensis L. SW Europe. MONTPELIER ROCK ROSE. not located H10
x purpureus 'Brilliancey' Hort. O9+MM
'Silver Pink' Hort. (*laurifolia x creticus*) O9+MM O10+MM

Citrus: Rutaceae (1+2=3)

- H9 H11 L5
grandis L. (*C. maxima*. (Burn)Merril) SHADDOCK. China, Asia
'Wheaney' not located H8 (removed)
limon (L)Burn. LEMON. Asia.
'Ponderosa' I10
sinensis (L)Pers. ORANGE. China. I10

Cladrastis: Fabaceae - Papilionaceae (2+0=2)

- lutea* (Michx f.)K Koch. (*C. tinctoria*) YELLOW WOOD. N America. H&S 1955, K3
sinensis Hemsl. China. H3+GC

Clematis: Ranunculaceae (13+13=26)

- H11 I10purple,
armandii Franch. China. 1948, G5 I8 and naturalising
'Apple Blossom' I9+GC
'Snowdrift' H&S 1949, not found I8
balearica L.Rich. Corsica. not found H7
campaniflora Brot. Portugal. not found H10
cirrhusa L. Spain, Israel. H7+GC H8+GC
'Fair Rosamund' Hort. H11
florida Thunb. Japan.
'Sieboldii' (*C. sieboldii*) not found J8
grewiaefolia DC. Himalaya. I7+GC P5+GC
'Gipsy Queen' Hort. not found H10
'Madame Le Coutre' ('Marie Boisselot') Hort. not found H11

montana Buch-Harn. China, Himalaya. I7

‘Alba’ H8

‘Rubens’ H5 H8

‘Tetrarose’ Nichols 1988, L5+GC

napaulensis DC. (*forrestii*) China, India. H&S 1948, J9+GC

orientalis L. Himalaya. Nichols 1988, L5+GC dead.

paniculata Gmel. (*indivisa*) New Zealand. L11

parviflora fortunei (Name not confirmed). H10

‘Seriho’ (NNC) H11(NM)

serratifolia Rehd. Korea. H11

‘Sir Wolesley’ Hort. not found H11

texensis Buckl. Texas. not found H11

uncinata Champ. China. H&S 1947, not found I8

‘Ville de Lyon’ Hort. not found H10

‘W E Gladstone’ Hort. not found H11

Clerodendron: Verbenaceae (2+0=2)

trichotomum Thunb. Japan, China. I9+MM

trichotomum var. *fargesii* China. Appleton 1988 K10+GC (NM);

Clethra: Clethraceae (3+0=3)

alnifolia L. N America. Pukeiti1985, O7 (NM);

barbinervis S&Z. Japan. H&S 1959/1955, J2+CN, not found H8

fargesii Franch. China. H&S 1957, Q4

Clanthus: Fabaceae - Papilionaceae (1+0=1)

puniceus Banks & Sol. KAKA BEAK. New Zealand. Dow ex Tologa Bay wild source, M4

Colquhounia: Lamiaceae (3+0=3)

coccinea Wall. Himalaya. Hudson 1988, M4+GC

var. *mollis* (Schlect)Prain. China. H&S 1948, not found H11

var. *vestita* (Wall)Prain. Hudson 1988, M4+GC

Coprosma: Rubiaceae (5+3=8)

acerosa naturalised Q1 (NM)

repens A Rich. TAUPATA. New Zealand. K12

‘Rebecca’ Bayley1987, H11

‘Variegata’ not found H10

rhamnoides A Cunn. New Zealand. K6 (NM) and naturalising

rigida Cheesmn. New Zealand. D7 (NM) and naturalising

robusta Raoul. KARAMU. New Zealand. FRI R 1979, M2 and naturalising

‘Gordons Gold’ Collier 1988, M4+GC (NM);

Cordylina: Agavaceae (2+2=4)

australis (Forst f.)Hook f. CABBAGE TREE. New Zealand. B H Just1920, D8 D9 E9
F9 G10 L4 L5; FRI R 1979, K1 L1 N1(all NM)

‘Albertii’ D&D1987, I7+GC

‘Purpurea’ Kew, D11 H10 I10

terminalis Kunth. Polynesia. not found H10

Coriaria: Coriariaceae (1+0=1)

arborea Lindsay. TUTU. New Zealand. L11

Cornus: Cornaceae (16+1=17)

- C12(white) F9 F10 K9 L11 P3 P4 Q3 Q4 Q5, S6(NM)
alba L. Siberia to Korea. Mortimor 1988, L6+GC (NM); not found I10;
anomum. Mill. America. Dene1986, M7
capitata Wall. STRAWBERRY TREE. Himalaya. J2 J3 H5 K3 L4 L5 L6 M4
chinensis Wang. RIMA DOGWOOD. China. Cave1986, M7
controversa Hemsl. TABLE DOGWOOD. Japan, China. Cave1987, I5+GC M7+GC;
 dead I8; Appleton 1988, S7+GC (NM);
florida L. FLOWERING DOGWOOD. N America. H7 I3 I7+CN J7+CN K6
f. rubra (West)Schnelle. PINK FLOWERING DOGWOOD. H6 I5 I7 L5 P3 P5 Q9,
kousa Hance. JAPANESE DOGWOOD. Japan. I7+MM, not found H6
var. chinensis Osborn. CHINESE DOGWOOD. China. H&S 1952, P5+MM
macrophylla Wall. Japan, China, Himalaya. Berry(ex Cholipo), M7; Jellyman(AJ40), L4 (NM); L5 (NM);
mas L. CORNELIAN CHERRY. Europe, Caucasus. PS (ex seed UK) 1981, D5+MM M7+GC; not found H8;
nutallii Audubon. PACIFIC DOGWOOD. N America. H&S 1949, G5+CN H5 K10 L5 Q8 R5
officinalis S&Z. Japan. Dene1987, M7
sanguinea L. DOGBERRY. Europe. not found C6
sessilis Torr. BLACKFRUIT DOGWOOD. California. PS(ex seed N California), 1981 M7
stolonifera Michx. RED OSIER DOGWOOD. E N America. not found H6
 'Flaviramea' Collier1988, L6 (NM); Cave1988, L6(NM);

Corylopsis: Hamamelidaceae (5+0=5)

- M6
griffithii Hemsl. Himalaya. Hudson 1988, M3+GC
pauciflora S&Z. Japan. Cave 1987, L5+GC
sinensis var. willmottiae Hemsl. China. H10 Q4
spicata S&Z. Japan. R6+GC
veitchiana Bean. China. H&S 1959, dead Q5

Corylus: Betulaceae (4+3=7)

- avellana* L. COMMON HAZEL. Europe. S4+GC,
 'Aurea' Bull 1987, I5+GC
 'Contorta' CORKSCREW HAZEL, H&S 1955, Q5
chinensis Franch. CHINESE HAZEL. China. H&S 1949, reverted to stock O4
colurna L. TURKISH HAZEL. Europe. H&S 1959, R3+GC; Mike Steven1986 R4+GC
maxima Mill. FILBERT. Europe, Asia minor.
 'Atropurpurea' E6+MM S5+MM
sieboldiana Bl. Japan. Gallen, F5+GC

Corynocarpus: Corynocarpaceae (1+0=1)

- laevigatus* JR & G Forst. KARAKA NZ. HB Williams1987 L3(NM);

Cotinus: Anacardiaceae (2+1=3)

- C6 D7 J7
coggygia Scop. SMOKE BUSH. China, Himalaya. D&D 1934,
 'Folius Purpurea' PURPLE SMOKE BUSH, D&D 1934, C6 D8 E6 H10 L8
obovatus Raf. N America. 1938?, C4+MM C8+MM I7+MM L6

Cotoneaster: Rosaceae (13+1=14)

- E5 F4 F5 J11(NM), J12, K5(NM), K6(NM), K12
affinis Lindl. Himalaya. F5+MM F10+BB K6+BB K12+MM
amoenus Wils. China. K5+BS (NM);

bullatus 'Floribundas' (Stapf).Rehd&Wils. China. D10+GC
conspicuus Margaurd. Tibet. J11+BS (NM);
franchetii Bois. China. I8+BS (NM); J8+BS (NM); L5+BS (NM);
frigidus Wall. Himalaya. B7+BS (NM); P5+BS (NM); not found H5 N6
glaucophyllus f. serotinus (Hutch.)Stapf. China. H6+BS; J8+BS (NM);
horizontalis Decne.
lacteus W W Sm. China. H5+BS, not located E5,
microphyllus Lindl. Himalaya, China. R4+BS
nitens Rehd. & Wils. China. H&S 1949, not located D10
pannosus Franch. China. J6+GC
simonsii Baker. Himalaya, India. I5+BS J1+BS, not found J8
x watereri Excell. (*frigidus x henryanus*). H5+BS

+ *Crataegomespilus*: *Rosaceae* (1+1=2)

dardarii Simon-Louis. BRONVAUX MEDLAR. Hort. H&S 1948&50, D12 R2
 'Asnieresii' H&S 1948&50, D10 S5

Crataegus: *Rosaceae* (28+7=35)

D7(430,427) D10(PP45, PP241) E11(164) G5(Ci269) I3(Ci467) I6(CaP147) I8(Ga922) J4(Ci445)
 J9(DP49) K9(DP91) K11(543) L3(Th1207) N9(DP90) K12(614) P1(GD28)
azarolus L. AZAROLE. Europe, N Africa, W Asia. H&S 1957, not found G3
chlorosarca Max. Manchuria. H&S 1957, not found G3
coccinoides Ashe. KANSAS HAWTHORN. USA. H&S 1948, E11
collina Chapm. SANDHILL HAWTHORN. USA. H&S 1958, H3
crus-galli L. COCKSPUR HAWTHORN. USA. not found E4 E11 G3
 'Pyracanthifolia' H&S 1948, E11
 'Splendens' H&S 1948, not found E11
douglasii Lindl. BLACK HAWTHORN. USA. H&S 1938, not found I4
x grigonensis Mouillef. Hort. H&S 1948, E12; Cave1988, V5 (NM);
holmesiana Ashe. E N America. H&S 1948, not found E11
jackii Sarg. JACK HAWTHORN. Canada. H&S 1948, E11
jonesiae Sarg. JONES HAWTHORN. N America. H&S 1948, E11
laciniata (orientalis) ORIENTAL THORN. Europe, Asia. H&S 1938, G5
laevigata see *oxycantha*.
macracantha see *succulenta var. macracantha*
mexicana DC. (*C. pubescens f. stipulacea*) Mexico. Q5+GC. Cave1988, S6 (NM);
missouriensis Ashe. USA. H&S 1949, D10 K12
mollis (Torr & Gray)Scheele. DOWNY HAWTHORN. USA. H&S 1947&51, E12
monogyna Jacq. COMMON HAWTHORN. Europe, Africa. not found O8
 'Biflora' ('Praecox') GLASTONBURY THORN. H&S 1947, E11+MM
orientalis Pall. Europe, Asia. see *C. laciniata*
oxycantha L. (*laevigata*. DC.) Europe, Africa.
 'Pauls Scarlet' ('Coccinea Plena') D&D 19347,
 H&S 1948, C4+MM I3+MM L13 Q1+MM, not found L6
 'Francois Rigaud' ('Fructo Lutea') YELLOW FRUIT HAWTHORN, H&S 1949, K12
 'Punicea' SINGLE RED MAY, H&S 1948&55, I3+MM K12+MM
persistens Sarg. Arnold Arboretum. H&S 1948, E11
phaenopyrum (L.f.)Med. (*cordata*) WASHINGTON THORN. USA. H&S 1938, K3 (NM); not found K2,

- pinnatifida* Bge. N E Asia, not found G3
var. major N E Br. China. H&S 1948, not found H3
polyclada (Name not confirmed). H&S 1956, not found G3
x prunifolia (Poir)Pers. Hort. H&S 1938, not found I8 K9 K12 L6 L7 M7
 'Splendens' H7
pubescens f. stipulacea see *mexicana*.
punctata Jacq. DOTTED HAWTHORN. E N America. H&S 1949, K12, not found E11
smithii I6 this plant may be *C.x smithiana*. According to K and Hortus, *C.smithii* does not exist, it is *C.uniflora*.
songarica Reg. (*C. altaica* Lange.) Turkestan. not found O9
submolliis Sarg. QUEBEC HAWTHORN. N America. H&S 1951, D11
succulenta var. macracantha (Lodd)Eggl. FLESHY HAWTHORN. USA. H&S 1948, not found E11
uniflora Muenchh. ONE FLOWER HAWTHORN. E USA. H&S 1948, not found C10
wilsonii Sarg. China. H&S 1948, E11

X Crataemespilus: Rosaceae (1+0=1)

- grandiflora* G Camus. Hort. H&S 1948&51&59, D10 E12 dead Q5

Crinodendron (Tricuspidaria): Tiliaceae (2+0=2)

- hookerianum* Gay. Chile. PS 1981, not found H8
patagua Mol. Chile. Goodwin 1986, J9 (NM);

Cryptomeria: Taxodiaceae (2+10=12)

- japonica* D Don. JAPANESE CEDAR. Japan. Goudie 1934, C6 C12 C13 D6 D12 F5 I5 I6 J4 J6
 J7 K4 K5 K8 L5 M3 M4 M7

form M7

- 'Bandai-Sugi' M6+JD (NM);
 'Compacta' D&D 1934, J7 M7
 'Elegans' D&D 1934?, D5 D6 I6 L6 O6
 'Elegans Aurea' not found M7
 'Fortunei' S7+GC
 'Globosa' Bull 1987, M6 (NM);
f. lobbii (Carr)Beissn. D&D 1934?, J7, not found I8
 'Monstrosa' L6+GC
 'Plumosa' B6+GC C6+GC N8+MM O8+MM
 'Viminalis' not found M7
 'Yueka' M6 M7

Cudrania: Moraceae (1+0=1)

- tricuspidata* (Carr.)Buraeu. China. Berry(ex Cholipo ex Mt Chi Korea)1988, M4+GC

Cunninghamia: Taxodiaceae (2+1=3)

C5

- konishii* Hayata. Taiwan. H&S 1949, E12+McK
lanceolata (Lamb)Hook. CHINA FIR. China. B6 C5 D6 D8 E6 I6 L4
 'Glaucua' E12+GC I7+GC

Cunonia: Cunoniaceae (1+0=1)

- capensis* L. BUTTERKNIFE BUSH. S Africa. Denes 1987, I10

X Cupressocyparis: Cupressaceae (0+1=1)

- leylandii* 'Variegata' Hort. M6+MM

Cupressus: Cupressaceae (13+5=18)

D5 E8 J7 O9

- arizonica var. arizonica* Greene. ARIZONA CYPRESS. USA. I7 I8

- benthamii* (Endl.)Carr. BENTHAM'S CYPRESS. Mexico. C5
 'Aurea' GOLDEN BENTHAM'S CYPRESS, removed F9
- cashmeriana* Royle ex Carr. KASHMIR CYPRESS. Kashmir. H&S 1949, F9+MM G4+MM
- chengiana* (NNC) Ormond 1988, S6+GC (NM)
- corneyana* Knight.ex.Carr. China. Hudson 1988, M3 (NM);
- duclouxiana* Hickel. China. K10+BS; Ormond 1988, S6+GC (NM);
- funeris* Endl. WEEPING CYPRESS. China. Webb 1935, B6 D7 D8 E5 G10 I6, not found J7
- glabra* Sudw. (*arizonica* var. *glabra*. (Sudw)Little.)
 SMOOTH ARIZONA CYPRESS. USA. G9 H9; McKean 1989, C7(NM);
- goeniana* Gordon. California. Tantrum 1988, C8+GC dead.
- guadalupensis* var. *forbesii* S Watts. GUADALUPE CYPRESS. Mexico, Guadalupe. Ormond 1988, F6+GC
- lusitanica* Mill. MEXICAN CYPRESS. Mexico to Honduras.
 'Glaucá' H&S 1949, not found I8
- macrocarpa* Hartw.ex Gordon. MONTEREY CYPRESS. California.
 'Donard Gold' GOLDEN MACROCARPA, H&S 1950, H9
 'Lutea' D&D 1934, E5 F5 H7 I8 O9 O10 P9 S5,
 Weeping form Cave ex Dunedin 1988, A12+GC (NM);
- sempervirens* var. *horizontalis* (Mill)Voss. Europe. not found L12
- sempervirens* var. *sempervirens* (*stricta*) ITALIAN CYPRESS. Europe
 D&D 1934, B5 F6 H4 H5 I5 I6 J4 J6 J7 L5 L6 M7
- torulosa* D Don. BHUTAN CYPRESS. Himalaya. NZFS? 1962?, O6 R7
- Cyathodes: Epacridaceae (1+0=1)**
fasiculata (Forst f.)Allan. MINGIMINGI. NZ. not found J6
- Cyphomandra: Solanaceae (2+0=2)**
betacea (Cav.)Sendth. TREE TOMATO. Peru. naturalised
fragrans (NNC) P Murphy(ex Food Resources Ltd)1987, H11
- Cyrilla: Cyrillaceae (1+0=1)**
racemiflora L. USA, W Indies. I8
- Cytisus: Fabaceae - Papilionaceae (2+0=2)**
multiflorus (Ait)Sweet. WHITE SPANISH BROOM. Spain, N Africa. H&S 1950, not found H9
procumbens (Willd)Spreng. PROSTRATE BROOM. Europe. H10
- Dacrycarpus: Podocarpaceae (1+0=1)**
dacrydioides (Rich)de Lauben. KAHIKATEA. NZ. FRI R 1979, I7, L3(bush)
- Dacrydium: Podocarpaceae (3+0=3)**
 F5
biforme (Hook f.)Pilger. PINK PINE. NZ. FRI R 1979, M2(bush)
colensoi Hook. SILVER PINE. NZ. D&D 1934, K7
cupressinum Lamb. RIMU. D&D 1934, E5 K7 Q10 M2(bush)
- Dahlia: Asteraceae (2+0=2)**
tenuicaulis Sorenson. Berry(ex Mexico)1987, H11
imperialis Roetzl.ex.Ortg. TREE DAHLIA. Sth America. Bush 1987, M4
- Dais: Thymeleaceae (1+0=1)**
cotinifolia L. S Africa. McKay 1988 J9+GC(NM), M4+GC;
- Daphne: Thymeleaceae (7+2=9)**
bholua (*Damon form*) Buch-Ham. Nepal, Bhutan, China. Cave, H11+GC
bholua Nepal, Bhutan, Assam. Jellyman 1988 M4(NM)
collina Smith. Italy, Asia minor. Cave 1988, H10+GC (NM);

- laureola* L. Europe, N Africa. H10+MM I8+MM I10+MM
mezereum L. Europe, Asian minor. McKean 1988, L6+GC (NM);
 'Alba' McKean 1988, L5+GC (NM);
x neopolitana Lodd. (*collina x cneorum*). Europe. H&S 1946, I10+GC
odora Thunb. China, Japan. I8+MM I10+MM,
 'Aureomarginata' not found H8
- Davidia: Davidiaceae (1+0=1)**
involutrata Baill. DOVE TREE. China. I8+MM P9
- Decaisnea: Lardizabillaceae (1+0=1)**
fargesii Franch. China. nursery
- Decumaria: Saxifragaceae (1+0=1)**
sinensis Oliv. China. H&S 1948, I8
- Desfontainia: Loganiaceae (1+0=1)**
spinosa Ruiz & Pav. Chile. Mike Steven 1986, P4+GC dead
- Deutzia: Saxifragaceae (2+3=5)**
 ES L8
gracilis S&Z. Japan. not found H10
x hybrida Hort.
 'Magician' Q5+GC
 'Montrose' E10+MM Q5+MM; not found H10 O7
scabra Thunb. Japan, China. E9+MM
 'Flore Plena' C10+MM D10+MM E8+MM E9+MM F9+MM
- Dichotomanthes: Rosaceae (1+0=1)**
tristanii Kurz. China. H&S 1948, K12+BS
- Dichroa: Saxifragaceae (1+0=1)**
febrifuga Lour. Nepal China. Scrivener(Nepal)1988, L4+GC dead
- Diervilla: Caprifoliaceae (1+0=1)**
lonicera Mill. E N America. Pukeiti 1986, F10 (NM); L5+GC; M4
- Diospyros: Ebenaceae (5+0=5)**
armata Hemsl. China. H&S 1948, reverted to stock at O2
ferrea var. *geminata* Australia. MAF Ruakura 1988, L4+GC
kaki L. COMMON PERSIMMON. China, Japan. not found I4
lotus L. DATE PLUM. China. PS(ex seed Japan) 1969, H9 S4
virginiana L. AMERICAN PERSIMMON. E N America. H&S 1938, G5+GC, O2+GC
- Dipelta: Caprifoliaceae (1+0=1)**
floribunda Max. China. Stevens 1935, L6
- Disanthus: Hamamelidaceae (1+0=1)**
cercidifolius Max. Japan, China. H&S 1956, dead; Pukeiti 1986, R6+GC
- Distylum: Hamamelidaceae (1+0=1)**
racemosum S&Z. Japan. H&S 1949, K11; E Martin 1988, I7+GC (NM); M6+GC
- Dodonaea: Sapindaceae (0+1=1)**
viscosa (L)Jacq. AKEAKE. New Zealand.
 'Purpurea' H10+MM
- Doryanthes: Amaryllidaceae (1+0=1)**
palmeri W.Hill. Australia. Freeman 1988, M4 (NM)
- Dovyalis: Flacourtiaceae**
caffra see *Aberia caffra*

***Doxantha*: Bignoniaceae (1+0=1)**

unguis-cati (L.)Rehd. CATS CLAW CREEPER. Argentina. Nichols 1987, I8, and pavillion

***Dregea*: Asclepiadaceae**

see *Wattakaka*

***Duranta*: Verbenaceae (1+0=1)**

repens (*plumieri*) USA to Brazil. 1986, I9+MM

***Duvalia*: Staphyleaceae**

see *Staphylea*

***Eccremocarpus*: Bignoniaceae (0+2=2)**

scaber Ruiz & Pav. Chile.

‘**Aureus**’ Nichols 1988, L5+GC

‘**Carmineus**’ Nichols 1988, L5+GC

***Edgeworthia*: Thymeleaceae (1+0=1)**

papyrifera Zucc. YELLOW DAPHNE. Japan, China. H10+MM

***Ehretia*: Ehretiaceae (2+0=2)**

dicksonii Hance. China. H&S 1948&56, L11

macrophylla Wall. H&S 1957, H3+IDS

***Elaeagnus*: Elaeagnaceae (4+2=6)**

x ebbingei Boom. (*macrophylla x pungens*). Hort. Q5

macrophylla Thunb. Japan, Korea. H&S 1938, H5

multiflora Thunb. (*longipes*) China, Japan. H6

pungens Thunb. Japan. H5

‘**Dicksonii**’ D8 J9, not found I11

‘**Maculata**’ K12 I11 M6

***Elaeocarpus*: Elaeocarpaceae (2+0=2)**

dentatus (JR&G Forst.)Vahl. New Zealand. FRI1979, L2(bush)

reticulatus Smith. Australia. Henderson 1988, L4+GC

***Embothrium*: Proteaceae (1+1=2)**

coccineum JR & G Forst. CHILEAN FIRE BUSH. Chile.

‘**Longiflorum**’ & ‘**Norquino**’ H&S 1949&55, M6, not found Q5

***Emmenopterys*: Rubiaceae (1+0=1)**

henryi Oliv. China. H&S 1947&55, C10 K11

***Enkianthus*: Ericaceae (2+0=2)**

campanulatus (Miq)Nichols. Japan. P5+GC

perulatus (Miq)Schneid. Japan. Webb 1935, I10+GC

***Erica*: Ericaceae (3+0=3)**

Two at Circus Corner, one at Black gates.

***Eriobotrya*: Rosaceae (1+0=1)**

japonica (Thunb.)Lindl. LOQUAT. China. C11 J3 J9 K3 H11 M3 M4? R5 S5

***Erythrina*: Fabaceae - Papilionaceae (1+0=1)**

crista-galli L. COMMON CORAL TREE. Brazil. M5 dead.

***Escallonia*: Saxifragaceae (2+3=5)**

D6 E5 F5 I9

‘**Apple Blossom**’ (*virgata x rubra* var. *macrantha*). Hort. not found P3

bifida Link & Otto. Brazil. H&S 1956?, E5+MM G10+MM G11+MM P3+MM P4+MM

‘**Donard Seedling**’ (*virgata x rubra*). Hort. H&S 1956, H3

laevis (Vell)Sleum. (*organensis*. Gardener.) Brazil. 1949, D10

'Langleyensis' (*virgata x rubra*). Hort. 15

Eucalyptus: Myrtaceae (11+1=12)

E8 F7 F8 G9 G11 I11 J2 J6 K6 M5 N5 N9 O6 O8 O10 P6 Q6 R6 R9 R10 S5

botryoides Sm. BUNGALAY. Australia. K9 N5+DJC

delegatensis R T Baker. ALPINE ASH. Australia, Tasmania. Goudie 1934, J5 J6

ficifolia F v Muell. SCARLET FLOWERED GUM. Australia. Goudie 1934?, M5, removed K6

leucoxyton 'Rosea' PINK FLOWERED YELLOW GUM, Goudie 1934, K6(NM)

O10+GC Q6(NM) Q10 R8(NM)

macarthuri Deane & Maiden. CAMDEN WOOLLYBUT. Australia. not found F7, removed F8

marginata JARRAH. Australia. Bull 1988, F7+GC

pulchella Desf. WHITE PEPPERMINT. Tasmania. D4 H9 K9 (also G9 I11?)

robusta Sm. SWAMP MAHOGANY. Australia. Bull 1988, G8+GC

sideroxyton A.Cunn ex Woolls. RED IRONBARK. Australia. L11

tetraptera Turcz. SQUARE FRUITED MALLEE. Australia. F8+GC

viminalis Labill. MANNA GUM. Australia, Tasmania. F7 F8 G7 G8, not found I11

woodwardii Maiden. WOODWARDS BLACKBUT. Australia. Bull 1988, G8+GC

Eucommia: Eucommiaceae (1+0=1)

ubnoides Oliv. H&S 1948&56. China. G9 N2

Eucryphia: Eucryphiaceae (5+0=5)

cordifolia Cav. Chile. Thermal 1988, K10+GC (NM);

x hillieri Ivens. (*lucida x moorei*). H&S 1966, N7+GC

x intermedia Bausch. (*glutinosa x lucida*). Hort. H&S 1966, dead N7

moorei F v Muell. PLUM WOOD. Australia. H&S 1948, K10; Dene 1986 K10(NM)

x nymansensis Bausch. (*cordifolia x glutinosa*). Hort. Welch 1988, K10+GC (NM);

Euodia: Rutaceae (2+0=2)

daniellii (Benn)Hemsl.China Korea. Dene 1987 F9; Appleton 1988 M6(NM);

hupehensis Dode. China. H&S 1947, L9 died 1989; Appleton 1988 L6+GC;

Euonymus: Celastraceae (16+3=19)

E10(PP199,PP199a) F4(Ci414) H7

alatus (Thunb.)Sieb. China, Asia. McKean 1988, Q5+GC (NM);

alatus var. *apterus* Reg. (*E. alatus subtriflorus*) China. E7+MM, F10+MM,

atropurpureus Jacq. (*latifolius*.Marsh.) BURNING BUSH. USA. H&S 1951, not found G4

europaeus L. COMMON SPINDLE TREE. Europe, W Asia. D&D 1934, not found L6,

europaeus types C4(CP491 & 494) C7(CP517) D5(weeping) D8(CP415 CP490)

E9(CP527 & 528) F6 F9 H7(CaP132) Q4(CC1,3)

var. *angustifolius* C4+MM

'Fructu-coccineo' H&S 1948, not found E10

grandiflorus Wall. ex Roxb. India, China. H&S 1948, not found E10

f. *salicifolius* Stapf & F. H&S 1951, D9 E10 G9

hamiltonianus var. *maackii* (Rupr)Komar. (*macckii*) Manchuria, Japan. H&S 1948, possibly E10

hamiltonianus var. *seiboldianus* (*hamiltonianus*) Himalaya to Japan. E7 L6

japonicus Thunb. JAPANESE EVERGREEN SPINDLE. Japan. not found G11

cultivars I8 J7

'Aureopictus' not found H11

'Robustus' not located Q4

latifolius (L.)Mill. (*europaeus* var. *latifolius* L.) Europe to Asia minor. H&S 1958, not located Q4

latifolius Marsh. = *E atropurpureus*.

lucidus D Don. (*pendulus*. Wall., *fimbriatus* Hort, not Wall.) Himalaya.

H&S1947, H9+MM N5+MM L8+MM and naturalising

myrianthus Hemsl. China. H&S 1951, G9

sanguineus Loes ex Diels. China, Tibet. H&S 1959, Q4(CC2) ??

tingens Wall. Himalaya. H&S 1949, K11+MM (The Eastwoodhill form is as described by Roy Lancaster in the Plantsman, in which the fruit is pink to cream, not dark pink.)

yedoensis Koehne. (*hamiltonianus* var. *yedoensis*). 19

Eupatorium: Asteraceae (2+0=2)

purpureum 110+MM

ligustrifolium DC Dense. Mexico. H&S 1949, not found H11

Euscaphus: Staphyleaceae (1+0=1)

japonica (Thunb.) Kanitz. Japan. Berry ex Korea 1988, M4+GC

Exochorda: Rosaceae (1+0=1)

racemosa (Lindl) Rehd. (*grandiflora*) PEARL BUSH. China. E9+MM J6+MM

Fagus: Fagaceae (7+10=17)

D13(PP262)

engleriana Seemen. CHINESE BEECH. China H&S 1952, P3

grandifolia Ehrh. (*americana*, *ferruginea*). AMERICAN BEECH. USA. H&S1949, K11 P1(NM), not found H8

lucida Rehd & Wils. China. H&S 1948, K12; Cave(ex EWH)1988, E9

orientalis Lipsky. Asia minor, Caucasus. ORIENTAL BEECH, H&S 1948, C11

sylvatica L. COMMON BEECH. Central Europe. D&D 1934 D6 E6 F5 F9 G8
G11 I6 J6 J7 J10 K3 K7 K8 L3 L4 L5 L8 M3 M5 O7 O8

purple types E9 H6 H10 I11 J9

'Albomarginata' H&S 1951, P3; Cave(ex EWH)1988, K2+GC;

'Asplenifolia' FERN LEAF BEECH, K3, nursery,

'Dawyck' DAWYCK BEECH, H&S 1947, J9; Cave(ex EWH)1988, E10;

'Pendula' WEEPING BEECH, C9 I10

f. purpurea (Ait) Schneid. COPPER BEECH. I7, K2(NM) theatre.

'Purpurea Pendula' Cave 1988, G10+GC dead.

'Purpurea Tricolor' TRICOLOUR BEECH, E10 I6 I7

'Riversii' ('Purpurea Major') RIVER'S PURPLE BEECH, E7 F10

'Rohannii' PURPLE FERN LEAF BEECH, H&S 1949, K12; Cave(ex EWH)1988 D9

'Rotundifolia' ROUND LEAF BEECH, H&S 1951, O3

f. tortuosa (Pepin) Hagi. CONTORTED BEECH, H&S 1951, P4

'Zlatia' Cave1988, E4+GC

Fatsia: Araliaceae (1+0=1)

japonica (Thunb) Dcne & Planch. JAPANESE ARALIA. Japan. H11+GC (NM)

Feijoa: Myrtaceae (2+0=2)

N4

magnifica (NCC) L5

sellowana (Berg) Berg. S America. Webb 1837, O9, not found I10

Ficus: Moraceae (1+0=1)

carica L. COMMON FIG. Asia minor. K3+MM

Firmiana: Sterculiaceae (1+0=1)

simplex (L) W F Wight. PARASOL TREE. China. PS(ex seed UK), not found H8

Fontanesia: Oleaceae (2+0=2)

fortunei Cart. (*japonica*) China. I8

phillyreoides Labill. W Asia. not found I8

Forsythia: Oleaceae (2+5=7)

C7 F10 F11 N5 N8 O8

'Beatrix Farrand' ('Arnold Giant' x 'Spectabilis'). Q10+CN; R6

x intermedia Zab. Hort(Germany).

'Arnold Giant' R10+CN; not found O7

'Lynwood' Q10+CN; not located R6

'Spectabilis' G5+CN, N4; not found I9 O6

'Spring Glory' R6

suspensa (Thunb)Vahl. Japan, not found O7

suspensa var. *sieboldii* Zab. Hort(Japan). D&D1934, J7+GC

Fothergilla: Hamamelidaceae (1+0=1)

major Lodd. DWARF ALDER. USA. L6

Fraxinus: Oleaceae (27+4=31)

B6 B7 C10(two), C11(PP67), C12(PP70 PP251 PP91 PP97 PP245 PP246 PP247 PP248 PP249
PP298), C13(PP252 PP253), D10 D11(PP55)D12(PP258 PP302, PP260), D13(PP257), E4several E6
E11(PP267 PP266), F4(Ci256) F8 F9 F11 G8(CP531) G11 I3 K9 P6 Q6 R7 R10two

americana L. WHITE ASH. USA. Appleton 1988, C9+GC(NM);

angustifolia Vahl. (*oxycarpa* var. *angustifolia* (Vahl.)Lingelsh.). W.Africa, W.Med. E11+CN

angustifolia var. *lentiscifolia* (Desf)Henry. NARROW LEAF ASH. Europe, Africa, H&S 1951, E11

bungeana DC. China. PS(ex seed Korea), C10

bracteata see *griffithii*

chinensis Roxb. China. CHINESE ASH, H&S 1951, F11

var. *acuminata* Lingelsh. H&S 1951, F11

var. *rhynophylla* (Hance)Hemsl. China, Korea. H&S 1949, F11

dimorpha see *xanthoxyloides dimorpha*.

dipetala Hook & Arn. TWO PETAL ASH. USA. H&S 1948&51, E11+CN; not located F5

excelsior L. COMMON ASH. Europe, N Asia. B11 C10 C11 D12 E6 F6 G10

f. *angustifolia* NARROW LEAF COMMON ASH, not located H6, tree labelled *angustifolia* at H7

f. *diversifolia* ('*Monophylla*') H&S 1951, E11 F11

'Golden Glow' (NNC) Bull 1987, K2+GC

griffithii Clarke. (*bracteata*. Hemsl). China, Phillipines.

not found E11; Hamilton city council 198X, C9(NM)

holotricha Koehne. Balkan. H&S 1948, E11+CN

latifolia Benth. (*oregona*) OREGON ASH. USA. H&S 1948, not found R7 S9

mandshurica Rupr. MANDSHURIAN ASH. China, Japan. PS(ex seed Mt Kyebang, Korea)

mariesii Hook f. (*sieboldiana*.Bl.) Japan, China. H&S 1949&55, E11 P4

nigra Marsh. BLACK ASH. USA. PS 1973, not located E11

ornus L. MANNA ASH. S Europe, Asia minor. H8 R9, not found D9

oxycarpa Willd. (*angustifolia* ssp. *oxycarpa*. (Willd) Franco & Racho Alfonso),

excelsior ssp. *oxycarpa* (Will.)Wesm., *oxyphylla* Bieb.) DESERT ASH. S Europe,
N Africa, Asia minor. D13,

'Raywoodi' CLARET ASH, D&D 1934, B11 D5 D6 I3 I5 J4 J5 J7 L11 Q6

paxiana Lingelsh. China, Himalaya. H&S 1950, dead Q5?

pennsylvanica Marsh. RED ASH. USA.

viridis types GREEN ASH G9 I2 I2 D13

'Aucubifolia' H&S 1948, E11

'Variegata' WHITE VARIEGATED RED ASH, H&S 1950?, E11

platypoda Oliv. China. not found F4

sieboldiana (longicuspis)??? According to Krussman *sieboldiana* = *mariesii*, and *longicuspis* =

pubinervis, the first in each case not being related. Does this entry then refer to the *longicuspis* = *pubinervis*

pair. H&S 1948, not located R7

spaethiana Lingelsh. Japan. H&S 1951, E11, not found H8

udhei (Wen)Lingelsh. SHAMEL ASH. USA. E12 (not according to CN)

velutina Torr. VELVET ASH. USA. H&S 1948, C11

xanthoxyloides (G Don)DC. AFGHAN ASH. Afghanistan. H&S 1948, B11

var. dimorpha (Coss & Durieu)Wenz. N Africa. H&S 1948, B11, not found E11

Freylinia: Scrophulariaceae (1+0=1)

lanceolata (L f.)D Don. (*cestroides*) S Africa. H&S 1948, I11

Fuchsia: Onagraceae (1+0=1)

H11

Furcraea: Agavaceae (1+0=1)

bedinghausii K Koch. Mexico. L5

Garrya: Garryaceae (2+0=2)

elliptica Lindl. USA K6

laurifolia ssp. macrophylla (Benth)Wang. Mexico. H&S 1947, I10

Gaultheria: Ericaceae (1+0=1)

sinensis Anthony. Burma, China. not found H11

Gelsemium: Loganiaceae (0+1=1)

sempervirens Ait. YELLOW JASMINE. USA.

'Flore Plena' Nichols 1988, L5+GC

Genista: Fabaceae - Papilionaceae (2+0=2)

H10

aetnensis DC. MT ETNA BROOM. Sicily. Toptrees1988, L4 (NM)

cinerea (Vill)DC. Spain. H&S 1949, not found H8 L9

Ginkgo: Ginkgoaceae (1+1=2)

biloba L. MADDENHAIR TREE. China. D8 I6 L13 O6 O7 O8 P6

'Fastigiata' N6

Gleditsia: Fabaceae - Caesalpinaceae (8+5=13)

K12two

aquatica China. H&S 1955, H3+BS (WL *sinensis*)

caspiaca Desf. Iran, Transcaucasus, Appleton1987, I4

delavayi Franch. China. H&S 1955, H3+BS

japonica Miq. Japan, China. H&S 1947&55, C11 I2+MM J12+MM

japonica koraiensis (NNC) T5+CN

sinensis Lam. China. H&S 1955, C11+CN; H3+BS (WL *macrantha*);

triacanthos L. COMMON HONEYLOCUST. USA. C7 F5 F10 K5, not found I9

'Elegantissima' H&S 1938, N6

f. inermis Willd. THORNLESS HONEYLOCUST. 1949, D5 H2 L13+GC(OH588)

'Moraine' not located K12

'Ruby Lace' J12

'Shademaster' not located K12

'Sunburst' K12

Glochidion: Euphorbiaceae (1+0=1)

L10 J9

- sinicum* Hook & Arn. China. H&S 1949, not found K12
- Glyptostrobus: Taxodiaceae (1+0=1)**
- lineatus* (Poir)Druce. (*pensilis*). CHINESE SWAMP CYPRESS. China. H&S 1955, K6 Q3+GC
- Goodia: Fabaceae - Papilionaceae (1+0=1)**
- lotifolia* Salisb. GOLDEN TEE. Australia. I9+MM H11+MM
- Gordonia: Theaceae (2+0=2)**
- axillaris* (Roxb.) D Dietr. (*anomala*). China. I10 M3
- lasianthus* Ellis. LOBLOLLY BAY USA. L4 dead
- Grevillea: Proteaceae (4+3=7)**
- asplenifolia* R Br. ASPLENIUM GREVILLEA. Australia. 1981, G8
- 'Canberra Gem' Hort. 1981, G8
- glabrata* (Lindl)Meissn. Australia. 1981, G8
- juniperina* R Br. Australia. G8
- 'Red Cloud' Hort. 1981, not found G9
- robusta* A Cunn. SILKY OAK. Australia. M3 N4 N8 O8 P10 Q9 R7 R9 S7, not found G11
- rosmarinifolia* A Cunn. ROSEMARY GREVILLEA. Australia.
- 'Jenksinii' 1981, G8
- Greyia: Melianthaceae (1+0=1)**
- radkoferi* Syzy. S Africa. H10+DG
- Griselinia: Cornaceae (1+0=1)**
- littoralis* Raoul. KAPUKA. NZ. FRI R 1979, not found M2
- Gymnocladus: Fabaceae - Caesalpinaceae (1+0=1)**
- dioica* (L)K Koch. (*canadensis*) KENTUCKY COFFEE TREE. N America H&S 1955, N7
- Halesia: Styraceae (2+0=2)**
- J6
- carolina* L. SILVER BELL TREE. N America. G5 (NM)
- monticola* (Rehd.)Sarg. MOUNTAIN SHOWBELL. USA. H&S 1938, L4 M4
- Hamamelis: Hamamelidaceae (2+2=4)**
- F10 L4 N5
- x intermedia* Rehd. Hort.
- 'Hiltingbury' H&S 1957, Q5
- japonica* S&Z. JAPANESE WITCH HAZEL. Japan.
- 'Arborea' JAPANESE WITCH HAZEL. Hort. 1937?, G5 J8
- mollis* Oliv. China. D&D 1934?, I6 J7
- vernalis* Sarg. OZARK WITCH HAZEL. USA. H&S 1949, L12
- Hardenbergia: Fabaceae - Papilionaceae (1+0=1)**
- violacea* Australia. I9+MM
- Hebe: Scrophulariaceae (3+0=3)**
- cupressoides* (Hook f.)Ckn & Allan. New Zealand. D&D 1934?, not found H9
- speciosa* (A.Cunn)Ckn & Allan. New Zealand. not found H10
- stricta* (Benth)L B Moore. KOROMIKO. New Zealand. not found E7 L12
- Hedycarya: Monimiaceae (1+0=1)**
- arborea* PIGEONWOOD. New Zealand.
- Hedysarum: Fabaceae - Papilionaceae (1+0=1)**
- multijugum* Max. FRENCH HONEYSUCKLE. Mongolia. H7
- Helichrysum: Asteraceae (2+1=3)**
- glomeratum* (NNC) not found H7

petiolatum (L.)DC. LICORICE PLANT S Africa. I9+MM

'Aureum' I9+MM

Hemiptelea: Ulmaceae

dauidii see *Zelkova*

Heteromorpha: Apiaceae (1+0=1)

arborescens (Spreng)Cham&Schlect. S Africa. Appleton(ex Kirstenboch)1988, M4+GC (NM);

Hibiscus: Malvaceae (2+0=2)

mutabilis L. China. H11+MM I9+MM

syriacus L. ROSE OF SHARON. China, India. H11

Hoheria: Malvaceae (1+2=3)

populnea A Cunn. LACEBARK. NZ. I7 K8 M6

'Alba Variegata' (cream outer) R6+MM

'Variegata' (gold inner) Q10+MM

Holboellia: Lardizabalaceae (1+0=1)

latifolia China. H8+GC

Hovenia: Rhamnaceae (1+0=1)

dulcis Thunb. RAISIN TREE. China, Himalaya. PS(ex seed Japan)1968, I9+BB

Hydrangea: Saxifragaceae (6+3=9)

L6

aspera D Don. Himalaya, China.

ssp. aspera (*H. villosa*) China Taiwan. Freeman, O7 (NM);

ssp. macrophylla Hemsl. (*aspera ssp. strigosa* (Rehd)McClintock)

China, Burma. H&S 1954, J9 O7

heteromalla D Don. (*xanthoneura*) India, Himalaya, China. Jellyman(Nepal)1988, M4+GC

macrophylla (Thunb)Ser. China, Japan.

'Blue Wave' H&S 1949, I8

f. hortensia M3

paniculata Sieb. China, Japan.

'Grandiflora' PEEGEE HYDRANGEA, R6

petiolaris S&Z. CLIMBING HYDRANGEA. Japan, Korea. D&D 1934, L6

quercifolia Bart. OAK LEAF HYDRANGEA. USA. L6 P9

serrata (Thunb)Ser. (*acuminata*) Japan, Korea.

'Bluebird' H&S 1962, not found O7

villosa see *H. aspera ssp. aspera*

Hymenoporum: Pittosporaceae (1+0=1)

flavum F v Muell. NATIVE FRANGIPANI. Australia. M4 N5

Hypericum: Hypericaceae (3+1=4)

I8 K5

sp (KR743) Nepal. (NM)

hookerianum Wight&Arn. Nepal Burma. (KR736) (NM)

leschenaulti Choisy. (*triflorum*) Java, Sumatra. H&S 1949, I8

x moserianum Luquet ex Andre. Hort.

'Tricolor' not found H10

Idesia: Flacourtiaceae (1+0=1)

polycarpa Max. China. 1937?, F6+GC J4+MM

Ilex: Aquifoliaceae (16+7=23)

I11 J9 L9(OH625 &622) L10(OH630) O9

- x altaclarensis* (Loud) Dallim. HIGHCLERE HOLLY. Hort.
 'Camelliifolia' H&S 1952?, I8
 'Hendersonii' H&S 1951, G9
 'Wilsonii' H&S 1949, not found L10
- aquifolium* L. COMMON HOLLY. Europe. K9 I11, variegated B6 Q8,
 'Argenteomarginata' BROAD LEAF SILVERHOLLY, J7 Q8
 'Aureomarginata' L7
 'Ferox Argentea' SILVER HOLLY, J7 K9 Q7
 'Golden Queen' ('Aureoregina') H&S 1949, not found L10
- casine* L. non Walt. Dahoon. (*rosmarinifolia*) USA. H&S 1949, I7+GC L9
- corallina* Franch. China. H&S 1949, K9 L9
- cornuta* Lindl & Paxt. HORNED HOLLY. China. 1949?, L9 H8+GC, L15+MM(oak wood)
- crenata* Thunb. Japan. H&S 1965, I8
- dipyrena* Wall. HIMALAYAN HOLLY. Himalaya. H&S 1949, not located L10
- fargesii* Franch. China, Burma. H&S 1949&55, L9 P4, not found O1 Q5
- fargesii f. sclerophylla* (a form of *fargesii ssp. melanotricha*) China, N.Burma, Tibet.
 H&S 1949, not located L10
- franchetiana* Loes. China. H&S 1955, N2
- integra* Thunb. Japan. Berry(ex Korea)1988, I6+BB
- kingiana* Cockerell. (*insignis*.Hook f.) Himalaya. H&S 1948, L10
- latifolia* Thunb. TARA-YO. Japan. H&S 1949, L10
- macrocarpa* Oliv. China. H&S 1955, O2
- pedunculosa* Mill. Japan. H&S 1965, I8
- perado* var. *platyphylla* (Webb & Benth)Loes. (*platyphylla*) Madeira. H&S 1949, L9
- rosmarinifolia* see *casine*
- verticillata* (L)Gray. WINTERBERRY E.N.America. I7+GC L6+GC
- Illicium: Illiciaceae (1+0=1)**
anisatum L. Japan. H5+BS
- Indigofera: Fabaceae - Papilionaceae (3+0=3)**
 I9 I10
amblyantha Craib. China. H&S 1947, P5+GC
decora Lindl. Japan, China. D&D 1934?, not located H10
gerardiana Wall ex Baker. (*heterantha* Wall ex Brandis). Himalaya. L6+GC
- Itea: Saxifragaceae (2+0=2)**
ilicifolia Oliv. China. H&S 1961, J9 P10
yunnanensis Franch. China. K6?, P10 dead
- Jacaranda: Bignoniaceae (1+0=1)**
ovalifolia R Br. (*mimosifolia*) Argentina. R6+GC
- Jasminium: Oleaceae (6+1=7)**
 N5
azoricum L. MADEIRA JASMINE. Azores. H&S 1949, not found H8
beesianum Forrest & Diels. China. K5+GC
humile var. *revolutum* (Sims)Stokes. (*revolutum*) Himalaya, Kashmir. G4+GC
mesnyi Hance. PRIMROSE JASMINE. China. G9+MM G11+MM
polyanthum Franch. China. H&S 1947, I11+MM
x stephanense Hort. China. Harrison1934, I4+GC
 'Fairfield Sundrop' Nichols 1988, L5+GC

Juglans: Juglandaceae (7+2=9)

- ailantifolia* Carr. (*sieboldiana* Max. not Goepf). JAPANESE WALNUT. Japan. L11+GC?, Q4
californica Wats. CALIFORNIA WALNUT. California. H&S 1965, Q7
cinerea L. BUTTERNUT. E N America. PS(ex seed)1981, L11, gone H8
hindsii (Jepson)R E Smith. HINDS WALNUT. California. FRI R 1979, F3
microcarpa Berl. (*rupestris* Englem.) TEXAN WALNUT. USA. H&S 1965, O8 Q4
nigra L. BLACK WALNUT. E N America. H&S 1951&65, F9, P5?, not found L8 R9
regia L. COMMON WALNUT. Europe, Asia. E4 F4 F5 G2 G3 I4 I5 K10, not found L8 K14
‘**Laciniata**’ CUT LEAF WALNUT, C10 G6 I5 I9
‘**Wilson's Wonder**’ Beech wood

Juniperus: Cupressaceae (23+9=32)

- C11(PP109A), J11 K12two L11(OH638), M6 P9
africanus L7+E (this plant received by W D Cook as africanus)
‘**Glauc**’ M6+MT (received by W D Cook as africanus)
cedrus Webb & Berthelot. Canary Is. H&S 1948, B12
chinensis L. China, Japan. E5+GC; Tantrum 1988, O5+GC (NM);
cultivars I5+GC, L7 K12
‘**Pyramidalis**’ not found B12 H5 I5 L6 L7 M13 Q5
communis L. COMMON JUNIPER. Europe, Asia, China, America. K6+GC; not found Q5
‘**Oblonga Pendula**’ WEEPING JUNIPER, H&S 1949, C11+CN
f. suecica (Mill)Ait. (**‘Fastigiata**’) SWEDISH JUNIPER.Scandinavia.
I5+GC I7+GC Q5+GC; not found H8
depeana Steud. ALLIGATOR JUNIPER. USA. McKean 1988, O5+GC (NM);
drupacea Labill. SYRIAN JUNIPER. Greece, Asia minor. H&S 1948, B12+MM
excelsa Bieb. GRECIAN JUNIPER. Caucasus, Asia minor. H&S 1949, C11
flaccida Schlech. MEXICAN JUNIPER. Mexico. H&S 1948, B12+CN
formosana Hayata. PRICKLY CYPRESS. China. H&S 1948, B12+CN
x media van Melle. M6
‘**Blaauw**’ L12
‘**Pfitzerana**’ PFITZER JUNIPER, E8 L8+GC
monosperma (Engl.)Sarg. USA. Tantrum 1988, N3+GC (NM);
oblonga ‘**Pendula**’ = *J.communis* ‘**Oblonga Pendula**’
occidentalis Hook. Western USA. C7+GC
osteosperma (Torr)Little. USA. Tantrum 1988, O5+GC
oxycedrus L. PRICKLY JUNIPER. Meditt/Iran. H&S1948, C11
phoenicea var. *turbinata* (Guss)Parl. PHOENICIAN JUNIPER. Meditt. H&S 1948, B12
procera Hochst ex Endl. AFRICAN JUNIPER. Africa. C12 dead; Etherington1989, O5
recurva var. *coxii* (Jacks)Melv. COFFIN JUNIPER. China, Burma. H&S 1950, L7+MM H7+MM
rigida S&Z. Korea, Manchuria. D&D 1937&45, I5+GC, E7+GC
sabina L. COMMON SAVIN. Europe, Asia minor. E6+GC
var. *tamariscifolia* Ait. TAMARISK LEAF JUNIPER. H&S 1949, B12+CN
‘**Knap Hill**’ I7+CN
squarrosa (Name not confirmed). B11
squamata D Don. Afghanistan to Taiwan
var. *fargesii* Rehd & Wils. China, Tibet. H&S 1949, C11
‘**Meyeri**’ MEYER JUNIPER. H&S 1949, L12, not found L7

- virginiana* L. EASTERN RED CEDAR. N America. K6+GC
 'Glaucá' H&S 1949, B11
- Kalmia: Ericaceae (2+0=2)***
 G5 K6
angustifolia f. candida L. WHITE FLOWERED SHEEP LAUREL. N America. not found G5
latifolia L. CALICO BUSH. N America. Stevens 1935?, not found G5
- Kennedia: Fabaceae - Papilionaceae (3+0=3)***
carnea Australia. Nichols I10+JN
nigricans Lindl. Australia. Nichols 1988, H11+GC
rubicunda Australia. I10+GC, N4(NM),
- Kerria: Rosaceae (1+1=2)***
japonica (L.)DC. China. Mortimer 1987, I5 (NM)
 'Plena Flora' H6+MM; Murphy 1987 (NM),
- Keteleeria: Pinaceae (1+0=1)***
 davidiana (Bert.)Beissm. China. H&S 1948, G3
- Knightsia: Proteaceae (1+0=1)***
excelsa R Br. REWA REWA. NZ. FRI R 1979, M2(bush)
- Koelreuteria: Sapindaceae (4+0=4)***
bipinnata Franch. China. Tootrees 1986, (NM).
integrifolia Franch. China. H8, O10, not found G4
paniculata Laxm. GOLDEN RAIN TREE. China, Korea. D5 F9 G9
 var. *apiculata* (Rehd. & Wils.)Rehd. China. R3
- Kolkwitzia: Caprifoliaceae (1+0=1)***
amabilis Graebn. China. Horton 1926?, F10+MM J7+MM J8+MM L6+MM M6+MM N7+MM
 O8+MM P9+MM
- Laburnum: Fabaceae - Papilionaceae (2+2=4)***
 D8 I3(stillwater) I5(parrots walk gate)
alpinum (Mill)Bercht. & Presl. SCOTCH LABURNUM. Europe. not found I4
anagyroides Med. (*vulgare*) COMMON LABURNUM. Europe. R5, not found P5 H8
 'Autumnale' ('Latest and Longest') H&S 1949, H7 K11
vulgare Bercht. & Presl. (*anagyroides*. Med.) I5(willow bridge) ??
x watereri 'Vossii' J4, not found R6
- Lagerstroemia: Lythraceae (1+1=2)***
 K13
indica L. CREPE MYRTLE. China. H10
 'Eavesii' (*mathewsii x indica*). H9
- Lagunaria: Malvaceae (1+0=1)***
patersonii Don. NORFOLK ISLAND HIBISCUS. Australia.M3+MM
- Lantana: Verbenaceae (0+1=1)***
camara L. MARMALADE BUSH. Tropical asia.
 'Chelsea Gem' N5+GC
- Lardizabala: Lardizabalaceae (1+0=1)***
biternata Ruiz & Pav. Chile. H&S 1948, K12+GC
- Larix: Pinaceae (3+0=3)***
 G11 M9
decidua Mill. (*europaea*) COMMON LARCH. Europe. G10
x eurolepis Henry. DUNKELD LARCH. Hort. 1948, not found M9
kaempferi (Lamb)Carr. (*leptolepis*) JAPANESE LARCH. Japan. 1948, not found M9

Laurus: Lauraceae (4+0=4)

azorica (Sieb)J Franco. (*canariensis*) CANARY LAUREL. Canaries. H&S 1955, R5

azorica hyd Chch Bot Gdn 1984, P5+GC

nobilis L. BAY LAUREL. Asia minor. H&S 1955, G9 N6

nobilis f. angustifolia (Nees)Markgraf. WILLOW LEAF BAY, H&S 1954, P4

Lavandula: Lamiaceae (2+0=2)

dentata L. TOOTHED LAVENDER. Spain. I9+MM

stoechas L. Meditt. H11+MM

Ledum: Ericaceae (1+0=1)

glandulosum Nutt. WN America. H&S M4(NM)

Leptospermum: Myrtaceae (2+0=2)

laevigatum F Muell. COASTAL TEA TREE. Australia. E9+GC

lanigerum (Ait)Sm. WOOLLY TEA TREE. Tasmania. DSIR Ak 1980, G8+GC

Lespedeza: Fabaceae - Papilionaceae (1+0=1)

thunbergii (DC)Nakai. China. I10+MM

Leucaena: Fabaceae - Mimosaceae (1+0=1)

glauca (L). Benth. WHITE POPINAC. USA. M4

Leucothoe: Ericaceae (1+1=2)

fontanesiana (Steud)Sleumer. USA. D&D 1938, J8

'Rainbow' ? H11 I9

Libocedrus: Cupressaceae (1+0=1)

also see *Austrocedrus* and *Calocedrus*

chilensis (D Don)Endl. (*Austrocedrus c.*) CHILEAN INCENSE CEDAR. Chile. O2

decurrens Torr. see *Calocedrus decurrens* (Torr)Florin.

plumosa (D Don) Sarg. KAWAKA. NZ. FRI R 1979, N2(bush)

Ligustrum: Oleaceae (5+4=9)

compactum Brandis. China. L6+MM, not found L13

confusum Dcne. Himalaya, India. H&S 1949, L13+MM

japonicum 'Macrophyllum' Berry(ex Korea)1988, Q5+GC dead

japonicum 'Rotundifolium' Mike Steven 1986, H11+GC

lucidum Ait.f. GLOSSY TREE PRIVET. China. H&S 1949, L13+MM

'Tricolor' VARIEGATED TREE PRIVET, D8

ovalifolium Hassk. HEDGE PRIVET. Japan. 1949?, K12+MM, not found L13

'Aureum' GOLDEN PRIVET. L4+MM

sinense Lour. CHINESE PRIVET. China. H&S 1949, L13+MM

Liquidambar: Hamamelidaceae (4+1=5)

formosana Hance. China. E5 L7 P10 R5

var. *monticola* Rehd & Wils. China. F4 P3 R5, not found P4

orientalis Mill. Asia minor. Cave(Hudson/Hillier)1988, E5+GC

styraciflua L. SWEETGUM. USA. D&D 1934, B6 C4 D4 D11 D12 E5 E9 F5 G11 H2 I11 K8

L3 L6 L10 M4 N1 N8 O1 O2 O3 O4 P1 P3 P4 Q1

'Festeri' D&D, not found R5

Liriodendron: Magnoliaceae (2+2=4)

chinense (Hemsl)Sarg. CHINESE TULIP TREE. China. H&S 1957, died P10;

seedling ex China 1988, (NM)

tulipifera L. TULIP TREE. USA. E5 G3 L7

‘**Aureomarginatum**’ VARIEGATED TULIP TREE, K6 L6 N6, not found G3

‘**Fastigiatum**’ PYRAMIDAL TULIP TREE, H&S 1955, G3

Lithocarpus: Fagaceae (2+0=2)

edulis (Mak)Nakai. Japan. K4

glaber (Thunb)Nakai. Japan, China. H&S 1938, K4

Lomatia: Proteaceae (4+0=4)

dentata Chile. I11+PC

ilicifolia R Br. HOLLY LOMATIA. Australia. Hudson 1988, Q5+GC

myricoides (Gaertn)Dorrien. Australia. H&S 1955, R5

tinctoria (Labill)R Br. Tasmania. I10+GC

Lonicera: Caprifoliaceae (14+1=15)

bush types D4 D5 H3 H10 I10 J8,

climbing types D5(CP508) E9(CP559) G10 H8 J7 L4 M4,

fragrantissima Lindl & Paxt. China. H9 H10 H11 N9 O9, not found G8

henryi Hemsl. China. not found M4

hildebrandiana Collet & Hemsl. GIANT HONEYSUCKLE. Himalaya H11

japonica Thunb. JAPANESE HONEYSUCKLE. Japan, Korea, China. not found J7 J8 J9

korolkowii Stapf. Turkestan. D&D 1941?, not found M4

ledebourii Esch. California. H&S 1955, not located H3

maackii (Rupr)Max. China, Japan. F10 I10, not found I8

quinquelocularis Hardw. Himalaya. C11+GC

sempervirens L. TRUMPET HONEYSUCKLE. N America. D&D1942, K5(heart?)

‘**Sulphurea**’ Nichols 1988, L5+GC

sp McKean N.America. (Vancouver)1988, J7 (NM)

splendida Boiss. Spain. D&D 1942?, not found M4

standishii Jacq. China. H&S 1956, not located H3

syringantha Maxim. China. Hudson1988, L4 (NM);

tatarica L. Russia, Turkestan. Hudson 1988, L5+GC (NM)

Loropetalum: Hamamelidaceae (1+0=1)

chinense (R Br)Oliv. China. N5+MM

Lyonia: Ericaceae (1+0=1)

ovalifolia (Wall)Drude. China. Appleton 1988, L4+GC

Lyonothamnus: Rosaceae (1+0=1)

floribundus var. *asplenifolius* A Gray. CATALINA IRONWOOD. California. H&S 1951, R6

Macadamia: Proteaceae (1+0=1)

tetraphylla L A S Johnson. MACADAMIA NUT. Australia. N5?

Magnolia: Magnoliaceae (31+29=60)

B5 I9 I10 J8 M3 N5 P9

acuminata (L)L. CUCUMBER TREE. USA

‘**Golden Glow**’ Cave 1988, K5+GC

campbellii Hook f. & Thoms PINK TULIP TREE. Himalaya. M4 Q5 Q8

f. alba Hort. H&S 1955, P5

‘**Charles Raffill**’ (*campbellii* ssp. *campbellii* x *campbellii* ssp. *mollicomata*). H&S 1965, P4, not found Q5 Q6

coco (Lour)DC. Java. H11+GC

cordata Michx. E N America. H&S 1948, K10

cylindrica Wils. China. H&S1957, Q5; Cave 1988, L5+GC

- dawsoniana* Rehd. & Wils. China. H&S 1948, K11
- delavayi* Franch. China. H&S 1938, L5 N2 P5 Q5
- denudata* Desr. (*conspicua*, *heptapeta*) China. Cave 1988, L5+GC (NM);
 ‘Purple Eye’ LILY TREE, YULAN, not found I9
- ‘Douglas Cook’ Hort. (all +MM) O2 O3 O7 P5 P7 P10 Q5
- ‘Early Rose’ Hort. M4
- fraseri* Walt. (*auriculata*) FRASER MAGNOLIA USA. H&S 1957, not found R6
- grandiflora* L. SOUTHERN MAGNOLIA USA. B5 B6 C7 E5 E9 F6 F9 H7 I7 I9 H9 J8 J9 K6 L4 O2
 O7
- ‘Angustifolia’ Q5+MM P10+MM
- ‘Exmouth’ H&S 1938, G5+CN
- ‘Ferruginea’ H&S 1938, H5+CN J8+MM
- ‘Goliath’ H&S 1952, N7+MM
- ‘Heaven Scent’ Hort. (Gresham hyd). Barret1987, L5
- hypoleuca* S&Z. (*obovata*) WHITELEAF MAGNOLIA Japan. H&S 1949, not found J7
- ‘Iolanthe’ Hort. (Jury hyd). Koromiko nursery 1981, S6; Barret1987, died J11
- ‘Kewensis’ Hort. (*kobus x salicifolia*) H&S 1965, H8 (WL biondii)
- kobus* DC. Japan. D&D 1934?, C7 H5 I5 I7 L8(best form) J7 J8 J9 K7 K12 L8 M4 R5 R10 O10,
 not found K3
- var. borealis* Sarg. Japan. H&S 1938&52, K11, not found O6
- liliflora* Desr. (*purpurea*, *pentapeta*) China. B6+MM L6+MM J8 M5
- x loebneri* Kache. Hort. (*kobus x stellata*) H&S 1952, K8+CN R9 P3 Q4, not found H10
- macrophylla* Michx. BIG LEAF MAGNOLIA USA. H&S 1952, I8+MM N7+MM O8+MM, not found Q5
- nitida* W W Sm. China, Tibet. H11+GC died.
- officinalis* Rehd. & Wils. China. H&S 1964?,
var. biloba Rehd & Wils. China. H&S 1965, H8; O8; Cave 1988, K10+GC (NM);
- ‘Peppermint Stick’ (Gresham hyd; *liliflora x veitchi*). Hort. Barret1987, R5
- ‘Pinkie’ (Kosar hyd; *liliflora* Reflorescens *x stellata* Rosea). Hort. Koromiko nursery 1981, not found J11
- x proctoriana* Rehd. (*kobus x salicifolia*). Hort. H&S 1957,59,65, P10 R5, not found J7(poss troll brdge)
- ‘Royal Crown’ (Gresham hyd; *liliflora x veitchi*). Hort. Barret1987, L4
- salicifolia* (S&Z)Max. WILLOW LEAF MAGNOLIA Japan. H&S 1938, I9
- sargentiana var. robusta* Rehd.& Wils. China. H&S 1947&54, K11+MM
- ‘Serene’ Hort. Barret1987, L4
- sieboldii* K Koch. (*parviflora*) Japan, Korea. Cave 1988, L3+GC (NM); P5+GC (NM);
 Koromiko nursery 1981, not found J11
- x soulangiana* Soul-Bod. (*denudata x liliflora*) SAUCER MAGNOLIA Hort. E5 E9 H5 H11 I8 I9 I10 K7
- ‘Alba’ H&S 1952 Barret1987 R6; not found H8
- ‘Alexandrina’ H&S 1952, E5 E9 H5+CN H11 I6+CN I10+CN J7; not found H8
- ‘Brozzonii’ H&S 1957, K11+MM P10+MM Q10+MM
- ‘Lennei’ D&D 1935, H&S 1952, O7+MM, not found K8 K11 H8 H10
- ‘Lennei Alba’ H&S 1952, not found H8
- ‘Rustica Rubra’ D&D 1934, H&S 1952, C7+CN I6 I7 L7 K7 K11; not found H8
- ‘Speciosa’ H&S 1951, M4
- ‘Triumphans’ Q10
- ‘Verbanica’ H&S 1956, O3, dead R6 Q4
- dark base J7 J9 K8 L4

- sprengeri* var. *diva* Stapf. GODESS MAGNOLIA. China. H&S 1949&51, K7 K11+GC (not same as K7), not found H8
- stellata* (S&Z)Max. STAR MAGNOLIA. Japan. E8 I10 L6, not found H10
 'King Rose' 1980, not found K8
 'Rosea' L4+MM
- x thompsoniana* (Loud)Voss. (*virginiana x tripetala*). Hort. H&S 1951&52, not found I8; L6; Cave 1988, L6+GC (NM);
- tripetala* (L)L. UMBRELLA MAGNOLIA. USA. H&S 1951, M5+GC; Cave 1986, L5+GC
- x veitchii* Bean. (*campbellii x denudata*). Hort. Types I8+MM M5+MM N5+MM
 'Isca' Veitch 1954, L5+CN L9 K10
 'Peter Veitch' H&S 1938&52, Veitch 1954, I9, not found O5
- virginiana* L. (*glauca*) SWEETBAY. USA. H&S 1952 dead L6, Koromiko 1981 J11 (NM)
 var. *australis* Koromiko nursery, not found J11
- wilsonii* (Finet & Gagnep)Rehd. China. Cave 1988, L4+GC (NM); P5+GC (NM);
- Mahonia: Berberidaceae (5+0=5)**
 M4 N5
- acanthifolia* Wall ex G Don. Nepal. H&S 1951, K8; Cave(ex Kunming), I5 (NM)
- aquifolium* (Pursh)Nutt. OREGON GRAPE. W N America. not found I10
- bealei* (Fort)Cart. China. D5
- lomariifolia* Tak. China, Burma. H&S 1947, not found O5
- mariesii* (NNC) Cave(ex Kunming)1989, I5 (NM)
- Mallotus: Euphorbiaceae (1+0=1)**
japonicus (Thunb)Muell-Arg. Japan, China, Korea. PS(ex seed Japan), S6
- Malus: Rosaceae (31+31=62)**
 C8(CP400) C11(PP84 PP85 PP64 PP66) C12(PP111 PP299 PP244 PP243)
 E8 E9(PP236) H5(Ci440) I3(Ci421) I5(CaP90) I7(CaP199) L8 K6(CaP51) K10(OH618) K11(OH517
 OH519 OH523 OH533) M5(very late) N5pendulous O8(DP18) P8(DP15,18) P10(BW1,2,3,3A,4,5) Q6
 S3(GD3 GD4) S4(GD1 GD2); N6 N8 O6 O8 R6 R7 R7(DP111)
- purple types C7 D6 D8 E4 E5 E7(three) E8 I3 I6 I9 J8toothed leaves N6 O9 P3 P9 Q6 Q7(DP14);
- 'Aldenhams Purple' (from *niedzwetzkyana*). Hort. 1948, C11+MM
- angustifolia* (Ait)Michx. SOUTHERN CRAB. USA. C12+MM H9+MM L3+MM, not found J8,
- apetala x pumila* P2 not found
- x arnoldiana* (Rehd)Sarg. (*floribunda x baccata*). J8+MM
- 'Atropurpurea' (Jay Darling.Hort. according to Krussmann). H7+CN
- 'Atrosanguinea' see *floribunda* var. *atrosanguinea*
- baccata* (L)Borkh. SIBERIAN CRAB. China. H7+CN; C11(PP65); not found H6
 'Gracilis' K6, S3+CN; not found Q4
 'Macrocarpa' L8+MM(Berry)
 var. *mandshurica* (Max)Schneid. MANCHURIAN CRAB. China. H&S 1948, not found B11
 'Microcarpa' (Name not confirmed). C12+MM
- baccata x pumila* O3 P3
- coronaria* (L)Mill. USA
 'Charlottae' F3+MM; mostly dead M6
 'Crimson Glory' (Name not confirmed). M6
 'Crimson Rod' (Name not confirmed). M4
 'Dartmouth' (*pumila* group) Hort. not found L6
 'David Nairn' (Name not confirmed). not found P10 S5
- domestica* (*pumila*) Europe, Caucasus, Turkestan. C13 E9 E12 F3 F10 J7 P6, not found O9

- 'Echtermeyer' (x *purpurea* 'Pendula')** ('Excellenz Thiel' x *niedzwetzkiana*). Hort.
Hort. H&S 1948, C11+MM D9+MM
- 'Eleyi'** (*niedzwetzkiana* x *spectabilis*). Hort. not found O9; see also Jay Darling
- florentina*** (Zucc)Schneid. Italy. D11+MM H8+GC; Cave(ex EWH)1988 L4+GC;
- floribunda*** Van Houtte. JAPANESE CRAB. Japan. Webb 1935, D6+MM D7+MM D9+MM F10+MM
J7+MM O7+MM O9+MM P8+MM
- 'Gibbs Golden Drop'** (Name not confirmed). H&S 1949, K11
- glaucescens*** Rehd. SWEET CRAB APPLE. USA. H&S 1948, not found B11 K12
- halliana*** Koehne. Japan, China. D5+MM E7+MM K6+MM, not found K2 J8
- x *hartwigii*** Koehne. (*baccata* x *halliana*). Hort. H&S 1948, not found B11
- 'Hillieri'** (*scheideckeri* group) Hort. H&S 1947, C12
- 'Hopa'** (*baccata* x *niedzwetzkiana*; *adstringens*(*baccata* x *pumila*), according to K) Hort. O3, not found O1
- hupehensis*** (Pam)Rehd. (*theifera*). TEA CRAB. China. C11+MM E9+MM E12+MM
G5+MM H6+MM I6 I8+MM I8+MT L6+MM G4+MM M6+MM
- hupehensis f. rosea*** PINK FLOWERED TEA CRAB, H&S 1951, not found J8
- ioensis*** (Wood)Britt. BECHTEL CRAB. USA
- 'Plena'** Webb 1935, L8+MM N6+MM O8+MM
- 'Jay Darling'** (*baccata* x *niedzwetzkiana*). Hort. E11+MM E12+MM
- 'John Downie'** Hort. K6
- kaido*** Dipp. (*M* x *madgeburgensis* Hartwig.) (*pumila* x *spectabilis*). Hort. E10+MM E11+MM J8+MM
- kaido*** Parde. (*M* x *micromalus* Makino.) (*baccata* x *spectabilis*). Hort. 1949, not found K4 K10
- kansuensis*** (Batal)Schneid. China. not found B12
- 'Lady Northcliffe'** (*baccata* group) Hort. H&S 1948, not found B11
- lancifolia*** Rehd. SWEET CRAB APPLE. USA. E10+MM L6+MM J7+MM
- 'Lemoinei'** (*purpurea* group). Hort. P8+CN
- x *madgeburgensis*** see *kaido*
- 'Mammoth'** (Name not confirmed). H&S 1949, K11, not found K7
- x *micromalus*** see *kaido*
- 'Montreal Beauty'** (*pumila* group) Hort. Webb 1935, K6+CN, not found I7
- niedzwetzkiana*** Dieck. (*pumila* var. *niedzwetzkiana*).
RUSSIAN PURPLE CRAB. Turkestan. not found P4
- x *platycarpa*** Rehd. (*coronaria* x *domestica*). BIG FRUIT CRAB. USA. H&S 1947, L6
- prunifolia*** (Willd)Borkh. Asia. H&S 1938, not found K4 L6
- 'Fastigiata'** K11; Pollock 1989 Q4(NM)
- var. *rinkii*** (Koidz)Rehd. (*M. ringo* Carr.) China. L6, not found K12
- x *purpurea*** (Barbier)Rehd. (*atrosanguinea* x *niedzwetzkiana*) I7+MT I7+MT; not found P4
- 'Red Tip'** (*ionensis* x *niedzwetzkiana*; *coronaria* 'Elk River' x *niedzwetzkiana*, according to Bean)
Hort. H&S 1949, K11
- x *robusta*** (Carr)Rehd. (*baccata* x *prunifolia*). Hort. HYBRID SIBERIAN CRAB. I9+MT
- sikkimensis*** (Wenzig)Koehne. SIKKIM CRAB India. not found L3
- 'Simcoe'** (*baccata* x *niedzwetzkiana*) Hort. H&S 1948, K11
- 'Sir Heaton Rhodes'** (Name not confirmed). M4
- x *soulardii*** (Bailey)Brit. (*domestica* x *ionensis*). USA. H&S 1948, not found K12
- spectabilis*** (Ait)Borkh. China. H&S 1949, not found B12
- 'Flore Plena'** (all +MM) C8 C12 D6 D7 E6 F4 I6 I7 I7 I8 J7
- 'Riversii'** maybe K12
- x *sublobata*** (Dipp)Rehd. (*prunifolia* x *sieboldii*). Japan. H&S 1948, C12+MM

- toringo* Sieb. (*sieboldii*). Japan. I6+MM
trilobata (Labill)Schneid. Asia. L6+MM
tschonokii (Max)Schneid. Japan. L3+MM N6+MM P6+MM S3+MM
 'Wisley' (*niedweizkyana* seedling). Hort. not found B12
yunnanensis var. *veitchii* Rehd. China. H&S 1949, I8
x zumi (Matsum)Rehd. (*baccata* var. *mandshurica* x *sieboldii*). Japan. L6+CN
- Manglietia: Magnoliaceae (1+0=1)**
 M4, (possibly *M.insignis*)
hookeri Cubitt & W W Sn. China, Tibet. H&S 1952, not found M4 H8
- Maytenus: Celastraceae (1+0=1)**
boaria Molina. (*chilensis*) Chile. Stevens 1935, H&S 1948, I6 P6 Q6
- Melaleuca: Myrtaceae (7+0=7)**
 J9
armillaris Smith. BRACELET HONEYMYRTLE. Australia. DSIR Ak 1980, F8+MM
decussata R Br. TOTEM POLES. Australia. not found H11
fulgens R Br. Australia. G7+GC
linariifolia Smith. SNOW IN SUMMER. Australia. not found I9
nodosa Smith. BALL HONEY MYRTLE. Australia. C6
stypelioides Sm. PRICKLY PAPER BARK. Australia. DSIR Ak 1975, K7
thymifolia Smith. FEATHER HONEY MYRTLE. Australia. DSIR Ak 1975, not found K9
- Melia: Meliaceae (1+0=1)**
azedarach L. BEAD TREE. Himalaya. not found Q9; Appleton 1988, K10+GC (NM);
- Melicytus: Violaceae (2+0=2)**
lanceolatus New Zealand. FRI197x, K2(NM), M1(NM),
ramiflorus MAHOE. New Zealand. M2 (bush)
- Meliosma: Sabiaceae (3+0=3)**
cuneifolia Franch. China. H&S 1959, R3
oldhamii Miq. China, Korea. H&S 1959, R3
tenuis Maxim. Japan. Hudson1988, L4 (NM);
- Mespilus: Rosaceae (1+0=1)**
germanica L. MEDLAR. Europe to Iran. not found E6, reverted S2
- Metasequoia: Taxodiaceae (1+0=1)**
glyptostroboides Hu & Cheng. DAWN REDWOOD. China.
 H&S 1949, I8+MM K12+MM; McKean, S7+GC
- Metrosideros: Myrtaceae (2+0=2)**
excelsa Sol. (*tomentosa*) POHUTUKAWA. NZ. FRI R 1979, M2 M3(bush); Williams TLC, seedlings S6
umbellata Cav. SOUTHERN RATA. NZ. FRI R 1979, M2(bush)
- Michelia: Magnoliaceae (3+1=4)**
compressa (Max)Sarg. Japan. H&S 1949, M8 L6+GC
dot SOPA Buch-Ham. China. H&S 1948&51, J9 N5
 'Caerhays form' H&S 1956, I8(reverted to type)
figo (Lour)Spreng. PORT WINE MAGNOLIA. China. C7+MM M3+MM H11 M4+MM
- Morus: Moraceae (2+0=2)**
alba L. WHITE MULBERRY. China. not found Q9
cathayana Hemsl. China. H&S 1959, R3
- Myoporum: Myoporaceae (1+0=1)**
laetum Forst f. NGAIO. New Zealand. K9+MM

Myrica: Myricaceae (2+0=2)*cerifera* L. WAXMYRTLE. USA. I9*pensylvanica* Loisel. USA. I5+GC**Myrsine: Myrsinaceae (2+0=2)***africana* L. Himalaya, China, Africa. I8+BS*australis* (A. Rich)Allan. (*Rapanea australis*) RED MATIPO. NZ.

D&D 1934, G10+MM K7+MM K8+MM M5 O9

Myrtus: Myrtaceae (5+1=6)*bullata* Banks & Sol. (*Lophomyrtus bullata*) New Zealand. K7*communis* L. COMMON MYRTLE. Meditt.‘*Variegata*’ VARIEGATED MYRTLE, H&S 1946, not found I8*lechleriana* (Miq)Sealy. Chile. H&S 1952, I8 I7+GC*luma* Molina. (*Luma apiculata*) Chile. H&S 1950, E10+MM F9+MM I8+MM*obcordata* (Raoul)Hook.f. (*Lophomyrtus obcordata*) ROHUTU. NZ. Webb 1937?, J8*x ralphii* Hook.f. (*Lophomyrtus x ralphii*) New Zealand. (*bullata x obcordata*). Webb 1937, not found K7*ugni* Molina. (*Ugni molinae*) CRANBERRY. Chile. D&D 1925?, Heritage1986, H11+GC**Nandina: Berberidaceae (1+2=3)***domestica* Thunb. SACRED BAMBOO. China. I8‘*Pygmaea*’ D&D, I9+MM‘*Nana Purpurea*’ not found I8**Neillia: Rosaceae (2+0=2)***thibetica* Franch. (*longiracemosa*) China. H&S 1949, I7+GC I8+GC*thyrsifolia* D Don. Himalaya. Toptrees 1988, R5+GC**Neolitsea: Lauraceae (2+0=2)***sericea* (Bl)Koidz. (*glauca*) Japan, Korea, China. PS(ex seed Cheju Island Korea)1981, G6+GC*f. xanthocarpa* (Nakai)Okuyama. E Asia. PS as above, not found H8**Nerium: Apocynaceae (1+4=5)***oleander* Soland. OLEANDER. Meditt. H5 H6 H8 H10 I8 J9 O7 O8 M4 M6‘*Mrs Rhoeding*’ H5‘*Pauline Gregory*’ not found I8‘*Souvenir de Phoenix Duval*’ I8+GC(NM)‘*Variegatum*’ not found H10**Nestegis: Oleaceae (2+0=2)***cunninghamii* (Hook f.) L Johnson. BLACK MAIRE. New Zealand.D&D 1934, not found K7(is an unnamed *Olea* here)*montana* (Hook f.)L Johnson. (*Olea montana*) MOUNTAIN MAIRE. NZ. D&D 1934, K7**Nothofagus: Fagaceae (11+0=11)***alpina* (Poepp & Endl)Oersted. (*procera*) RAULI. Chile. H&S 1948, died 1982 S8*antartica* (Forst)Oerst. ANTARTIC BEECH. Chile. H&S 1965, not found O9, died 1982*cunninghamii* (Hook f.)Oerst. Tasmania. Jellyman 1988, K10+GC (NM); Pukeiti 1988, K10+GC (NM);*dombeyi* (Mir.)Bl. COIGUE BEECH. Chile. H&S 1949&55, died 1982 H3 S8,*fusca* (Hook f.)Oerst. RED BEECH. NZ. D&D 1934, FRI 1979, K2 K2 Q10, died 1982 H11,*menziesii* (Hook f.)Oerst. SILVER BEECH. NZ. D&D 1934; FRI 1979, K2 K7*moorei* Maiden. Australia. H&S 1955, J9*obliqua* (Mirbel)Bl. ROBLE BEECH. Chile. H&S 1948, I2 R7, not found S8 N7*solandri* var. *cliffortioides* (Hook f.)Poole. MOUNTAIN BEECH. NZ. FRI R 1979, K7, not found N2

- solandri* var. *solandri* (Hook f.) Poole. BLACK BEECH. NZ. D&D 1934, O8, not found K7; FRI R 1979, M2
truncata (Col) Ckn. HARD BEECH. NZ. FRI R 1979, M2(bush)
- Nyssa*: *Nyssaceae* (3+0=3)
aquatica L. USA. Walker, D7+GC; Mortimor 1988, G4+GC (NM);
sinensis Oliv. China. Cave (Berry/Hillier), S8+GC
sylvatica Marsh. BLACK TULEPO. USA. Stevens 1935?, H&S 1955, D6+MM F4+GC G3+MM O1+GC P7
- Ochna*: *Ochnaceae* (1+0=1)
multiflora DC. Africa. D&D 1934, H11+MM M4+GC
- Olea*: *Oleaceae* (2+0=2)
europaea L. COMMON OLIVE. Meditt. H&S 1949, K11(OH657) N4
verrucosa Link. S.Africa. K11(OH537)
 also see *Nestegis*
- Olearia*: *Asteraceae* (2+0=2)
 K6
crosby-smithiana Petrie. New Zealand. K7
paniculata (J R & G Forst.) Druce. AKEAKE. NZ. not found G10 K8
- Osmanthus*: *Oleaceae* (4+1=5)
 E5
delavayi Franch. China. 1935-37, H5 H6 I10 L5
fragrans Lour. SWEET OSMANTHUS. Himalaya, Japan, China. H9
heterophyllus (G Don) P.S. Green. (*aquifolium*) Japan.
 'Variegatus' D8+MM I10+MM
suavis King. India, Tibet. H&S 1947, E10+BB
yunnanensis (Franch) P S Green. (*forrestii* Rehd) China. H5+GC; Welch ex EWH 1988, K7+GC
- X Osmarea*: *Oleaceae* (1+0=1)
burkwoodii Burkw & Skipwith. Hort. H&S 1937, G5+MM L5+MM
- Osmaronia*: *Rosaceae* (1+0=1)
cerasiformis (Torr & Gray) Greene. (*Nuttallia cerasiformis*, *Oemleria cerasiformis*).
 OSO BERRY. N America I7+GC, not found L6
- Ostrya*: *Betulaceae* (3+0=3)
carpinifolia Scop. HOP HORNBEAM. Europe, Asia minor. H&S 1959, S4 R4+GC, not found I2 P2
japonica Sarg. Japan, China. H&S 1949, not found E11
virginiana (Mill) K Koch. IRONWOOD. N America. H&S 1957, I2+GC
- Oxydendrum*: *Ericaceae* (1+0=1)
arboreum (L.) DC. SOURWOOD. USA. L6
- Paeonia*: *Ranunculaceae* (3+4=7)
 I8 I9
x lemoinei Rehd. Hort. not found
 'Chromatella' sulphur yellow double. not found
 'Lord Selbourne' not found
 'Mme Louis Henry' yellow pink salmon. not found
 'Sunrise' not found
lutea Delavay ex Franch. China. J9
 var. *ludlowii* Stern & Taylor. Tibet. not found
- Paliurus*: *Rhamnaceae* (1+0=1)
spina-christi Mill. (*australis*) S Europe, Orient. H7+GC

Pandorea: Bignoniaceae (0+1=1)

jasminoides (Lindl) K Schum. Australia

'Rosea' Nichols 1988, L5+GC

Parasyringa: Oleaceae (1+0=1)

sempervirens (Franch)W W Sm. China. H&S 1949, L11

Paratrophis: Moraceae (1+0=1)

microphylla not found Z14

Parrotia: Hamamelidaceae (1+1=2)

persica (DC)C A Mey. IRONWOOD TREE. Iran. 1937, C12 D5 E7 I5 J6 K2

Red Autumn form Cave, H6; Lowry H6 I6

Parrotiopsis: Hamamelidaceae (1+0=1)

jacquemontiana (Decne)Rehd. Himalaya. Appleton 1988, N4+GC (NM):

Parthenocissus: Vitaceae (1+0=1)

henryana (Hemsl.)Diels. & Gilg. (*Vitis himalayana*) China. Nichols 1988, L5+GC

Passiflora: Passifloraceae (1+0=1)

antioquiensis Karst. Columbia. Murphy1987, H11+GC dead.

Paulownia: Bignoniaceae (3+0=3)

J3

kawakamii Ito. China. Berry(exseed 1400m Szuchi Taiwan), J2+GC

lilacina Sprague. China. H&S 1950, I2+GC I3 J2+GC K10+GC

tomentosa (Thunb)Steud. ROYAL PAULOWNIA. China, Japan. not found R9(covered by slip), not found H11

Peltophorum: Fabaceae - Caesalpinaceae (1+0=1)

africanum (Name not confirmed). died M3

Pennantia: Icacinaceae (1+0=1)

corymbosa JR & G Forst. KAIKOMAKO. NZ. K7

Persea: Lauraceae (2+0=2)

borbonia Spreng. RED BAY. USA. H&S 1955, Q5

thunbergii (S&Z)Kosterm. Asia. BB(exseed Cheju, Korea), G6 M3

Petteria: Fabaceae - Papilionaceae (1+0=1)

ramentacea (Sieb.)Presl. Caucasus. H&S 1950, I9,

Phaedranthus: Bignoniaceae (1+0=1)

buccinatorius (DC)Miers. Mexico. Nichols 1988,L5+GC

Phellodendron: Rutaceae (4+0=4)

amurense Rupr. AMUR CORK TREE. China. C7+GC I4+GC

var. lavellei Sprague. Japan. H&S 1957, dead G5

chinense Schneid. China. H&S 1957, H2 I2

japonicum Max. (*amurense* var. *japonicum*) Japan. H&S 1959, R3

Philadelphus: Saxifragaceae (8+7=15)

C13 H5 I10 L6 K11

'Albatre' Hort. (virginalis group according to K, cymosus group according to Bean) H&S 1949, not found H10

'Atlas' (lemoine group) Hort. H&S 1947?, D10

'Aurea' (*coronarius* 'Aureus' ?) (NNC) H&S 1947, L5+GC

'Belle Etoile' (lemoine group). Hort. not found M3

californicus Benth. California. Pukeiti1986, K6 (NM);

coronarius L. MOCK ORANGE. Italy. E8 G10 G11; not found D9

delavayi Henry. China Burma. Pukeiti1986, L6 (NM)

'Girandinole' (virginalis group) Hort. H&S 1949, not found K12

- insignis* Carr. USA. Pukeiti1986, L6
intectus Beadle. (*pubescens* var. *intectus*) USA. H&S 1949, not found K12
mexicanus Schlect. Mexico. Pukeiti1986, L6; M4 (NM);
 'Monster' (cymosus group) Hort. H&S 1948, D10+MM
 'Norma' (polyanthus group) Hort. H&S 1948, D10
pubescens Loisel. USA. K11
sericanthus Koehne. China. H&S 1955, Q5+CN

Phoenix: Aracaceae (1+0=1)

- canariensis* Chabaud. CANARY ISLAND DATE PALM. Canaries.M3

Phormium: Agavaceae (1+1=2)

- tenax* J R & G Forst. NZ FLAX. NZ. not found P7,
 'Variegata' NEW ZEALAND FLAX, D7 E10 N7

Photinia: Rosaceae (8+2=10)

- beauverdiana* Schneid. China. H&S 1948&49&55, G4 L6 K12 P10
 var. *notabilis* (Schneid)Rehd & Wils. China. H&S 1955, G4
dauidsoniae Rehd. & Wils. China. Harrison1934 D5; seedlings from the original, D4 F5 G10+MM H2+MM
 x *fraseri* Dress. Hort?
 'Robusta' K11
glabra (Thunb)Max. Japan.
 'Rubens' Webb 1937, D6 F10 F11 H2 I7, not found E6
parvifolia (Pritz)Schneid. (*subumbellata*). China. H&S 1959, R3
serrulata Lindl. China. B5 C6two C13 D8+MM E9+MM E6+MM H5
villosa (Thunb)DC. Japan, Korea, China. H6 I6
 var. *laevis* (Thunb)Dipp. K12
 var. *sinica* Rehd. & Wils. C&W China. H&S 1938, H5+GC H9 O2+MM P3+MM P9+MM

Phyllocladus: Podocarpaceae (3+0=3)

- alpinus* Hook f. MOUNTAIN TOATO. NZ. FRI R 1979, N2(bush)
glaucus Carr. TOA TOA. NZ. D&D 1934, not found K7
trichomanoides Don. TANEKAHA. NZ. FRI R 1979, M3(bush)

Phyllostachys: Poaceae (2+0=2)

- aurea* Riv. FISHPOLE BAMBOO. China. H9+MM, not found F8
nigra (Lodd)Munro. BLACK BAMBOO. China, Japan. N8+MM

Physocarpus: Rosaceae (0+1=1)

- opulifolius* 'Aurea' (L.)Max. N America. Beaumont1986, H11+GC

Picea: Pinaceae (23+3=26)

- H9 G11 L12 O8
abies (L.)Karsten. (*excelsa*) COMMON SPRUCE. Europe. P6+E; not found D6
 'Inversa' WEEPING COMMON SPRUCE, not found P10
 'Pendula' I9
bicolor (Max)Mayr. (*P.alcockiana*) ALCOCK SPRUCE. Japan. H&S 1949, L11
brachytyla (Franch.)Pritz. China. L11+E
brachytyla f. *latisquamea* Dallim. & Jacks. (*complanata* f. *latisquamea*) China. H&S 1949, L12
complanata f. *latisquama* L11+E (see *brachytyla* f. *latisquamea*)
engelmannii (Parry)ex Engl. ENGELMANN SPRUCE. USA. not found D7
 f. *glauca* (R. Sm.)Beissn. USA. not found L7
excelsa 'Pendula' see *P.abies* 'Pendula'

- glauca* (Moench)Voss. WHITE SPRUCE. E N America. L7+E
var. albertiana (S Brown)Sarg. ALBERTA SPRUCE. Canada. 1949, not found L12
 ‘Conica’ DWARF ALBERTA SPRUCE, M7
- koyamae* Shiras. Japan. L12
- mexicana* Martinez. Mexico. T5+GC
- morrisonicola* Hayata. TAIWAN SPRUCE. Taiwan. H&S 1949, L11+E
- obovata* Ledeb. SIBERIAN SPRUCE. Europe, Siberia. H&S 1949, L11+E
- omorika* (Panic)Purk. SERBIAN SPRUCE. Serbia. E5+GC I8+E, not found O7
sericea (Name not confirmed) O6
- orientalis* (L.)Link. ORIENTAL SPRUCE. Caucasus, Asia minor H&S 1949, G4+MM L12+MM
- pungens* Engl. BLUE SPRUCE. USA. not found I8
f.glauca (Reg)Beissn. not found S4 S5
- rubens* Sarg. (*rubra*) RED SPRUCE. N America. O6+GC P6+GC Q7+GC R7+GC
- schrenkiana* Fisch & C A Mey. SCHRENKS SPRUCE. Turkestan. H&S 1949, L11
- sitchensis* (Bong)Carr. SITKA SPRUCE. N America. H&S 1949, L11+E S3+GC
- smithiana* (Wall)Boiss. (*morinda*). HIMALAYAN SPRUCE. Himalaya.
 B6+MM D5+MM D6+MM D7+MM D8+MM I6+MM
- spinulosa* (Griff)Henry. (*morindoides*). Himalaya. H&S 1949, I2 L11+E
- wilsonii* Mast. WILSONS SPRUCE. China. H&S 1949, L11+E

Picrasma: Simaroubiaceae (1+0=1)

- quassioides* (D Don)Bennet. E Asia. H&S 1959, Q10+GC

Pieris: Ericaceae (1+1=2)

- ‘Forest Flame’ (*japonica* x *formosa* ‘Wakehurst’) Hort. H&S 1964, not found H11
formosa var. forrestii Airey-Shaw. (*forrestii*) China. H&S 1956, not found; Cave1987, H8+GC I7

Pinus: Pinaceae (82+1=83)

- L12 I13 S7
- sp. McKean* (ex Myers Park)1987, (NM).
- aristata* Engl. BRISTLECONE PINE. USA. Tantrum 1988 dead
- armandii* Franch. ARMAND PINE. China. K5; Freeman 1988 (NM); Murphy(ex EWH) nursery;
- ayacahauite* Ehrenb. MEXICAN WHITE PINE. Mexico. Tantrum 1988 (NM)
var. veitchii Shaw. Mexico. McKean1988 (NM).
- balfouriana* Grev.&.Balf. FOXTAIL PINE. California. Tantrum(nursery)
- banksiana* Lamb. JACK PINE. Canada. H&S 1949, L13 dead; Tantrum 1988 (NM); Appleton 1988 (NM);
- brutia* Ten. (*halepensis var. brutia*). Asiatic Turkey. O7+GC
- canariensis* Sweet ex K Sprengel. CANARY ISLAND PINE. Canaries. C5 L12+McK
- cembra* L. AROLLA PINE. Middle Europe. H&S 1949, not found N13
- cembroides* Zucc. PINYON PINE. Mexico to USA. McKean(ex University of Chipingo)1989, (NM)
var. edulis (Engelm)Voss. (*edulis*) COLORADO PINYON. Mexico to USA. Cave 1989 (NM)
- contorta var. contorta* SHORE PINE. W N America. L13 fallen.
 Appleton(ex Murphy ex Alberta), nursery.
- contorta var. latifolia* Engl. & S Wats. LODGEPOLE PINE. USA. felled N4, not found Q9
- cooperi* Blanco. Mexico. McKean 1988 (NM)
var. ornelasi (NNC) Mckean 1987, (NM)
- coulteri* D Don. BIG CONE PINE. Mexico. Tantrum 1988 (NM); Appleton, nsy.
- cubminicola* Andre. & Beaman. Mexico. Tantrum 1988 (NM)
- densata (tabuliformis var. densata)* China. CedarLodge 1987, (NM)

- densiflora* S&Z. JAPANESE RED PINE. Japan, Korea. H&S 1949, L12
 ‘*Umbraculifera*’ Mayr. Japan. L13+CN
- douglasiana* Martinez. Mexico. McKean 1987, (NM)
- durangensis* Martinez. DURANGO PINE. Mexico. O9+GC Q9+MM; McKean 1987 (NM).
- echinata* Mill. SHORT LEAF PINE. USA. Tantrum 1988 (NM)
- elliottii* Engelm. SLASH PINE. SE USA. Trap 1989, (NM).
- englemannii* Cart. APACHE PINE. USA, Mexico. McKean 1987, (NM).
- flexilis* var. *reflexa* (Name not confirmed). McKean 1987 (NM)
- greggii* Engel. ex Parl Mexico. Tantrum 1988 (NM); CedarLodge1986 (NM)
- halepensis* Mill. ALEPPO PINE. Portugal to Afghanistan. H&S 1949, L12 O4+GC, not found M13
- hartwegii* Lindl. (*montezume* var. *hartwegii* (Lindl.)Engl.) McKean 1988, (NM).
- herrarei* Martinez. Mexico. Tantrum 1988 (NM)
- hwangshanensis* McKean 1987, (NM).
- jeffreyi* Grev & Balf. JEFFREY PINE. USA, Mexico. H&S 1949, L12
- johannis* (NNC) McKean 1987,88 (NM)
- kesiya* Royal ex Gordon. (*khasia*). Burma, Thailand, Assam. O10; Freeman 1986, (NM);
- koraiensis* L&Z. KOREAN PINE. Burma, Thailand. H&S 1949, L13
- kr611* Mexico. McKean 1988 (Keith Rushford Mexico collection) (NM)
- lambertiana* Dougl. SUGAR PINE. USA, Mexico. H&S 1949, not found L13; Tantrum 1988 (NM)
- lawsonii* Roezl. Mexico. Tantrum(ex Mexico)1988 dead
- leiophylla* Schlech.&Chamisso. Mexico. McKean 1987 (NM)
- lumholtzii* Robinson & Fernal. LUMHOLTZ PINE. Mexico. McKean 1988 (NM);
- massoniana* Lamb. MASSON'S PINE. China. McKean 1988 (NM);
- maximartinezii* (NNC) Cave 1986 (NM).
- michoacana* Martinez. McKean 1987, (NM)
- montezume* Lamb. MONTEZUME PINE. Mexico. G9+GC; McKean1987 (NM); CedarL1986 T3 (NM);
- montezume* var. *rudis* (Endl)Shaw. Mexico. McKean 1987 (NM).
- monticola* Dougl ex D Don. WESTERN WHITE PINE. N America. C11+GC, not found G9
- morrisonicola* Hayata. China, Taiwan. McKean 1987, (NM).
- mugo* Turra. (*P.montana*). MUGO PINE. Europe, Balkans. Tantrum 1988 dead
- mugo* var. *pumilio* (Haenke)Zenari. Europe. H&S 1952, not found L13
- muricata* D Don. BISHOP PINE. W N America. Goudie 1934, felled M3; Appleton (blue strain) nursery.
- nelsonii* Shaw. Mexico. Tantrum 1988 dead
- nigra* Arnold. AUSTRIAN PINE. Austria.
 var. *caramanica* (Loud)Rehd. (*nigra* ssp. *pallasiana* Lamb Holm)
 CRIMEAN PINE. Balkan, Crimea. L12
 var. *corsicana* (Loud)Hyl. (*nigra* ssp. *laricio*.(Poir)Maire.)
 CORSICAN BLACK PINE. Italy, Corsica. L12
 var. *maritima* (*P.laricio*) CORSICAN PINE H9 (pavilion)
- oocarpa* Schneid. Mexico, Nicaragua. Tantrum1988 (NM); CedarL1986 (NM);
- parviflora* S&Z. JAPANESE WHITE PINE. Japan. H&S 1949,
 L13+McK, L12, these two not the same; Tantrum(nsy)
- var. *hinekumatsu* (Miyabe & Kudo).Makino. Japan.
 Tantrum(ex R Gordon ex Wade)1988 (NM)
- patula* Schlect. & Cham. JELECOTE PINE. Mexico. Goudie 1934. C5+MM J4+MM K4+MM
 K6+MM N5+MM N9+MM
- peuce* Griseb. MACEDONIAN PINE. Albania, Greece. H&S1952, not found L13; Tantrum 1988 dead;
- pinaster* Ait. MARITIME PINE. Meditt. Goudie 1934, Q8, I12+GC

- pinea* L. STONE PINE. Meditt. O10
- ponderosa* Dougl ex Laws. WESTERN YELLOW PINE. W N America.
H&S 1949, M13+GC (NM); Tantrum 1988 (NM)
- pseudostrobus* var. *apulcensis* (Lindl) Shaw. Mexico. McKean 1987, (NM)
- pungens* Lamb. HICKORY PINE. E N America. J7+GC, not found I8 P6
- radiata* D Don. RADIATA PINE. USA. O9+MM, top OH
- resinosa* Ait. AMERICAN RED PINE. E N America. Tantrum 1988 (NM)
- rigida* Mill. PITCH PINE. N America. H&S 1949, L12+McK
- roxburghii* Sarg. LONG LEAVED INDIAN PINE. Himalaya. Appleton (nsy).
- sabiniana* Dougl. DIGGER PINE. USA. Tantrum 1988 (NM); Trap (nsy).
- serotina* Michx. POND PINE. USA. R8
- sinensis* Mayr. see *P.tabuliformis*
- strobiformis* Engelm. PINO ENANO. Mexico. Tantrum (nursery).
- strobus* L. EASTERN WHITE PINE. E N America. H&S 1949, H7
- sylvestris* L. SCOTS PINE. Europe. H&S 1949, not found M13
f. argentea Stev. Caucasus. H&S 1949, L12
var. mongolica McKean 1987, (NM).
- tabuliformis* Carr. (*sinensis* Mayr.) CHINESE PINE. China. H&S 1949, L12+McK
- taeda* L. LOBLOLLY PINE. USA. CedarLodge 1987, (NM)
- thunbergii* Parl. JAPANESE BLACK PINE. Japan. Tantrum 1988 (NM)
- torreyana* Parry ex Carr. TORREY PINE. S California. Jellyman 1988, (NM)
- uncinata* Mill. ex Mirb. (*mugo* var. *rostrata*). MOUNTAIN PINE. Switzerland. H&S 1949, L12
- virginiana* Mill. SCRUB PINE. USA. R10, (one WL S8?); Tantrum 1988 (NM)
- wallichiana* A B Jacks. (*griffithii* McClelland, not Parl; *excelsa* ex D. Don, not Lamb).
BHUTAN PINE. Himalaya. C5+MM
- yunnanensis* Franch. (*tabuliformis* var. *yunnanensis*).
YUNAN PINE. China. H&S 1949, L13; McKean 1987 (NM).
- Piptanthus: Fabaceae - Papilionaceae (1+0=1)*
laburnifolius (D Don) Stapf. (*nepalensis*) Himalaya. Appleton 1988, M4+GC (NM)
- Pistachia: Anacardiaceae (2+0=2)*
O3 P4
chinensis Bge. CHINESE PISTACHIO. China. H&S 1947&49,
C11+GC G9 K12 L12+MM O9 P3 P5 S3
vera L. PISTACHIO. Asia minor, Syria. H&S 1955, H4
- Pithecellobium: Fabaceae - Mimosaceae (1+0=1)*
pruinatum Australia. Bull 1988, M4+GC (NM);
- Pittosporum: Pittosporaceae (8+1=9)*
L3
colensoi Hook f. NZ. FRI R 1979, M2(bush), not found H9
crassifolium Banks & Soland. KARO. NZ. not found K7 F10
dallii Cheesmn. NZ. Millichamp 1988, M3(bush)
eugenioides Cunn. TARATA. NZ. K7 not found E5
'*Variegatum*' D&D 1934?, O8, not found H11 Q6
phillyraeoides DC. Australia. Bull 1987, dead G9+GC
ralphii Kirk. NZ. D&D 1934?, I7+MM K4+MM K7 K9+MM G10+MM
tenuifolium Gaertn. KOHUHU. NZ., FRI R 1979, D4+MM G10+MM H7 K7 M4 O4+MM
viridiflorum Sims. S Africa. Bull 1988, M4+GC

Platanus: Platanaceae (7+4=11)

D4 D12(PP296)

x acerifolia (Ait)Willd. LONDON PLANE. Horton 1918-20, E4 F3+MM I2 J3,
located (but NM) E14 F15 G16'Cantabrigensis' (*P.cantabrigiensis*) H&S 1948, E12***cuneata*** Willd. see *P.orientalis* var. *cuneata*. (Willd)Loud.***orientalis*** L. ORIENTAL PLANE. Europe to Asia minor. H&S 1948, E12; not found C12

1372 MWD 1980, nursery

1372 MWD 1980, nursery

1384 MWD 1980, nursery

var. *cuneata* (Willd)Loud. (*P.cuneata*) D12var. *insularis* (*P. cretica*) CYPRIAN PLANE. H&S 1945&48, D12 J4***mexicana*** Moric. Mexico. Berry(Puebia Mexico), S4+GC***racemosa*** Nutt. CALIFORNIA SYCAMORE. USA. H&S 1948, C9 F6 K3 L3, not found D12***wrightii*** S Wats. USA, Mexico. Hortex1986, K2+GC***Platycarya: Juglandaceae (1+0=1)******strobilacea*** S&Z. China. H&S 1948, F11 P10***Podocarpus: Podocarpaceae (9+2=11)***

K7(CaP144) M7 P3

andinus Poepp. ex Endl. (*Prumnopitys elegans*.Phil) PLUM FRUITED YEW. Chile. H&S 1949, G9***ferrugineus*** G Benn. ex D Don. MIRO. NZ. FRIR 1979, I7, not found N2***hallii*** Kirk. HALLS TOTARA. NZ. FRIR 1979, N2(bush)***henkellii*** Stapf. S Africa. M7+GC***latifolius*** (Thunb)R Br.ex Mirb. UPRIGHT YELLOW-WOOD. S Africa. H&S 1949, H4***macrophyllus*** (Thunb)D Don. China, Japan. H&S 1949, G3***salignus*** D Don. (*chilinus*). Chile. H&S 1948, not found G3 N7***spicatus*** R Br. ex Mirb. MATAI. NZ. FRIR 1979, not found M2***totara*** G Benn. ex D Don. TOTARA. NZ. D&D 1934?, I7 K7 M2

'Aurea' K8+MM

'Pendula' WEEPING TOTARA, G4+MM

Podranea: Bignoniaceae (1+0=1)***ricasoliana*** (Bail)Sprague. S Africa. Nichols 1988, L5+GC***Poliothyrsis: Flacourtiaceae (1+0=1)******sinensis*** Oliv. China. H&S 1955&57, I2 K10 N7 P8 R7***Pomaderris: Rhamnaceae (2+0=2)***

K7

apetala Labill. TAINUI. NZ. D&D 1934?, K5 K7 L8***rugosa*** Cheesmn. NZ. D&D 1934, not found K6 K7***Poncirus: Rutaceae (1+0=1)******trifoliata*** (L.)Raf. BITTER ORANGE. China, Japan. J8+M.M***Populus: Salicaceae (10+18=28)***

G3 S7 S8 S9

alba L. SILVER POPLAR. Europe, Africa, Asia.

'Pyramidalis' (P. 'Bolleana') BOLLES POPLAR, Goudie 1934, J11+GC (NM);

alba x glandulosa 'Korea 1' Hort. MWD 1980, not located L14***alba x grandidentata*** Hort. nursery'Androscoggin' (*maximowiczii x trichocarpa*) Hort. not located S8

x canadensis Moench. CAROLINA POPLAR. USA.

‘Serotina’ (*P.serotina*) E8+GC

‘Serotina Aurea’ (P. ‘Serotina Aurea’) not found

x candicans Ait. (*balsamifera x deltoides*) BALM OF GILEAD POPLAR. USA. B5, not found J4

ciliata Wall. HIMALAYAN BALSAM POPLAR. Himalaya. MWD 1969, N14+GC (NM); P12 (NM);

deltoides Marsh. (*P. monolifera*) AMERICAN POPLAR. USA, Europe, Africa.

‘Carolin’ (*P.angulata*) CAROLINA POPLAR S10

‘Frimley’ G3, not located K14

‘Frimley’ hyd Hort. removed F4

‘Frye’ (*laurifolia x nigra*) Hort. not located S7

lasiocarpa Oliv. CHINESE NECKLACE POPLAR. China. H&S 1955, G4+GC; McKean1988, R7 (NM);

‘Maine’ (*candicans x berlinensis*) Hort. not located S7

maximowiczii M1012 Henry. JAPANESE BALSAM POPLAR. China, Japan. MWD 1976, Q2 Q3+GC

nigra L. BLACK POPLAR. Africa, Europe.

‘Italica’ LOMBARDY POPLAR, Webb 1917, E4+MM F6+MM I2+MM

I3+MM I6+MM J3+MM

‘Rochester’ (*maximowiczii x nigra* Plantierensis) Hort. not located S8

‘Roxbury’ (*nigra x trichocarpa*) Hort. not located S8

‘Rumford’ (*laurifolia x nigra*) Hort. not located S8

simonii Carr. CHINESE BALSAM POPLAR. China. F4+GC; S7 (NM); MWD 1988, T7+GC

‘Strathglass’ (*laurifolia x nigra*) Hort. not located S8

suaveolens Fisch. SIBERIAN BALSAM POPLAR. China. not found F4

szechuanica Schneid. SICHUAN POPLAR. China. H&S 1955, I2+GC S3 Q3 O1 O2

var. tibetica (*P.violascens*) H&S 1947&55, P4, not found S4 S9

tremula L. QUAKING ASPEN. Europe, Africa, Asia. McKean(MWD)1988, P0+GC (NM); P0+GC (NM);

wilsonii Schneid. China. dead

yunnanensis Dode. YUNNAN POPLAR. China. Goudie 1934, Wilson 1939, K6+GC, M10+GC

yunnanensis 76-200-44 MWD 1981, not found F11

Potentilla: Rosaceae (0+2=2)

fruticosa L. Europe.

‘Parviflora’ H&S 1947, not found H10

‘Vilmoriniana’ H&S 1946, not found H10

Prinsepia: Rosaceae (1+0=1)

uniflora Batal. China. H&S 1959, not found Q7

Prostanthera: Lamiaceae (2+0=2)

ovalifolia R Br. Australia. O8+MM Q9+MM Q10+MM

rotundifolia R Br. Australia. D&D 1934, Q9+MM

Protea: Proteaceae (0+1=1)

‘Clarks Red’ Hort. I9+MM

Prumnopitys: Podocarpaceae

elegans G9 see *Podocarpus andinus*.

Prunus: Rosaceae (44+62=106)

B5 C4 C7 C11 D7 E10 F4 F9 H5 H6 H8 I4 I5 I8 I9 J8 L7 L9 L9 K11 K12 N5 O1 Q5

‘Alisons Pink’ J7+MT

apetala (S&Z) France & Sav. (*tschonoskii*). Japan. 1948. not found L5

armeniaca L. APRICOT. China. P10+MM, not found S6

‘Dawn’ FLOWERING APRICOT, R9 (as Celestial Dawn); not found H9

- avium* L. GEAN, WILD CHERRY. Europe. H5+GC(NM), I4 I8 J4 K11 L9, not found H8
 ‘Grandiflorum’ H&S 1951, F8
 ‘Plena’ DOUBLE FLOWERED GEAN, not found L6(removed)
 ‘Tangshi’ (Name not confirmed). CHINESE CHERRY, I3
 ‘Awanui’ (Name not confirmed). PS 1981. not found H5
- x blireana* Andrea. (*cerasifera* ‘Atropurpurea’. x *mume*) B5 C7 D5 D6 D7 D8 F5 G11 K5 K6 P9 P10
 R10, not found H9 S9
- campanulata* Max. BELL FLOWERED CHERRY. Japan. E7 F8 G9 H4 H5 H10 I4 I8 J6 J7 J7
 K2 K4 K6 K12 M4 N4 N5 R6 Q7
formosa form K11
 ‘Plena’ DOUBLE BELL FLOWERED CHERRY, H&S 1949, K11
- canescens* Bois. GREY LEAF CHERRY. China. H&S 1949, not found K12
- cantabrigiensis* Stapf. (*pseudocerasus* var. *cantabrigiensis*) CAMBRIDGE CHERRY China. I4 (NM);
- cerasifera* Ehrh. CHERRY PLUM. Asia minor. (yellow plum) C5 C6 C8+MM C7+MM D8 E5
 F11 I9 J2 R10
 ‘Atropurpurea’ (‘Pissardii’) bronze lvs, white flws PURPLE LEAF PLUM
 C7 C6 C10 C12 D8 J7 K5 K10 L5 L6
ssp. divaricata small yellow plum, green lvs, white flws. G8 J8 Q9
 ‘Lindsayae’ green leaves, pink flowers. I8
 ‘Thundercloud’ purple lf, pink flw C5 C6 D7 D8 K6 P10 R10,
misc purple types D5 D9 G4 E5 E10 I3 K5 M4
- cerasoides* D Don. China. K4+GC L4+MM L5+MM L6+MM M3 M4+MM M5 N5+MM and naturalising
- cerasoides* var. *rubea* Ingram. CARMINE CHERRY. China. H&S 1954,
 K6+MM K11 O8; Cave ex Hudson 1988, F6+GC
- concinna* Koehne. China. G9
- conradinae* Koehne. China.
 ‘Semi Plena’ H&S 1947, F8
- copollin* Zucc. (*salicifolia* Kunth). P4+GC
- dauidiana* (Carr)Franch. DAVID’S PEACH. China.
 ‘Alba’ WHITE FLOWERED DAVID’S PEACH, H&S 1948, C12
 ‘Rubra’ PINK FLOWERED DAVID’S PEACH, H&S 1948, C12
- decora* (Name not confirmed). H&S 1948, K11
- domestica* L. COMMON PLUM. Europe. I7
- dulcis* D A Webb. ALMOND. N Africa. K12
 ‘Burbank Seedling’ N4+CN
 ‘Early Jordan’ removed H10
 ‘IX L’ K11+CN L12+CN N5+CN
 ‘Monovale’ K11+CN
 ‘Papershell’ N4+MT
- glandulosa* Thunb. BUSH CHERRY. China. I7+GC
 ‘Rosea Plena’ DOUBLE FLOWERED BUSH CHERRY, I9+MM
- glaucescens* (Name not confirmed). C11+MT
- x hillieri* Hillier. (*incisa* x *sargentii*) Hort. H&S 1947, K11
- ilicifolia* Walp. California. HOLLY LEAF CHERRY H&S 1948, K10
- x incam* ‘Okame’ Hort. (*incisa* x *campanulata*). F8+MM G9 M5+MM
- incisa* Thunb. FUJICHERRY. Japan. L6
- x ivensii* (*yedoensis* ‘Ivensii’) H&S 1949, K11

- x juddii* E Anderson. (*sargentii* x *yedoensis*). K11
- x kanzakura* 'Rubescens' F10+MM I4+CN I5+CN J4+CN;
not true according to Sykes, these trees are a campanulata form.
- laurocerasus* L. CHERRY LAUREL. Europe, Asia minor. C10+MM D4+MM G10+MM J10+MM K10+MM
- lusitanica* L. PORTUGAL LAUREL. Spain, Portugal. E5+MM H8+GC H10+GC
- lyonii* Sarg. CATALINA CHERRY. California. H&S 1948, K10
- maackii* Rupr. MANCHURIAN CHERRY. Manchuria. I5+GC
- mahaleb* L. ST LUCIE CHERRY. Asia minor. H4+GC
'Pendula' WEEPING ST LUCIE CHERRY H&S 1948, C11+MM
- malifolia* (Name not confirmed; *padus* 'Malifolia' ?). H&S 1949. not found K13(stock)
- maximowiczii* Rupr. Japan, Korea, China. H&S 1948, C12+GC
- mume* S&Z. JAPANESE APRICOT. Japan. O9 R10
'Celestial Dawn' H5 R10+CN
'Peggy Clark' R10+MT
'Rosea Flore Plena' P10+MM R10+CN
'The Geisha' I5
- nipponica* Matsum. ALPINE CHERRY. Japan. I8+MM J4+MM K6 Q7+MM
- padus* L. BIRD CHERRY. Europe, Asia, Japan. H5 P4+GC
'Albertii' H&S 1948, dead K12
'Pandora' (*subhirtella* 'Ascendens Rosea' x *yedoensis*). Hort. H&S 1949&52, F4 I8 L9+M K12
- persica* (L.) Batsch. PEACH. China. D9+MM E7 E10 F8 F9 H6 I6 L4 O8(double shocking pink) O9
'Folius Purpureus' PURPLE LEAF PEACH F8+MM G8+MM J9+MM
'Helen Borchers' O9+MM R10+MM
'Pendula' H7 H10 I8
'Pollardii' E7+MM F7+MM G8
'Russells Red' not found I9
- salicifolia* Kunth. (*copollin* Zucc.) Mexico. L5+GC (NM);
- sargentii* Rehd. SARGENT CHERRY. Japan. J6
- sargentii* ?? see *P x hillieri*. H&S 1948, K11
- x schmittii* Rehd. (*avium* x *canescens*) Hort. H&S 1949, not found K12
- seikan?* J7 this label appears in Cook's notes on the tree 'Alisons Pink'.
- serotina* Ehrh. BLACK CHERRY. USA. 1975, G6+GC, not found N7; Tantrum 1988 (NM);
- serrula* Franch. China. Millichamp 1981, K11, not found G5
- serrulata* Lindl. China. cvs C5 D5 D9 E6 E7 F9 F10 G9 H7 H10 I6 I8 J9 S4 S3 R2 Q4 R10
'Asano' (*serrulata* f. *geraldinae*) H&S 1948, L12
'Ashi botan' (Name not confirmed). Q9
'Benden' (*serrulata* f. *rubida*) H&S 1948, K12
'Botrykawa' (Name not confirmed). not found H6, appears to be 'Fugenzo'
'Fugenzo' ('J.H.Veitch'). D5 D7+MM D8+MM E5 E6 E8+MM F5+MM G9 H5 Q1
'Hisakura' (*serrulata* f. *splendens*) I6 K11 K12
'Hokusai' H&S 1949, not found K12
'J H Veitch' ('Fugenzo', 'Kofugen', 'Benifugen') H6 I6 I7 L9
'Kanzan' (*serrulata* f. *purpurescens*). H&S 1949, K11 R9, not found I7 L6
'Kiku zakura' (*serrulata* f. *chrysanthemoides*). not found F9
'Kofugen' ('Fugenzo', according to Bean). R9
'Mt Fuji' see 'Shirotae'
'O'Naden' D8 H6 J8+MM L6+MM

- 'Ojoichin' (*lannesiana* 'Ojoichin') H7
 'Pink Perfection' H&S 1951, not found R9
 'Shimidsu' ('Shogetsu', *serrulata f. longipes*) not found R9
 'Shirotae' H&S 1952, G9 K9 Q9, not found H5
 'Tai Haku' GREAT WHITE CHERRY. H&S 1952, F9 H6 J9 K11, not found R9
 'Ukon' ('Yukon') F9+MM I6+MM R10+MM
 'Yedo zakura' (*serrulata f. nobilis*). R9+CN
x sieboldii (Carr)Wittmack. ('Takasago', *pseudocerasus* 'Watereri', *serrulata f. sieboldii*).
 (*apetela x speciosa*). H6 I3 (labelled 'Takasago'), K6 (labelled 'Watereri'),
 'Superba' K7,
subhirtella Miq. HIGAN CHERRY. Japan.
 var. *ascendens* Wils. Asia, H&S 1951?, K12, not found I8
 'Autumnalis' AUTUMN CHERRY M4, not found L6
 'Flore Plena' DOUBLE FLOWERED SPRING CHERRY not found K12
 'Fukubana' H&S 1947, L12
 'Pendula' D7 K11 Q7, not found Q11
 'Pendula Rubra' not found I9 K12
 'Rosea' H&S 1951, not found I9
 'Takasago' see *sieboldii*.
tschonokii (*apetela*). Q4
tomentosa Thunb. DOWNY CHERRY. China, Japan. G5 I7+GC
x wrightii Hort. L8+MM N6+MM
x yedoensis Matsum. (*speciosa x subhirtella*). YOSHINO CHERRY. Japan. D9 E9 F8 F9 I5 J5
 J6 K6 K7 M6
 'Purpurdens' ('Pendula') D6+MM E6+MM
yedoensis x subhirtella 'Ascendens' Hort. H&S 1949, K12
Pseudocydonia: Rosaceae (1+0=1)
sinensis Schneid. CHINESE QUINCE. China. not found F6. E7 E10 H5 H9 K6; Gallen 1988, S6+GC (NM)
Pseudolarix: Pinaceae (1+0=1)
amabilis (Nelson)Rehd. GOLDEN LARCH. China. Cave(Kunming), K3 (NM)
Pseudopanax: Araliaceae (3+0=3)
arboreus (L f.)W R Philipson. (*Nothopanax arboreum*) FIVE FINGER. New Zealand.
 M2(bush), not found K7
crassifolius (Soland)K Koch. LANCEWOOD. New Zealand. FRI R 1979, M2 Q10
discolor (Kirk)Harms. New Zealand. not found K7
Pseudotsuga: Pinaceae (3+0=3)
macrocarpa (Torr)Mayr. BIG CONE DOUGLAS FIR. USA. H&S 1951, not found S8
macrolepis (Name not confirmed). McKean 1988, K10+GC
menziesii (Mirb)Franco. (*taxifolia*) DOUGLAS FIR. W N America. C7 E8 G10 G11 I6 J5
 J6 J10 K5 K6 K9 L7 L11 O4 P5 P6
Ptelea: Rutaceae (1+0=1)
trifoliata L. HOP TREE. E N America. H&S 1959, Q5+MM
Pterocarya: Juglandaceae (3+0=3)
 O3 P3
fraxinifolia (Lam)Spach. (*caucasica*) CAUCASIAN WINGNUT. Caucasus
 H&S 1956, H3(and many suckers), L8+GC,
x rehderiana Schneid. (*fraxinifolia x stenoptera*). Hort. R3+MM
stenoptera C. DC. CHINESE WINGNUT. China. H&S 1956&59, R3+MM P10?

Pterostryax: Styraceae (2+0=2)*corymbosa* S&Z. Japan. H&S 1955, I2+GC*hispidia* S&Z. Japan. Appleton 1988, H7+GC dead; Appleton 1988, I2+GC (NM), K10+GC (NM)**Punica: Punicaceae (1+4=5)***granatum* L. POMEGRANATE. Europe, Himalaya. H9'Albo Plena' ('Multiplex') DOUBLE WHITE FLOWERED POMEGRANATE
H&S 1948, not found H8

'Double Red' (Name not confirmed). L5+GC Hatch 1988 (NM)

'Nana' DWARF POMEGRANATE H&S 1948, H10, not found H8

'Wonderful' (Name not confirmed). P5

Pyracantha: Rosaceae (3+0=3)

L6 K12 R10

angustifolia (Franch)Schneid. China. O10+GC R6+MM; not found O4*coccinea* Roem. Italy, Aisa minor. not found O7*crenato-serrata* (Hance)Rehd. (*yunnanensis*) China J2+BS**Pyrus: Rosaceae (5+0=5)***alnifolia* (*X Sorbopyrus alnifolia*). Hort. D12*auricularis* (*X Sorbopyrus auricularis*) Hort. D12*domestica* types E9 F9*folgeneri* (*Sorbus folgeneri*) C11*x lecontei* Rehd. Hort. (*communis x pyrifolia*) H5+ M6+*pashia* Hamilt. China. pashia types D9 J3 L8(round leaf) M8 N1(round leaf) O7 O9(pointed leaf)R10(pointed leaf)(round leaf), not found H11. Are two species mixed up here, perhaps pashia and pyrifolia?
one group a fortnight later than the other.*phaeocarpa* Rehd. China. H&S 1948, not found B11, could be in nursery wood**Quercus: Fagaceae (84+17=101)**

C12(PP250) D10 D11(PP131) F6 F10 H9 L8 O3 O10 Q3 R3

acutissima Carruth. (*serrata* S&Z). SAWTOOTH OAK. Japan, China. H&S 1959, O7 P3*ssp. cheni* (Nakai)Carnus. China. H&S 1949, D12+BB*aegilops* see *Q. macrolepis**afares* Pomel. CHESTNUT LEAF OAK. Algeria. H&S 1955, P1 P7*affinis* (Name not confirmed). Berry(2750m El Chico, Mexico)1987, S2+GC T6+GC*agrifolia* Nee. CALIFORNIA LIVE OAK. California. seed califomia 1959 M6 O9+GC;*alba* L. WHITE OAK. N America. H&S 1938, O6 O9+GC O10+GC; PS 1981, not found H8*aliata* Bl. ORIENTAL WHITE OAK. Japan, Korea. PS(ex seed Arnold arb) 1969, R4, not found O3*var. acuteserrata* Max. Japan, China. PS as above, not found H8*alpestris* see *faginea*.*arkansana* Sarg. ARKANSAS OAK. USA. PS(ex seed) 1976, Q3*baetica* H de Vil. Europe. (included in *faginea*?) H&S 1949, K12*bicolor* Willd. SWAMP WHITE OAK. E N America. H&S 1935&47&55, J4+BB Q8*candicans calophylla* (Name not confirmed). S3+GC*canariensis* Willd. (*mirbeckii*) ALGERIAN OAK. Spain, Africa. H&S 1938&50, D4+MM L12+MM Q8 N6

'Latifolia' H&S 1950&55, Q2 Q8

canariensis x robur Hort. K2+GC*cerris* L. TURKEY OAK. Europe, Asia minor. H&S 1955, D6 E6 O3 O8+IDS*cerris x suber* Hort. E10+BB*chrysolepis* Liebm. CANYON LIVE OAK. W N America. H&S 1948, D10

- coccinea* Meunch. SCARLET OAK. E USA. B5 C4 D4 D9 H5 I5 J4 K7 K9 K11 L4 O6,
not found G10 N7
 ‘*Splendens*’ F6 H6+CN I9 K3+CN
- crassifolia* Humb. & Bon. Mexico. T4+GC
- dentata* Thunb. DAIMYO OAK. Japan. Berry(seed Trompenburg) O10+GC
- douglasii* Hook & Arn. BLUE OAK. W N America. nursery
- ellipsoidalis* E J Hill. NORTHERN PIN OAK. USA. H&S 1965, P9 R7
- faginea* Lam. (*lusitanica* Webb., not Lam.) PORTUGESE OAK. Spain, Portugal. H&S 1965,
E11 (labelled *alpestris*)
- falcata* var. *pagodifolia* Ell. CHERRYBARK OAK. USA. FRI R 1975, O3 R4 S5 T5+GC
- felipensis* hyd Berry(Mexico)1987, S5 P1+GC
- frainetto* Ten. (*conferta*) HUNGARIAN OAK. Balkan, Italy. H&S 1955, N7 Q6+GC
- fulva* (Name not confirmed). Berry(Mexico)1987, T5+GC
- garryana* Dougl ex Hook. OREGON WHITE OAK. N America. H&S 1947, D11
- glandulifera* Bl. (*serrata* Thunb.) China, Japan, Korea. H&S 1955, L7, P3(WL *acuta*) P8,
not found I8 (Wrongly Labelled *Q. grosseserrata*)
- glauca* Thunb. Japan, Himalaya, China. H&S 1947&65, E11
- x heterophylla* Michx. (*phellos x rubra*) USA. not found N6
- x hispanica* Lam. (*cerris x suber*). Spain, Portugal, Italy.
 ‘*Ambrozyana*’ H&S 1955, Q8
 ‘*Leucombeana*’ LUCOMBE OAK H&S 1938?, 47&58 J4 N6
- x humidicolor* (Name not confirmed). PS(ex seed USA) 1969, not found S5
- ilex* L. HOLMOAK. Medit. D7+MM J4 D4+GC
 var. *ballota* (Desf.)A. DC. BALLOTA. Spain, N Africa. Berry(seed)1980, dead
 var. *fordii* (*ilex* ‘*Fastigiata*’) Hortex 1987, R5+GC
- ilicifolia* Wang. BEAR OAK. E USA. H&S 1948, M7
- imbricaria* Michx. SHINGLE OAK. E N America. H&S 1938&48, L8 P1
- incana* Roxb. see *Q.leucotricophora*.
- infectoria* Oliv. DYE OAK. Turkey, Greece. not found E10?
- ithaburensis* Dcne. (*aegilops* var. *pyrami*, *aegilops* var. *ithaburensis*) W Asia. H&S 1955, G4+BB
- kelloggii* Newb. CALIFORNIA BLACKOAK. USA. H&S 1947, D11+GC, Q1; not found N8
- x kewensis* Osborn. (*cerris x wislizenii*) KEW OAK. Hort. H&S 1948, N8
- lamellosa* Sm. Himalaya. Jellyman(Nepal)1987, R2+GC
- latifolia* see *canariensis* ‘*Latifolia*’
- leucombeana* see *hispanica* ‘*Leucombeana*’
- leucotricophora* A Camus. (*Q.incana*. Roxb., not Bartr.) China. H&S 1948, D10;
- libani* Oliv. LEBANON OAK. Syria, Asia minor. H&S 1955, P3
- lobata* Nee. VALLEY WHITE OAK. California. ex seed califonia 1959?, Q8
- x ludoviciana* Sarg. (*falcata pagodifolia x phellos*). ST LANDRY OAK. N.America. H&S 1949, E12+BB
- lyrata* Walt. OVERCUPOAK. USA. PS(seed Oktibbeha Miss. USA) O2 O3 R4
- macranthera* Fisch & Mey. CAUCASIAN OAK. Caucasus to Persia. H&S 1947?, N6, not located J4
- macrocarpa* Michx. BURR OAK. Canada, USA. H&S 1948-51, J4+BB, not found O8,
macrocarpa hyd S4
- macrolepis* Kotschy. (*aegilops* L.) VALONIA OAK. S.Balkans, Italy, W.Asia. not found O8
- marilandica* Meunch. BLACKJACK OAK. E USA. H&S 1949, E12+BB
- mexicana* H&B. Mexico. Berry1987, S4+GC
- michauxii* Nutt. SWAMP CHESTNUT OAK. N America. PS(seed Oktibbeha, Miss, USA) O3

- mongolica* Fisch. ex Turcz. MONGOLIAN OAK. Japan, China, Korea. D10+BB;
(seed Arnold Arb) O3; not found R4
- myrsinifolia* Bl. (*vibrayeana*) Japan, China. R6+BB; Berry(Hillier)1988 (NM);
- nigra* L. WATER OAK. S USA. H&S 1938-48, K4 P7
- nutalli* N.America. Hamilton 1988, L3+GC (NM)
- palustris* Muench. PIN OAK. E USA. B11 D8 D12 E8 E10 G2 H2 L12 M6 N1 N2
N3 N4 N6 O3 O4 O8 P3 P4 Q3 R7 S4
- ‘*Horizontalis*’ Q8
- petraea* (Matt)Liebl. (*sessiliflora*) SESSILE OAK. Europe, Asia minor.
 ‘*Mespilifolia*’ H&S 1938?, 55?, K3 O6 P8
 ‘*Purpurea*’ (‘*Rubicunda*’) PURPLE LEAF DURMAST OAK H&S 1955, I8
- phellos* L. WILLOW OAK. SUSA. H&S 1947, O7 (wrongly labelled)
- phillyreoides* Gray. SE USA. H&S 1955, O3; R5+GC
- pontica* K Koch. ARMENIAN OAK, PONTINE OAK. Caucasus, Armenia H&S 1955, P5+BB;
Middle Arboretum, Norway (Mt Kara Dag, 1300m Turkey), R4+GC (NM);
- pinus* L. CHESTNUT OAK. USA. Q2; Hamilton 1988, dead V5
- pubescens* Willd. (*obtusata*) DOWNY OAK. Europe, Asia minor.
H&S 1948&55, O7, removed D12; SEED 1974, P4+GC, S4 labelled *obtusata*,
- pubescens ssp. palensis* (Palassou)O.Schwarz. N Spain. H&S 1947, M6
- pyrami* Kotschy. Asian minor, Sicily. H&S 1955, Q8 O8+GC
- pyrenaica* Willd. PYRANEAN OAK. France. seed 1980, not found H8
- reticulata* H B K. Mexico, USA. R5+GC
- robur* L. ENGLISH OAK. Europe. B5 B11 B12 C4 C5 C11 D4 E6 F9 G9 G10 H8 H9 J9
 ‘*Concordia*’ H7+GC; Millichamp 1988 (NM)
 ‘*Cristata*’ H&S 1955, P7
 ‘*Fastigata*’ CYPRESS OAK H&S 1949, N8
 ‘*Fastigata Purpurea*’ H&S 1955, P4 G6+GC
 ‘*Fenessii*’ (‘*Heterophylla*’) E11+GC
 ‘*Filicifolia*’ D11+GC N6 P8,
 ‘*Hodgekinsonii*’ D12+GC E11+GC E12+GC I5 J4 J5 L9 N8
- rubra* L. RED OAK. N America. C10+MM C12+MM D4 D7 F11 J9 L5 L5 L7 L10 L11 M5 P8 Q4
- rugosa* HBK. Mexico. Berry, P1+GC T5+GC
- salicina* Bl. (*stenophylla*) Japan. H&S 1948, C10
- x schochiana* Dieck. (*palustris x phellos*). SCHOCH OAK. USA. H&S 1948, P8
- x schochiana* Dieck. (*palustris x phellos*) New Zealand cross. seedling of Hastings tree, F2; Wilsons nsy, R6;
- x schuettei* (Name not confirmed). not found S5
- semecarpifolia* Sm. (*aquifolioides*) China. H&S 1952, L8
- shumardii* Buckl. SHUMARD OAK. USA. FRI R 1975, P3 R4 S4 T5
- stellata* Wang. POST OAK. USA. H&S 1959, N7
- suber* L. CORK OAK. Europe, N Africa. Mortimor (Albert Pk) 1987, R5
- syctophila* (aff. Rosei) (Name not confirmed). Mexico. Berry 1987 T5+GC
- trojana* Webb. MACEDONIAN OAK. Greece, Asia minor. H&S 1947, D11+GC
- x turneri* Willd. (*illex x robur*). TURNER’S OAK. Hort. H&S 1948, P8
 ‘*Pseudoturneri*’ H&S 1955, Q8
- variabilis* Bl. ORIENTAL CORK OAK. China, Japan. H&S 1949, E12
- velutina* Lam. BLACK OAK. E USA. H&S 1947&51, L13+GC
- velutina* ‘*Rubrifolia*’ H2

- xalapensis* H&B. Mexico. Berry(1300m Clavagero.BG.)1987, T5 S2+GC
- Quillaja: Rosaceae (1+0=1)**
- saponaria* Mol. SOAP BARK TREE Chile. D&D 1938, E5+ I10
- Quintinia: Saxifragaceae (1+0=1)**
- acutifolia* Kirk. WESTLAND QUINTINIA New Zealand. FRI R 1979, M2(bush)
- Rapanea: Myrsinaceae**
- australis* see *Myrsine australis*
- Raphiolepis: Rosaceae (2+0=2)**
- indica* (L.)Lindl. INDIAN HAWTHORN. China. L4
- umbellata* (Thunb.)Mak. E Asia. J10
- Rhamnus: Rhamnaceae (2+0=2)**
- californica* Esch. COFFEE BERRY. USA. H&S 1948, L12+GC;
- purshiana* DC. CASACARA SAGRADA N America. D7+BB; L6+GC; P9+GC(NM)
- Rhaphithamnus: Verbenaceae (1+0=1)**
- spinousus* (Juss)Small. Chile. H&S 1957, not found H2; nursery
- Rhododendron: Ericaceae (56+188=244)**
- aberconwayi* Yunnan. O7
- arborescens* N.America. P7
- arbozeum* Kashmir, Nepal, Sikkim. M4; Jellyman(ex Nepal), Nursery; not found M7 N5
- seedling* L4 M3 M4 M7 M5
- ssp. cinnamomeum* Nepal. M4 not found J8
- 'Kermesium' (Name not confirmed). I8 O7 M8?,
- var. kingianum* Manipur. H4
- 'Kingianum zeylanicum' (Name not confirmed; *arbozeum var. kingianum* = *zeylanicum*). O8
- pale red* (Name not confirmed). M3
- 'Rubrum', (Name not confirmed). not found N5
- augustinii* (*chasmanthoides*) China. J8, dead O7
- augustinii var. chasmanthum* Yunnan, Tibet. not found O7
- aucklandii* 'Rubrum' (*griffithianum* 'Rubrum') (Name not confirmed). H4
- barbatum* Himalaya. J7
- 'Meteor' (Name not confirmed). not found P9
- campylocarpum* Nepal, Sikkim, Assam, Burma, Tibet. M4
- davidsonianum*, Szechuan, Yunnan. not found I8 Q7
- 'Exbury Pink' (Name not confirmed). not found O7
- dawsonianum* (Name not confirmed). K7
- decorum* China. H5
- delavayi* (*arbozeum ssp. delavayi*) Yunnan. not found O7
- diaprepes* Yunnan. dead P10
- diaprepes x griersonianum* F6
- discolor* China. O7, not found N5
- 'Kirki' (Name not confirmed). not found J8
- elliottii* India. check G4
- floccigerum* Yunnan. not found O7
- fortunei* China. O7 Q7, not found I7
- fortunei* 'Red Form' (Name not confirmed). not found O7
- grande* Nepal, Bhutan. not found L4
- griersonianum* Yunnan. not found H11

- griffithianum* (*aucklandii*) Nepal, Assam. M3, not found I7 G4
heliolepis Yunnan, Burma. not found J8
ilanetum (Name not confirmed) not found O7
intricatum Szechuan. not found O7
japonicum Japan. not found P10
johnstoneanum India, Assam, Manipur. O7
luteum Europe, Caucasus. not found I8
macabeanum India, Manipur, Assam. not found P7
maddenii Himalaya. F9 N5 O7
megeratum Himalaya, Burma. not found O7
nuttalii Assam, Tibet, Burma. P7+GC, not found H10
occidentale N.America. not found P10
 ‘*Graciosa*’ I9
polyandrum (Name not confirmed). Q7
ponticum Spain, Portugal, Asia minor. J9 M7, check L7
x pulcherrimum (‘*Nobleanum*’) (*arboreum x caucasicum*) L4
racemosum Yunnan, Szechuan. O7, not found P9
sanguineum *ssp. didymum* (*didymum*) Tibet. not found O7
schlippenbachii Korea, Russia, China. P9
smirnowii Asiatic Turkey. K7
sperabile *var. weiksiense* Weihsi. F8
sutchuenense China. K8
viscosum *var. rhodanthum* (Name not confirmed). P10
wallichii Nepal, Assam. O7
zeylanicum (*arboreum* *var. zeylanicum*) Ceylon. O7
 ‘*Ilam*’ (Name not confirmed). not found G4

Rhododendron hybrids

- ‘*Albatross Townhill*’ (*discolor x ‘Loderi King George’*). not found R9
‘*Aladdin*’ (*auriculatum x griersonianum*). P9
‘*Alice*’ (*griffithianum* hyd). not found J8
‘*Amy*’ (*griffithianum* hyd). not found O8
‘*Angelo*’ (*discolor x griffithianum*). Q7
‘*Angelo Solent Queen*’ (*discolor x griffithianum*). H4 O8
arboreum x decorum (Name not confirmed). not found I9
‘*Argosy*’ (*auriculatum x discolor*). not found Q7
‘*Arthur Bedford*’ (*ponticum* hyd?) Q7
‘*Arthur Gilbert*’ (Name not confirmed). not found R9
‘*Augfast*’ (*augustinii x fastigiatum*). not found O7
‘*Avalanche*’ (*calophytum x ‘Loderi’*). Q7
‘*Azrie*’ (*diaprepes x griersonianum*). F6 O7
‘*Bagshot Ruby*’ (*thomsonii* hyd). L5
‘*Barclayi Avice*’ (Name not confirmed). not found M4
‘*Barclayi Helen Fox*’ (‘*Glory of Penjerrick*’ x *thomsonii*). not found P9
‘*Barclayi Robert Fox*’ (‘*Glory of Penjerrick*’ x *thomsonii*). not found Q7
‘*Barnett Glory*’ L4
‘*Beauty of Littleworth*’ (*griffithianum* hyd). K8 L6

- 'Beauty of Tremough' (*arboreum* x *griffithianum*). not found H7 P9
 'Best White' (Name not confirmed). O7
 'Blue Peter' H4+MM J7+MM I9+MM
 'Boddaertianum' (*arboreum* x *campanulatum*). G3
 'Bow Bells' ('Corona' x *williamsianum*). not found P9
 'Britannia' ('Queen Wilhelmina' x 'Stanley Davis'). K7 O7 P7
 'Brocade' ('Vervaeiana' x *williamsianum*). not found O7
 'Bulstrode' Q6
 'Bulstrode Park' (*griffithianum* hyd x 'Sefton'). Q7
 'Calstocker' (*calophytum* x 'Dr Stocker'). not found O7
 'Carita Inchmery' (*campylocarpum* x 'Naomi'). O7
 'Chancellor' O7
 'Charles Lawson' (Name not confirmed). M6
 'Charles Smith' (Name not confirmed). seedling E5, not found O7
 'Chaste' (*campylocarpum* x 'Queen of the May'). not found R9
 'China' (*fortunei* x *wightii*). Q7
 'Christmas Cheer' (*caucasicum* hyd). M4 P10
 'Chrysomanicum' Q7
 'Colonel Rogers' (*falconeri* x *niveum*). P10
 'Cornish Cross' (*griffithianum* x *thomsonii*). not found J8
 'Cornubia' (*arboreum* 'Blood Red' x 'Shilsonii'). H4 M3
 'Corry Koster' not found L5
 'Countess of Althone' (*catawbiense* 'Grandiflora' x 'Geoffrey Millais'). E5 H6 O7, dead Q7
 'Countess of Derby' ('Cynthia' x 'Pink Pearl'). L5
 'Countess of Sefton' (*edgeworthii* x 'Multiflorum'). L4, not found O7
 'Daubuzzi' (*griffithianum* hyd). O8
 'Daydream' (*griersonianum* x 'Lady Bessborough'). not found P9
 'Dorothea' (*decorum* x *griffithianum*). P10
 'Dr A.H.Aikman' (Name not confirmed). not found H11
 'Dr A W Endtz' (*catawbiense* hyd x 'Pink Pearl'). not found O8
 'Earl of Althone' ('Queen Wilhelmina' x 'Stanley Davis'). O8
 'Eileen' M6
 'Elizabeth' (*forrestii* x *griersonianum*). P9
 'Elsa Crisp' x 'Tally Ho' F9
 'Elsbeth' (*campylocarpum* x *hardy* hyd). M4
 'Erica' ? (Name not confirmed; could be Erich, or Eri the azalea). M4
 'Ernest Gill' (*arboreum* x *fortunei*). H7
 'Eureka' (*arboreum* x *hookeri*). not found H8
 'Fastuosum Flore Plena' (*catawbiense* x *ponticum*). not found L4 P9
 'Firetail' ('Britannia' x *eriogynum*). O7 P7 Q7
 'Fittianum' (*racemosum* hyd). not found O7
 'Florence' not found O7
 'Fragrantissimum' (*edgeworthii* x *formosanum*). H11+MM H10+MM K8+MM
 'Garnet' ('Broughtonii' x *griffithianum*). M3 O7, not found P7
 'General Sir John du Cane' (*discolor* x *thomsonii*). O8
 'George Hardy' (*griffithianum* hyd). not found L4

- 'Gillii' (*arboreum* 'Blood Red' x *griffithianum*). K8
'Gills Crimson' (*griffithianum* hyd). M3, not found I9 O7
'Glory of Bagshot' (*griffithianum* hyd). M4
'Glory of Penjerrick' (*arboreum* x *griffithianum*). not found Q7
'Goethe' (*catawbiense* hyd). M4
'Gomer Waterer' (*catawbiense* hyd). not found L5
'Goody Pink' (Name not confirmed). H4
'Graham' (Name not confirmed). O7
'Grand Marquis' (Name not confirmed). not found P9
griffithianum x 'Doncaster' not found I9
griffithianum x *elliottii* not found R9
'Griedal' (*dalhousiae* x *griersonianum*). I8
'Gwynool' ? (Name not confirmed). O7
'Harisii Superbum' (*thomsonii* hyd). K8
'Helene Schiffner' (*arboreum* hyd). M6
'Horsham' (*griffithianum* hyd x 'Monsieur Thiers'). O8 P9
'Hugh Koster' ('Doncaster' hyd x 'George Hardy'). P9, not found H6
'Ibex' (*griersonianum* x *pocophorum*). O7 P9 J9
'Iam Canary' (Name not confirmed). not found N5
'Iam Kingianum' (Name not confirmed). H4
'Iam Orange' (*dichroanthum* hyd). O7
'Iam Tropic Glare' (Name not confirmed). I10
'Iverys Scarlet' (*arboreum* hyd). B6+MM K7 dead L8
'Jean' (*decorum* x *griersonianum*). not found O7
'Jenny' not found P9
'Joseph Whitworth' M6
'Kaka' (Name not confirmed). O7
'Kate White' (Name not confirmed). O7
'Kewense' (*fortunei* x *griffithianum*). check B6 B7
'Kew Pearl' not found H6
'Kluis Sensation' ('Britannia' x seedling). not found H8
'Kluis Triumph' (*griffithianum* hyd). I8
'Lady Bessborough' (*campylocarpum* var. *elatum* x *discolor*). P9 R7
'Lady Chamberlain' (*cinnabarinum* var. *roylei* x 'Royal Flush'). not found P9
'Lady Eleanor Cathcart' (*arboreum* x *maximum*). K8 O8
'Lady Galway' P7 P9 not the same, P9 correct ?
'Lady Galway' x *maddeni* P7
'Lady Grey Egerton' (*catawbiense* hyd). not found H11
'Lady Longman' not found O7
'Lady Primrose' not found L5
'Lady Roseberry' (*cinnabarinum* var. *roylei* x 'Royal Flush'). not found O7
'Large Leaf' (Name not confirmed). H4
'Laura Aberconway' ('Barclayi' x *griersonianum*). not found P9
'Lavender Girl' (*fortunei* x 'Lady Grey Egerton'). O7
'Letty Edwards' (*campylocarpum* var. *elatum* x *fortunei*). Q10
'Lindleyanum' (Name not confirmed). not found K7

- 'Lodauric' (*auriculatum* x 'Loderi'). not found I8 R9
 'Loderi Game Chick' O8
 'Loderi Irene Stead' H4 O8
 'Loderi King George' (*fortunei* x *griffithianum*). H4
 'Loderi King George' hybrid (Name not confirmed). H4?
 'Loderi Pink Diamond' (*fortunei* x *griffithianum*). O8 L5
 'Loderi Sir Joseph Hooker' (*fortunei* x *griffithianum*). P9
 'Loderi Venus' (*fortunei* x *griffithianum*). O8
 'Loderi' (*fortunei* x *griffithianum*). several seedlings M3 M4 M6 O8
 'Loders White' (*arboreum* var. *album* x *griffithianum*). not found J8
 'Louis Pasteur' ('Mrs Tritton' x 'Viscount Powerscourt'). M3
 'Lucky Strike' ('Countess of Derby' x *griersonianum*). not found R9
 'Luscombeanum' (*fortunei* x *thomsonii*). not found I7, (other note says found I7).
 'Madame de Bruin' ('Doncaster' x 'Prometheus'). K8
 'Margaret Dunn' (*discolor* x 'Fabia'). Q7
 'Mars' P6 Q7?, not found J8
 'Mary Blane' O7
 'Matador' (*griersonianum* x *strigillosum*). P9
 'Mohamet' (*dichoranthum* x 'Tally Ho'). check BW, not found O7
 'Mother of Pearl' (sport of 'Pink Pearl'). not found H7
 'Mount Everest' (*campanulatum* x *griffithianum*). not found L4
 'Mrs A. T. de la Mare' ('Halopeanum' x *fortunei* 'Mrs Charles Butler'). O8 I10
 'Mrs C. B. van Nes' ('Florence Smith' x 'Princess Juliana'). E5
 'Mrs Charles E. Pearson' (*catawbiense* 'Grandiflorum' x 'Coombe Royal'). K6
 'Mrs Charles Irwin Evans' (Name not confirmed). dead H4 check
 'Mrs G. W. Leak' ('Chevalier Felix du Savage' x 'Coombe Royal'). not found J8
 'Mrs Henry Agnew' (*arboreum* var. *album* x *grande*). not found H7
 'Mrs J. C. Williams' Q7
 'Mrs J. G. Millais' M6
 'Mrs P. D. Williams' L6
 'Mrs R. S. Holford' (*catawbiense* hyd). M6
 'Mrs W.T.Thistleton Dyer' (*fortunei* hyd). not found L4
 'Myrtifolium' (*hirsutum* x *minus*). not found O7
 'Nanette' O7
 'Naomi A M' ('Aurora' x *fortunei*). P10
 'Naomi Nautilus' ('Aurora' x *fortunei*). P7
 'Nobleanum' (*arboreum* x *caucasicum*). H4 K8
 'Norman Shaw' ('B. de Bruin' x *discolor*). not found R9
 'Parisienne' (Name not confirmed; an azalea ?) Q10
 'Penjerrick' (*campylocarpum* var. *elatum* x *griffithianum*). not found G4
 'Pilgrim' (*fortunei* x 'Gills Triumph'). O7
 'Pink Pearl' ('Broughtonii' x 'George Hardy'). O7 O8 M4, not found I8
 'Prince Camille de Rohan' (*caucasium* hyd). M6
 'Princess Alice' (*ciliatum* x *edgeworthii*). not found O7
 'Professor Hugh de Vries' ('Doncaster' x 'Pink Pearl'). M6
 'Purple Splendor' ('Hexe' x *poukhanense*). not found G4

- 'Queen Wilhelmina' (*griffithianum* hyd). P9
 'Red Admiral' (*arboreum* x *thomsonii*). O7
 'Red Glow' ('Halopeanum' x *thomsonii*). P6 Q7
 'Richard Gill' (*fortunei* x *thomsonii*). L5
 'Robert Croux' M6
 'Robert W Wallace' (*griffithianum* hyd). not found N7
 'Romany Chal' (*griersonianum* x 'Mosers Maroon'). J9
 'Romany Chal' (*griersonianum* x 'Mosers Maroon'). H4, check sundail I9
 'Rosabel' (*griersonianum* x 'Pink Shell'). H4, not found O7
 'Rosamund Millais' ('Doncaster' x 'George Hardy'). K7
 'Royal Flush' (*cinnabarinum* x *maddenii*). Q10, not found P8 Q7
 'Rubina' (*didymum* x 'Tally Ho'). Q7
 'Sappho' not found N5
 'Scarlet King' (*griersonianum* x 'Ilam Alarm'). O7
 'Seta' (*moupinense* x *spinuliferum*). P7
 'Shilsonii' (*barbatum* x *thomsonii*). not found L3
 'Shilsonii' x *arboreum* (Name not confirmed). not found L4 N5
 'Sir Ferderick Moore' (*discolor* x 'St Keveve'). not found Q7
 'Sir John Ramsden' ('Corona' x *thomsonii*). not found P9
 'Sir Robert Peel' E9+MM F9+MM G11+MM I7+MM
 'Spotlight Sappho' (Name not confirmed). G3
 'Steads Hardy Red' (Name not confirmed). O7
 'Sunrise' (*griersonianum* x *griffithianum*). P9
 'Sweet Simplicity' M6
 'Unique' (*campylocarpum* hyd). L5
 'Unknown Warrior' ('Queen Wilhelmina' x 'Stanley Davis'). H4 K7 O7
 'Vanessa Pastel' (*griersonianum* x 'Soulbut'). check, not found H10
 'van Nes Sensation' ('Sir Charles Butler' x 'White Pearl'). M3
 'Victorianum' (*dalhousiae* x *nutallii*). P7, not found P10
 'White Pearl' (*griffithianum* hyd). not found H6 F9
 'Winsome' (*griersonianum* x 'Humming Bird'). P10

Miscellaneous: *Rhododendron*

B7(CP488A), B6(CP488), C6(CP498), D5, E5(CP441), E9(CP487), F6, F9(CP466 467), G3(Ci304), G11two, H4several, H8several, I8several, I9three, J8, J9several, K7(CaP21), K8several, L4, M4, M6, M8, N7(DP88), O7several, O10, P7(DP57), P8(DP61), P9two, P10(BW16), Q7several, R7several, R9(BH6), R10one, 3 dead

Miscellaneous: *Azalea*

- 'Jenksinii' (an azalea). M4
 'J C van Tol' (Mollis azalea). K8
 'Mephistiphides' (Name not confirmed; Mephistopheles?). R7
 'Muriel Watson Jones' (Name not confirmed; the Knap Hill azalea?) R7
 'Virginalis' (Indian azalea). M4

Rhodotypos: *Rosaceae* (1+0=1)

kerrioides Beech wood

Rhus: *Anacardiaceae* (5+1=6)

I5 I9 L11 Q5

copallina L. SHINING SUMACH. N America. H&S 1947, E10+GC, not found K10

glabra L. SMOOTH SUMAC. N America.

'Laciniata' H&S 1957, B6 I9, not found P10,

lancea L.f. S Africa. P5+GC

potaninii Max. China. H&S 1938?, H5+GC

trichocarpa Miq. Japan, China. H&S 1948, not found Q5

typhina L. STAGHORN SUMACH. E N America. not found Q5, gardens?

Ribes: Saxifragaceae (4+0=4)

aureum Pursh. GOLDEN CURRANT. USA, Mexico. L6+GC

fasciculatum var. *chinense*. Maxim. Korea. Berry, L5 (NM);

x gordonianum Beaton. (*odoratum x sanguineum*) not found H11

sanguineum Pursh. W N America. FLOWERING CURRANT I9+MM

Robinia: Fabaceae - Papilionaceae (1+1=2)

pseudoacacia L. BLACK LOCUST. USA. C10+MM C11+MM, D13+MM

'Rectissima' SHIPMAST LOCUST M9+GC

Rosa: Rosaceae (1+1=2)

B6(two apricot) B6(two old), H4 thorny, K6, Pear park

eglantula Rolfe. SWEET BRIAR. China. P10

'Sanders White' H10

Rosmarinus: Lamiaceae (0+1=1)

officinalis L. COMMON ROSEMARY. Asia minor.

pale flowered O7 O9 R10

'Corsican Blue' not found O7

Salix: Salicaceae (11+2=13)

alba L. WHITE WILLOW. Europe, Asia.

'Vitellina' GOLDEN WILLOW removed G4

babylonica L. WEEPING WILLOW. E Asia. dead B11

caprea L. PUSSY WILLOW. NE Asia. H&S 1947, not found I10, L2(NM),

daphnoides Vill. VIOLET WILLOW. Europe, Himalaya. removed F4

gracilistyla Miq. Korea, Japan. H&S 1949&56, N6

magnifica Hemsl. China. Cave 1989 J8 (NM); Cave 1986 R7;

matsudana Koidz. BEIJING WILLOW. China. H&S 1947, Q8

'Tortuosa' CORKSCREW WILLOW N5

pentandra L. BAY WILLOW. Caucasus, Europe. Goudie 1934?, H5

purpurea L. PURPLE OSIER. Europe, N Africa. not found L8

repens var. *argentea* (Sm)Wimm & Grabn.

CREeping WILLOW. Europe. H&S 1956, not found Q3(dead?)

x sepulcralis Simonk. (*alba* 'Tristis' x *babylonica*) Goudie 1934?, not found C10

x seringeana Gaud. (*caprea x elaeagnos*). H&S 1957, dead H3, cutting alive in nursery.

Salvia: Lamiaceae (4+0=4)

fulgens (NNC). H11+GC

grahamii see *microphylla*.

mexicana L.Per. Mexico. I10+MM

microphylla Kunth. SCARLET SAGE. H&S 1946, I9+MM

sclarea var. *turkestanica* Mattet. Turkestan. I10+MM

Sambucus: Caprifoliaceae (2+0=2)

canadensis L. ELDERBERRY. USA. MAF1984, P5

formosana Nakai. E Asia. PS(seed Korea) not found H8

Sapium: Euphorbiaceae (2+0=2)

japonicum (S&Z)Pax. & Hoffm. China, Japan, Korea.

Berry(ex Cholipo ex Mt Sorak, Korea)1988, I5+BB (NM);

sebiferum (L.)Roxb. CHINESE TALLOWTREE. China. Mike Steven1986, R6

Sarcococca: Buxaceae (2+0=2)

hookeriana Baill. Himalaya. Jellyman/Nepal 1988, M4+AJ

humilis (Rehd & Wils).Stapf. (*hookeriana* var. *humilis*). CHRISTMAS BOX. China. check I8 L4

Sassafras: Lauraceae (1+0=1)

albidum (Nutt)Nees. (*officinale*) SASSAFRASS. USA. F10+MM

Schima: Theaceae (2+0=2)

khasiana Dyer. China. H&S 1951, R6

wallichii (DC)Korth. (*superba*) India to Taiwan. Cave(ex Jellyman) L5(NM), Q5(NM).

Schinus: Anacardiaceae (2+0=2)

molle L. PEPPER TREE. S America. H11+MM

terebinthifolius Raddi. BRAZILIAN PEPPER TREE. Chile. R10+GC

Schisandra: Schisandraceae or Magnoliaceae (2+0=2)

coccinea Michx f. WILD SASPARILLA. USA L6+GC

grandiflora var. *rubrifolia* Schneid. (*chinensis* var. *rubrifolia*, *rubrifolia*). China. H&S 1938?,

Schizophragma: Saxifragaceae (1+0=1)

integrifolium Oliv. China H11+RF

Sciadopitys: Taxodiaceae (1+0=1)

verticillata (Thunb)S&Z. Japan. Fraser 1986, J5+GC (NM)

Senecio: Asteraceae (3+0=3)

M6 ?

grandiflora Less. Mexico. H7

greyi Hook f. New Zealand. I9

huntii (NNC) H11 I9

Sequoia: Taxodiaceae (1+0=1)

sempervirens (Lamb)Endl. COAST REDWOOD. USA. Goudie 1934, B6 B7 C7 C12 D5 D6

J4 J5 J6 J9 K4 R7

Sequoiadendron: Taxodiaceae (1+0=1)

giganteum (Lindl)Bucholz. WELLINGTONIA. USA. B6+MM, not found C5

Sesbania: Fabaceae - Papilionaceae (1+0=1)

sp M4

Sinojackia: Styraceae (2+0=2)

I8

rehderiana Hu. China. H&S 1951, I8

xylocarpa Hu. China. H&S 1951, I8 Q5+GC

Smilax: Liliaceae (1+0=1)

menispermoides (NNC) Jellyman 1988, M4+AJ

Solanum: Solanaceae (1+0=1)

rantonnetii Carr. BLUE POTATO SHRUB. Argentina. H11+MM

Sollya: Pittosporaceae (1+0=1)

fusiformis Payer. (*heterophylla*) Australia. M4+RF

Sophora: Fabaceae - Papilionaceae (7+0=7)

J7 P6 P10 Q10 R8 S7

japonica L. JAPANESE PAGODA TREE. China, Korea. G11+GC;

Puha(ex Frimley Pk)1988, C11+GC, H5+GC (NM);

microphylla Ait. KOWHAI. NZ. S7 R8 P6,
f. longicarinata (S.treadwellii). Q8(NM); Platt(ex Cobb valley) J7(NM);
 Stephens Island form Hatch 1986 H10(NM).

microphylla x prostrata (NNC) not found H8

prostrata Hatch 1986, K5(NM)

tetraptera Ait. KOWHAI. NZ. P10; FRII1979, L1(NM), M1(NM)

X Sorbaria: Rosaceae (3+0=3)

aitchisonii Hemsl. (*Spiraea aitchisonii*) China, Kashmir. H&S 1937?, not found O7

kirilowii Max. China. Pukeiti 1988, L5+GC (NM)

tomentosa (Lindl)Rehd. (*Spiraea lindleyana*) Himalaya. Appleton ex Kashmir 1988, L4+GC, L5+GC

X Sorbopyrus: Rosaceae (2+0=2)

auricularis (Knoop)Schneid. H&S 1948, D12 (*Pyrus auricularis*)

alnifolia (S&Z)K Koch. China, Japan. H&S 1949, D12 (*Pyrus alnifolia*)

Sorbus: Rosaceae (38+11=49)

C12 L7 L8 N4 O3 P3 P9six P10 R5 Q5 S5two

americana arranensis (Name not confirmed). S5

anglica Hedl. England, Ireland. H&S 1957, P3

aria (L.)Crantz. WHITEBEAM, Europe. M3, not found D12 Q5

'Chrysophylla' GOLDEN WHITEBEAM H&S 1957, Q5 O3, not found F11

'Lutescens' GOLDEN WHITEBEAM H&S 1957, P5 1980 P2 P3, not found F11

'Majestica' ('Decaisneana') H&S 1948, not found P10

'Pendula' H&S 1957, not found Q5

aucuparia L. MOUNTAIN ASH, ROWAN. Europe, Asia m. C11 D11

'Asplenifolia' FERN LEAF ROWAN H&S 1957, N1, not found D12

'Dirkenii' GOLDEN ROWAN H&S 1957, not found O1

'Edulis' ('Moravica') EDIBLE FRUITED ROWAN H&S 1957, R3

'Fastigiata' COLUMNAR ROWAN H&S 1957, O2

'Xanthocarpa' ('Fructo Lutea') YELLOW FRUITED ROWAN H&S 1949&57, D12
 not found O1

bristoliensis Wilmott. BRISTOL WHITEBEAM. England. H&S 1957, not found R5

caloneura (Stapf.)Rehd. China. H&S 1957, Q5

commixta Hedl. Korea, Japan. H&S 1948, not found P9 G4

var. rufoferruginea Schneid. Japan. H&S 1957, not found O2

cuspidata (Spach)Hedland. (*vestita*) Nepal. Jellyman(8000ft Ankukhola Nepal,AJ36) L5 (NM)

decora (Sarg)Schneid. N America. H&S 1957, not found Q5

discolor Hedl. China. H&S 1957, not found R3

domestica L. Europe, Asia minor, Africa. H8

epidendron Hand-Maz. China. H&S 1957, not found S4

esserteauana Koehne. CHINESE ROWAN. China.

'Flava' H&S 1957, dead N1

glabrata (aucuparia var. glabrata) H&S 1957, Q5

gracilis (S&Z)K Koch. Japan. H&S 1957, not found Q5

hupehensis Schneid. China. HUPEH ROWAN H&S 1952-57, G9, not found S3

var. aperta Schneid. China. H&S 1957, not found S3

hybrida (L.)L. Europe, Finland, Norway. S3

'Gibbsii' H&S 1957, not found Q4

insignis (Hook f.)Hedl. Himalaya. H&S 1957, not found O2

- intermedia* (Ehrh)Pers. SWEDISH WHITEBEAM. Scandinavia. H&S 1957, not found H3 O2 Q5
koehneana Schneid. WHITE FRUITED ROWAN. China.
 H&S 1958, not found O2; Appleton 1988, K10+GC (NM);
latifolia (Lam)Pers. SERVICE TREE OF FOUNTAINBLEAU. Europe. H&S 1957, not found Q5
x magnifica (Name not confirmed). H&S 1951, not found I8
moravica see *S.aucuparia* 'Edulis'. R3
matsumurana (Mak)Koehne. Japan. H&S 1958, N3
megalocarpa Rehd. China. H&S 1957, dead? R5
meliosmifolia Rehd. China. H&S 1958, Q5
mougeotii Soy-Willem. & Godr. France, Austria. H&S 1957, not found Q5
pinnatifida (Ehrh)Bean. (*S x thuringaica*) (*aria x aucuparia*). K11
pluripinnata (Schneid.)Koehne. China. O3
pohuashanensis (Hance)Hedl. China. H&S 1957, N3
randaiensis (Hayata)Koidz. Burma, China. H&S 1957, not found P10
reducta Diels. Burma, China. dead H8, Q5 stock
sambucifolia (Cham & Schlect.)Roem. Japan. H&S 1957, not found O2
sargentiana Koehne. China. H&S 1957, not found P9
scalaris Koehne. China. H&S 1957, not found O2 P3
subcuneata Britain. H&S 1957, not found Q5
x thuringiaca (Ilse)Fritsch. Germany. H&S 1949&57, K11(*pinnatifida*), N3, not found P10 S3 S4 S5
vilmorinii Schneid. China. H&S 1948&57, not found L6 P3
wilsoniana Schneid. China. H&S 1948&57, not found B11 P4

Spartium: Fabaceae - Papilionaceae (1+0=1)

junceum L. Mediterranean. F9

Spiraea: Rosaceae (9+1=10)

C6 C7 E9 I10 J9 L6 O7 O8 Q4

sp. Welch 1988, L5 (NM)

x arguta Zab. (*multiflora x thunbergii*). Hort. H&S 1934, not found H11

x bumalda Burvn. (*albiflora x japonica*) Hort.

'Anthony Waterer' I9

canariensis (Name not confirmed). Q4

chartacea (Name not confirmed). L5+GC, Pukeiti 1988 (NM);

x gieseleriana Zab. (*cana x hypericifolia*) L5, R6 (NM),

nipponica Max. Japan. L6

prunifolia S&Z. BRIDAL WREATH SPIRAEA. Japan, China not found O7

thunbergii Sieb. China, Japan. not found D9 I10 O7

veitchii Hemsl. China. D&D 1935?, Q4

Spondias: Anacardiaceae (1+0=1)

axillaris Roxb. HOG PLUM. USA. Jellyman(Nepal)1988, M3+AJ

Stachyurus: Hamamelidaceae (3+1=4)

chinensis Franch. China. H&S 1937, H5

'Magpie' VARIEGATED SPIKETAIL H&S 1937, G4

himalaicus Hook f. & Thoms. ex Benth. China. Jellyman 1988, M4+GC

praecox S&Z. EARLY SPIKETAIL. Japan. K6, not found O7

Staphylea: Staphyleaceae (5+1=6)

bumalda DC. Japan. Massey 1948?, I2+GC

colchica Stev. Caucasus. H6+CN

- x elegans* Zab. (*colchica x pinnata*) H&S 1955, H4 J2+CN
 'Hessei' R3
holocarpa Hemsl. CHINESE BLADDER NUT. China. H&S 1938, I4, not found N5
 var. *rosea* Rehd. & Wils. PINK FLOWERED BLADDER NUT. I8, not found H6
- Stauntonia: Lardizabalaceae (1+0=1)**
hexaphylla Decne. STAUNTON VINE. Japan, Korea. D&D 1945, not found H8; Nichols 1989, G7(NM)
- Stephanandra: Rosaceae (1+0=1)**
incisa (Thunb.)Zab. Japan, Korea. H5+GC
- Stranvaesia: Rosaceae (4+0=4)**
dauidiana Decne. China. C9+BB E5
 var. *salicifolia* (Hutchins)Rehd. China. D&D 19347, not found H5 I7
 var. *undulata* (Decne)Rehd. & Wils. China. Wilson 1937, I8
nittakayamensis (Name not confirmed). PS(seed Taiwan) K9 (NM)
- Strobilanthes: Acanthaceae (1+0=1)**
anisophyllus T Anderson. GOLDFUSSIA. India. H11+GC
- Strophanthes: Apocynaceae (1+0=1)**
speciosa (Ward & Harv.)Reber. S Africa. S5+GC
- Stuartia: Theaceae (7+0=7)**
 G5
malacodendron L. USA. M4+GC Freeman 1988
monadelphpha S&Z. Japan. E10+BB K6+BB, not found I7
pseudocamellia Max. Japan. I7 M5, not located G5
 var. *koreana* (Nakai)Sealy. Korea. H&S 1938, G5+BB, not found Q5
pteropetiolata (*Hartia sinensis*) Yunnan. H&S 1949, not found K11
serrata Max. Japan. H&S 1956, Q4
sinensis Rehd. & Wils. (*gemmata*) China. D&D 1935, D6 I5 J8
- Styrax: Styracaceae (4+0=4)**
hemsleyana Diels. China. H&S 1957, Q5; Appleton ex EWH 1988, J10+GC (NM);
japonica S&Z. China, Japan. H7 H9 I6 I7 L5
 var. *fargesii* H&S 1957, P4
obassia S&Z. Japan. D6 G5 H5 K6 L6 L7
- Sycopsis: Hamamelidaceae (1+0=1)**
sinensis Oliv. China. Stevens 1935, F10+MM I7+MM I8+MM
- Symplocos: Symplocaceae (2+0=2)**
paniculata (Thunb)Miq. (*crataegoides*) SAPPHERE BERRY. Japan, China. H&S 1949&54,
 K11, not found H11
theifolia D Don. Himalaya. Jellyman(AJ10) 1988, M4+AJ
- Syringa: Oleaceae (9+36=45)**
x hyacinthiflora (Lemoine)Rehd. (*oblata x vulgaris*) Hort. dead R10
 'Buffon' (pink) R10
 'Ester Staley' not found P10 (single pink)
 'Lamartine' (lilac pink) not found G3
josikaea type HUNAGRIAN LILAC. Hungary. R10
microphylla Diels. China. H11 I9, not found L3
x nanceiana McKelvy. (*henryi x sweginzowii*) Hort(France)
 'Floreal' H&S 1956, not found P10, (whitish, late)
pinnatifolia Hemsl. China. not found P9

reticulata (Bl)Hara. JAPANESE TREE LILAC. Japan. R6 S5

villosa x josikaea P9

villosa Vahl. LATE LILAC. China. I7, not found N7

vulgaris L. LILAC. Europe. C7 C10 E6 I5 O9 P9 P10 R10two

‘**Belle de Nancy**’ H&S 1965, not found S9

‘**Candeur**’ (Name not confirmed). not found S9

‘**Edith Cavell**’ R10 (large white)

‘**Favourite**’ (Name not confirmed). not found H8

‘**Florence**’ not found H8

‘**Glory of Horstenstein**’ not found S9

‘**Henry Rounas**’ (Name not confirmed). P9

‘**Hugo Koster**’ not found S9 (lilac)

‘**Lavaliensis**’ not found S9

‘**Massena**’ H&S 1965, not found S9 (large deep prple)

‘**Maud Notcutt**’ dead R10

‘**Miranda**’ H&S 1956, not found P10, (violet, late)

‘**Missimo**’ (Name not confirmed). H&S 1965, not found S9

‘**Mme Francisque Morel**’ H&S 1965, not found S9

‘**Mme Lemoine**’ R10 (double white)

‘**Night**’ (Name not confirmed). not found D10

‘**Pale Hyacinth**’ (Name not confirmed). not found P10

‘**Peggy**’ (Name not confirmed). not found D9

‘**Pink Spray**’ (Name not confirmed). not found S9

‘**President Roosevelt**’ (Name not confirmed). not found D10

‘**Princesse Clementine**’ not found S9 (double yellow/white)

‘**Priscilla**’ (Name not confirmed). not found D10

‘**Romeo**’ not found D10, (red purple, late)

‘**Royalty**’ not found D10, (blue lilac, late)

‘**Sarah Sanos**’ (Name not confirmed). not found D10

‘**Sensation**’ H&S 1956?, not found S9 (red, silver edge)

‘**Souvenir de Alice Harding**’ R10

‘**Victor Lemoine**’ not found D9 (lilac double)

‘**Violetta**’ not found D10 (dark violet double)

‘**Volcan**’ not found S9 (deep red purple)

‘**Waldock Rousseau**’ (Name not confirmed). not found H8 (soft lilac, white centre)

yunnanensis Franch. YUNNAN LILAC. China. Slocock 1937&38, D9+GC K7+GC; Toptrees, L4 (NM)

‘**Rosea**’ H&S 1958&64?, P9, not found R9

Syzygium: Myrtaceae (1+0=1)

australis BRUSH CHERRY. Australia. G11+MM

Taiwania: Taxodiaceae (1+0=1)

cryptomerioides Hayata. Taiwan. H&S 1947&55, C11 D11 I3,

Talauma: Magnoliaceae (1+0=1)

hodgsonii Hook & Thoms. Himalaya. H&S 1962, N4

Tamarix: Tamaricaceae (1+0=1)

juniperina Bge. (*chinensis*) China. D9

Taxodium: Taxodiaceae (1+0=1)

distichum (L.) Rich. SWAMP CYPRESS. USA. B6 G3 G4 H3 H4 I2 I3 J2 O2
N6 N7 P5 P8 S7 Q3 Q4 Q5 Q7

Taxus: Taxaceae (3+6=9)

J9 L6 M7

baccata L. COMMON YEW. Europe, Asia minor. C6 D6 D7 E6 L7 O6, not found K7

‘*Erecta*’ FULHAM YEW D7 M7, not found K7

‘*Erecta Aurea*’ GOLDEN YEW M7

‘*Fastigiata*’ IRISH YEW D7, not found N7

‘*Fastigiata Aurea*’ J9

‘*Fastigiata Hibernica Aurea*’ L6

chinensis Rehd. CHINESE YEW. China, Taiwan. H&S 1955, P4

cuspidata S&Z. JAPANESE YEW. Japan. J7 L7

x media Rehd. (*baccata x cuspidata*). Hort.

‘*Hicksii*’ H&S 1949, I8

Tecomanthe: Bignoniaceae (1+0=1)

speciosa W Oliv. New Zealand. Overbye 1985, N4

Ternstroemia: Theaceae (1+0=1)

gymnanthera (Wight & Arn) T Sprague. (*japonica*) India, Japan. H&S 1947, not found;
Denes 1986, L5+GC

Tetracentron: Tetracentraceae (1+0=1)

sinense Oliv. China. Cave(Spicer, Jury)1988, N4+GC

Teucrium: Lamiaceae (1+0=1)

fruticans L. GERMANDER. Europe, Africa. P10

Thea: Theaceae

sinensis see *Camellia sinensis* H11; Cave 1988, L5(NM)

Thuja: Cupressaceae (3+9=12)

upright F4 R7

koraiensis Nakai. KOREAN ARBORVITAE. Korea. H&S 1949, E9+GC

occidentalis L. AMERICAN ARBORVITAE. E N America.

‘*Ellwangeriana*’ check M7

‘*Erecta*’ M7

‘*Erecta Compacta Aurea*’ ? L6

‘*Little Gem*’ M6

‘*Pyramidalis Compacta*’ O8 check

‘*Rheingold*’ not found M7 O7

orientalis L. CHINESE ARBORVITAE. China, Japan. D10, (labelled *Biota orientalis*)

‘*Compacta Aurea*’ not found L7,

plicata J Donn ex D Don. WESTERN RED CEDAR. N America. D6 I7, not found J5

‘*Aurea*’ not found I8

‘*Zebrina*’ H&S 1949, G4 N8 O10 Q7, not found I8

Thujopsis: Cupressaceae (1+2=3)

dolobrata (L f.) Sieb & Zucc. HIBA ARBORVITAE. Japan. I7, not found N7

‘*Nana*’ M7

‘*Variegata*’ I7

Thunbergia: Acanthaceae (1+0=1)

sp H11+GC

Tibouchina: Melastomataceae (1+1=2)

semidecandra S.America. H11

urvilleana (DC)Cogn. Brazil.

‘*Edwardsii*’ H11

Tilia: Tiliaceae (15+1=16)

americana L. BASSWOOD. N America. H&S 1949&57, D10+GC McKean (NM); not found C12 I2;

cordata Mill. LITTLELEAF LIME. Europe. C6+MM G10+MM

x euchlora K Koch. CRIMEAN LIME. Crimea. H&S, I3 J2

x europaea L. (*cordata x platyphylla*). COMMON LIME. Hort. I11 J2, not found C5

henryana Szysz. China. J2; Gallen(Toptrees, Hillier)1988, K10+GC (NM)

kiusiana Makino & Shiras. Japan. H&S 1955&59, J2 Q5

maximowicziana Shiras. Japan. H&S 1948, B12

x moltkei Spath. (*americana x petiolaris*). H&S 1951, D12+IDS

mongolica Max. China. D11+MM (WL *moltkei*)

neglecta Spach. N America. D11 J2

oliveri Szysz. China. H&S 1949&57, D11 J2

paucicostata Max. China. H&S 1957, J2

‘*Petiolaris*’ DC. (*americana* ‘*Pendula*’) Europe. WEEPING SILVER LIME D&D 1935, B12+IDS

platyphyllos Scop. BROADLEAF LIME. Europe. D&D 1935, C6+MM

‘*Laciniata*’ (‘*Asplenifolia*’) CUT LEAF LIME H&S 1951, D11+MM

tomentosa Moench. SILVER LIME. Europe. D&D1935, J2 L3 B12

Toona: Meliaceae (1+0=1)

sinensis (Endl)M.Roemer. China. CHINESE CEDAR. L6+MM

Torreya: Taxaceae (2+0=2)

californica Torr. CALIFORNIA NUTMEG. USA. H&S 1948, G3

nucifera S&Z. Japan. H&S 1949, J9

Trachelospermum: Apocynaceae (2+0=2)

asiaticum (S&Z)Nakai. (*divaricatum*) Korea, Japan. H&S 1949, I8

jasminoides (Lindl)Lem. China. D&D 1938, H11; Nichols 1988, L5+GC

Trachycarpus: Aracaceae (1+0=1)

fortunei Wendl. CHUSAN PALM. China, Japan. H9, G9

Tricuspidaria: Tiliaceae

see *Crinodendron*

Tripterygium: Celastraceae (2+0=2)

regelii Sprague & Takeda. (*wilfordii* sens. Reg, not Hook f.) Japan, Korea. Cave 1989, nsy.

wilfordii Hook f. (*forrestii* Loes.) China, Burma, Formosa. H&S 1949, P7+GC

Tristania: Myrtaceae (1+0=1)

laurina (Sm.)R.Br. WATER GUM. Australia. N5 S10; Walker 1987 K8

Trochodendron: Trochodendraceae (1+0=1)

aralioides S&Z. Korea. Gallen 1988, L5+GC (NM);

Tsuga: Pinaceae (4+1=5)

canadensis L. EASTERN HEMLOCK. N America. H&S 1948, B12+E

‘*Pendula*’ H10

chinensis (Franch)Pritz. CHINESE HEMLOCK. China. Gordon1988, S8+GC (NM)

dumosa (D Don)Eichler. HIMALAYAN HEMLOCK. Himalaya. Gordon 1988, Q3+GC

heterophylla (Raf)Sarg. WESTERN HEMLOCK. W N America. H&S 1948, O6, P3+GC, not found B12

Ugni: Myrtaceae (1+0=1)

molinae Turz. (*Myrtus ugni*). CHILEAN GUAVA. Chile, Bolivia. Heritage1986, H11+GC

Ubnus: Ubnaceae (12+6=18)

B5 B6 C4 C5 C6 C6 D4 D5 D6 G9 O4

americana L. WHITE ELM. E N America. Horton 1919 D10+GC; not found B5 J13

carpinifolia Gleditsch. SMOOTH LEAF ELM. Europe, D6 E4 E9 F6

'**Variegata**' C12+MM D5 E10+MM I2+MM

dodens (Name not confirmed). P2

elegantissima Horwood. (*glabra x plotii*) Hort.

'**Jacqueline Hillier**' H11+GC

glabra Huds. WYCHELM. Europe. K6, not found H5 P4

'**Camperdownii**' CAMPERDOWN ELM not found D5.

'**Pendula**' WEEPING WYCHELM E9 C6

x hollandica Mill. (*carpinifolia x glabra*). Hort. DUTCH ELM not found D4

loebens (Name not confirmed). P2

parviflora Jacq. CHINESE ELM. China. S5

planthy (Name not confirmed). P2

procera Salisb. ENGLISH ELM. Europe. not found D7

'**Argenteovariegata**' VAREGATED ENGLISH ELM. not found H6

'**Louis van Houtte**' GOLDEN ELM not found H7

'**Purpurea**' (NNC) PURPLE LEAF ELM E5+GC, not found B4 B6 C4 G10

rubra Meuhl. SLIPPERY ELM. USA. C10+GC; not found B5 H13

'**Sarniensis**' (Loud)Melv. (*U. minor* '**Sarniensis**') WHEATLEY ELM. France. H5

Umbellularia: Lauraceae (1+0=1)

californica (Hook & Arn.)Nutt. CALIFORNIA LAUREL. USA. H&S 1947, I10 J4 K2

Vaccinium: Ericaceae (1+0=1)

corymbosum L. SWAMP BLUEBERRY. USA. L6

Viburnum: Caprifoliaceae (19+3=22)

I7 I8 I10 J7 M5

bitchiuense Mak. Japan. Webb 1935, G5

x bodnantense Aberconway. (*farreri x grandiflorum*) H&S 1949, not found I8

x burkwoodii Burk. (*carlesii x utile*) D5 K6 I7 I10 N4

carlesii Hemsl. Korea. D&D 1946, I7 I8 Q4,

dentatum L. (*pubescens*. Pursh). ARROWOOD. USA. Hamilton 1988, J7+GC (NM);

ellipticum Hook. USA. I7

erubescens var. *gracilipes* Rehd. China. I8

foetens Dcne. E Asia. H&S 1949, not found I8

fragrans Bunge. (*farreri*. Stearn) China. O9 Q9

japonicum Miq. Japan, Korea. E6+MM

lobophyllum Graebn. China. not found L6

macrocephalum Fort. CHINESE SNOWBALL. China. Slocock 1938, G5 I10

opulus L. GUELDERROSE. Europe. C9, not found I8

plicatum Thunb. JAPANESE SNOWBALL. E Asia. D&D 1934, not found C7 I8

'**Lanarth**' H&S 1950?, not found I8

'**Mariesii**' not found I8

f. tomentosum (Thunb)Rehd. DOUBLE FILE VIBURNUM. F5+MM H5+MM

propinquum Hemsl. E Asia. 1938?, E10+BB

prunifolium L. SHEEPBERRY. USA. J7+GC Hamilton 1988 (NM);

rhytidophyllum Hemsl. China. E5+MM J10+MM L6+MM

‘Roseum’ H&S 1948, not found I8

sieboldii Miq. Japan. I8

Virgilia: Fabaceae - Papilionaceae (1+0=1)

capensis Lam. S Africa. not found P9 P10

Vitex: Verbenaceae (1+0=1)

agnus-castus L. CHASTE TREE. Europe, Asia minor. H&S 1947, E10+MM I7+GC, not found G10

Vitis: Vitaceae (5+1=6)

M4

amurensis Rupr. AMUR GRAPE. Korea, Japan, China. H&S 1947, H8 H11

betulifolia Diels & Gilg. China. I9

coignetiae Pull. Japan, Korea. F6+GC

‘Pulchra’ Japan, China. H&S 1946. not found H11

riparia Michx. RIVER GRAPE. N America. Nichols 1988, I2+GC

vinifera L. WINE GRAPE. Caucasus.

‘Ailcanthe Bouchet’ I9

Wattakaka: Asclepiadaceae (1+0=1)

sinensis Stapf. China. H&S 1948, I8+GC

Weigelia: Caprifoliaceae (2+4=6)

florida (Bge)A.DC. China, Korea. H&S 1955, H3

‘Variegata’ H3, not found I8

‘Grace Warden’ H&S 1946?, not found H8

hortensis (S&Z)C Mey. Japan.

‘Nivea’ not found H3

‘Newport Red’ Q4

‘Styriaca’ H&S 1955, not found G3

Widdringtonia: Cupressaceae (2+0=2)

juniperoides (L.)Endl. (*Callitris arborea*) CLANWILLIAM CEDAR. S Africa. not found H7

whytei Rendle. (*W.cupressoides*) M’LANJI CEDAR. S Africa. D9+GC

Wisteria: Fabaceae - Papilionaceae (4+2=6)

floribunda (Willd)DC. Japan. E9+GC K6+GC

‘Alba’ J6+GC

f.macrobotrys E9+GC

‘Rosea’ F8+GC

macrostachys Nutt. USA. R5+GC

sinensis (Sims)Sweet. CHINESE WISTERIA. China. M4

Zanthoxylum: Rutaceae (4+0=4)

E12

americanum Mill. TOOTHACHE TREE. EN America. H&S 1948, not found E11

oxyphyllum Edgew. Nepal. Gallen(Hudson)1988, M3+GC;

planispinum E.Asia. H&S 1948, not found E11

simulans Hance. (*bungei*) China. H&S 1948&50, M7 S5, not found E11

Zelkova: Ulmaceae (3+0=3)

cretica Spach. Crete. H&S 1958, R10; Cave(EWH)1988, H7+GC (NM);

davidii Bean. (*Hemiptelea davidii*). China, Korea. H&S 1949, not found H2

serrata (Thunb.)Mak. (*acuminata*) KEYAKI. Japan. H&S 1955, D&D 1940, L4 N2,

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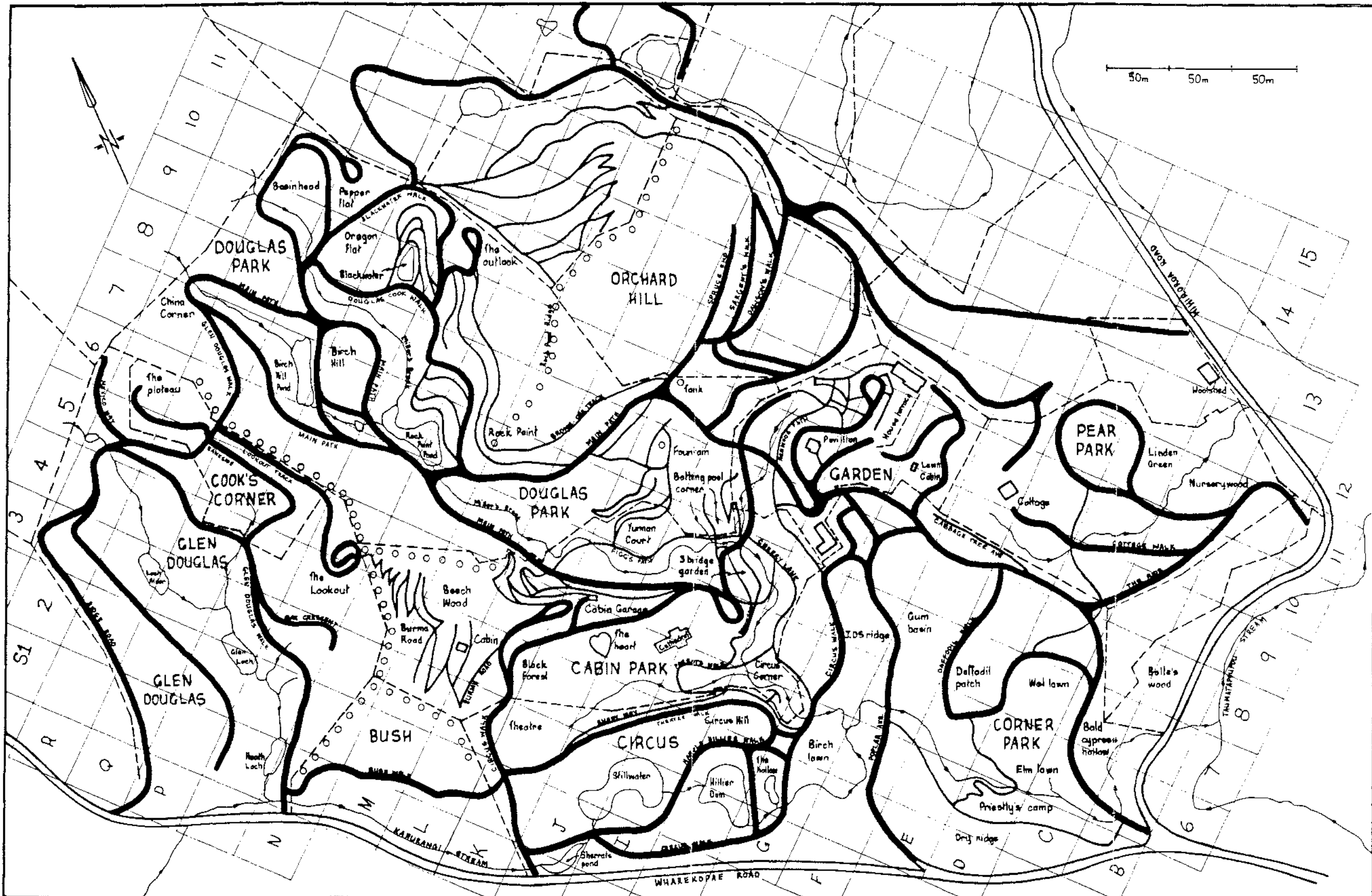
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**Grid map of the arboretum. Maps of Pear Park,
Orchard Hill and Basinhead**



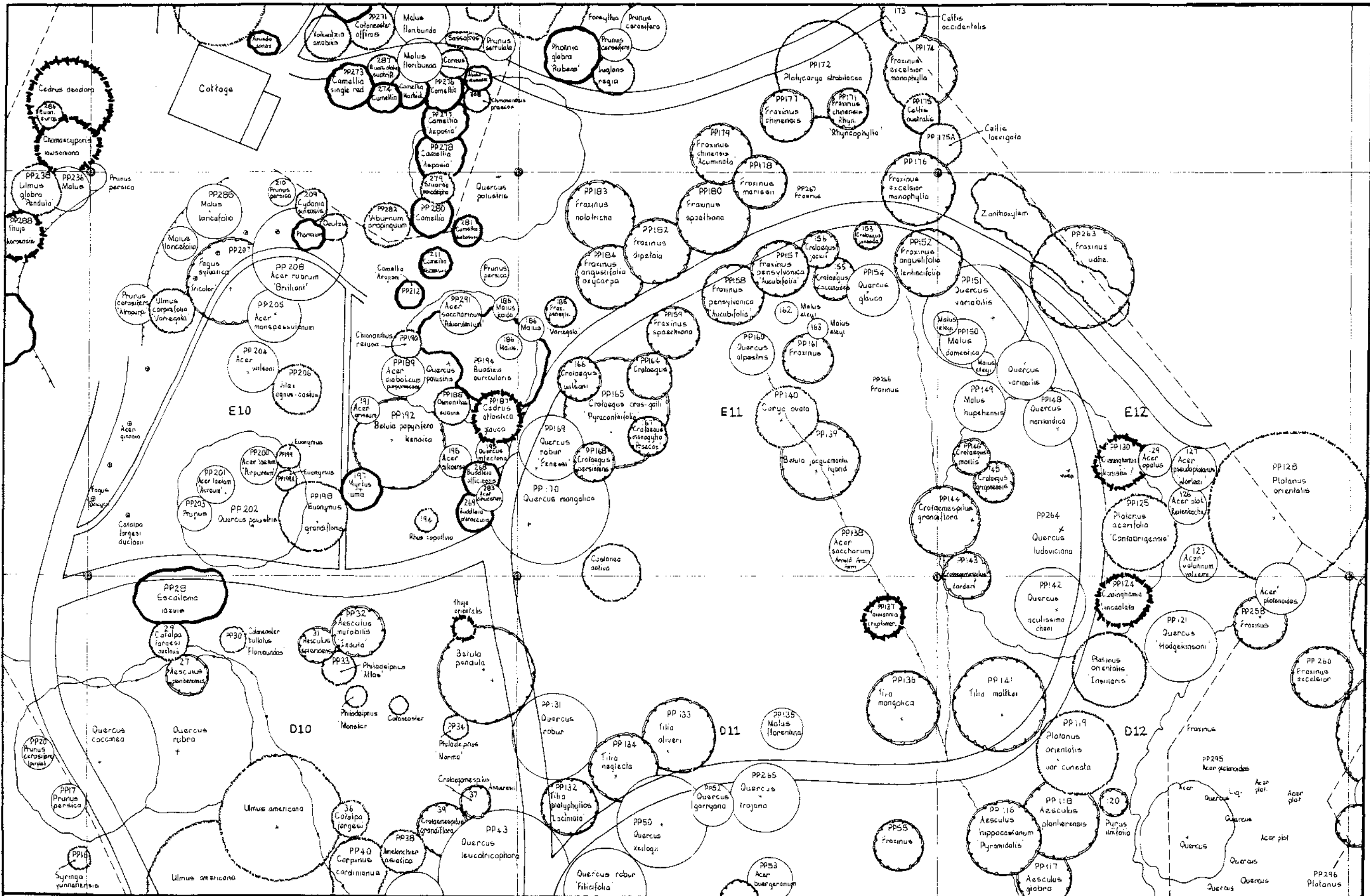
Acer laetum 'Aureum', Pear Park, April 1994.



Plan showing arboretum only. Adapted from aerial photographs and Clapperton (1987).

EASTWOODHILL ARBORETUM

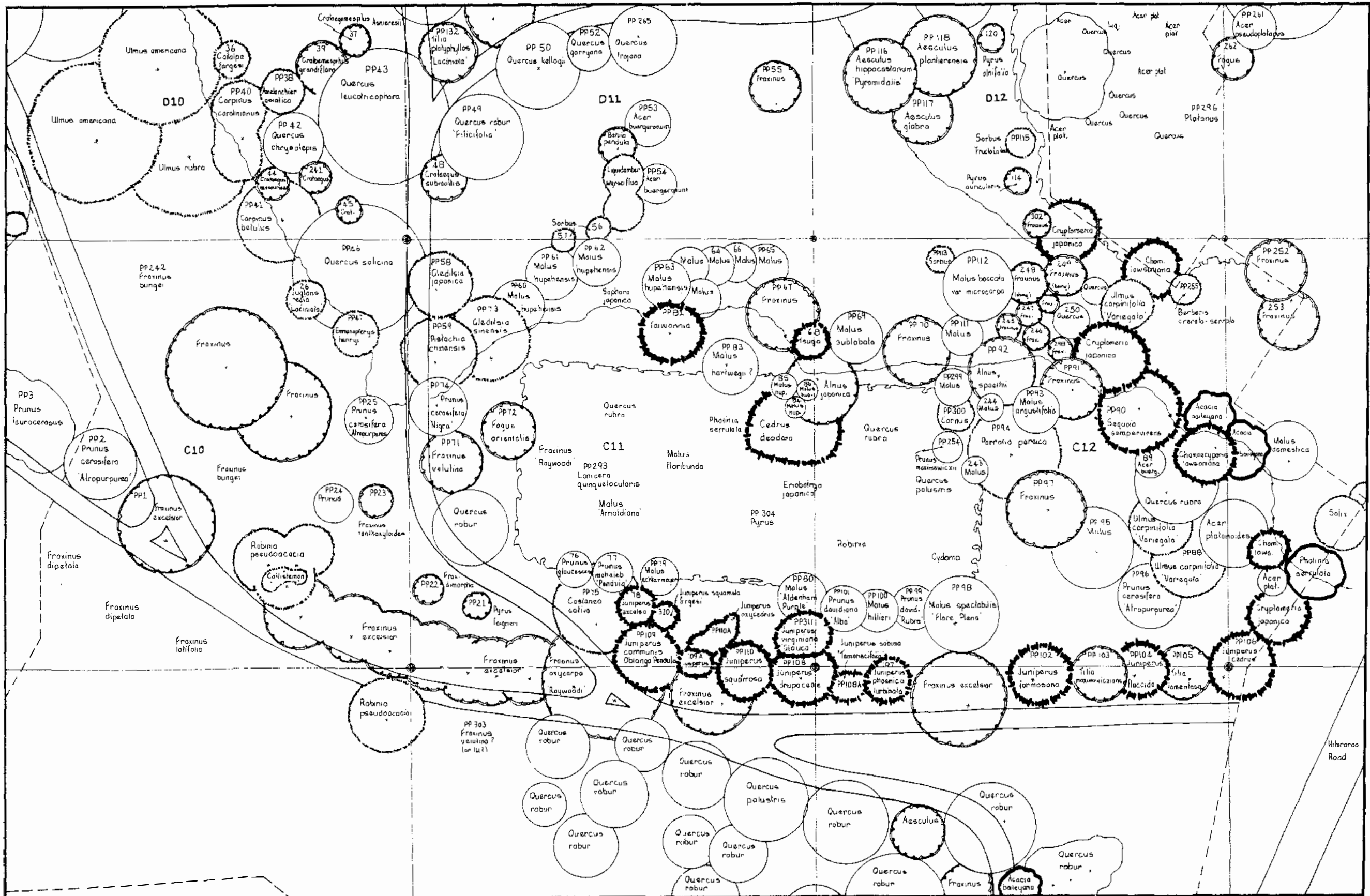
Arboretum		SHEET 1	
Streams	Fences	Paths	Tracks
DRAWN: M. MacLellan	CHECKED:	SCALE: 1:2000 (on A2)	SERIES OF: 1
TRACED: M. MacLellan	DATE: May 1996		



Upper Pear Park; showing the Coltage, The Ashes, and Linden Green in the configuration at 1988, before the workshops.

EASTWOODHILL ARBORETUM

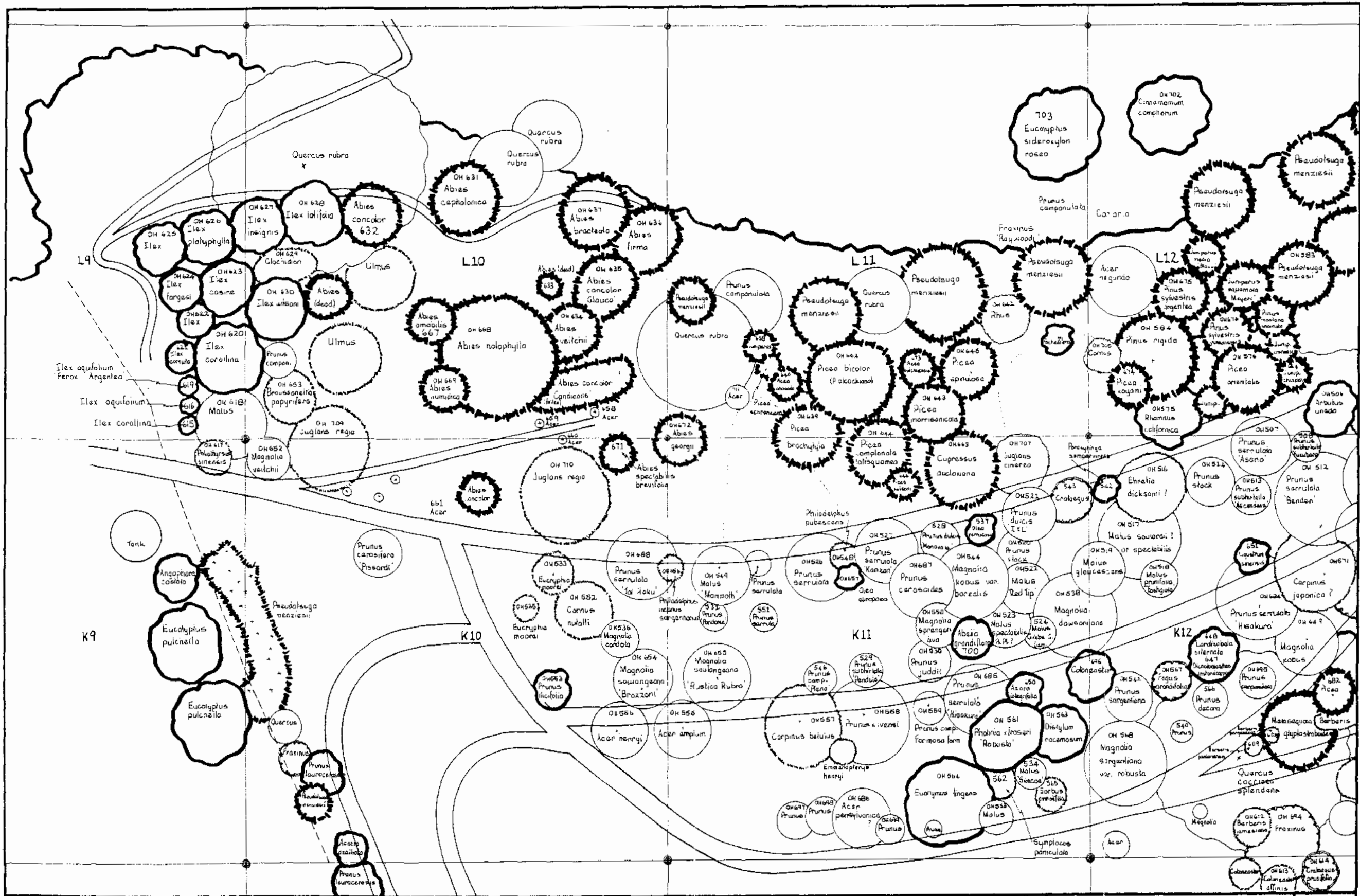
Pear Park - Upper		SHEET
— Streams — Fences — Paths — Grid		2
DRAWN M. MacCoy	CHECKED	SERIES OF
TRACES M. MacCoy	DATE May 1996	REF
SCALE 1:200 (m as)		
Grid 50 x 50 m		



Lower Pear Park; showing Collage Course, lower Linden Green, Nurserywood, and the Junipers in the configuration at 1988, before the workshops.

EASTWOODHILL ARBORETUM

Pear Park - Lower		SHEET 3	
— Streams — Fences — Paths — Grid			
DRAWN M. Mackay	CHECKED	SCALE 1:200 (in A1)	SERIES OF
TRACED M. Mackay	DATE May 1996	Grid 50 x 50 m	REF



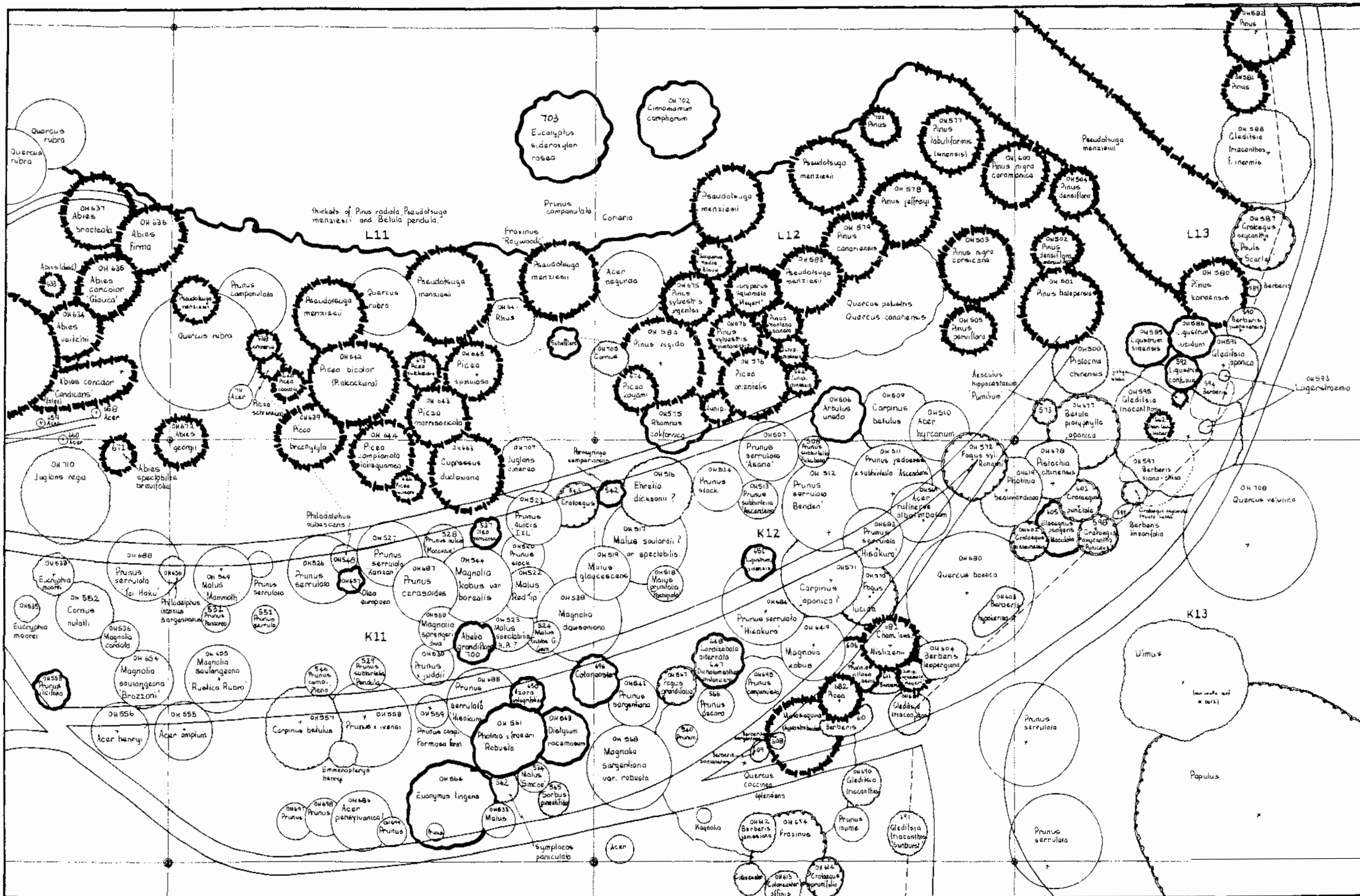
Orchard Hill (near end) showing the configuration that existed in 1989, before the workshops.

EASTWOODHILL ARBORETUM

Orchard Hill - Near end

SHEET 4

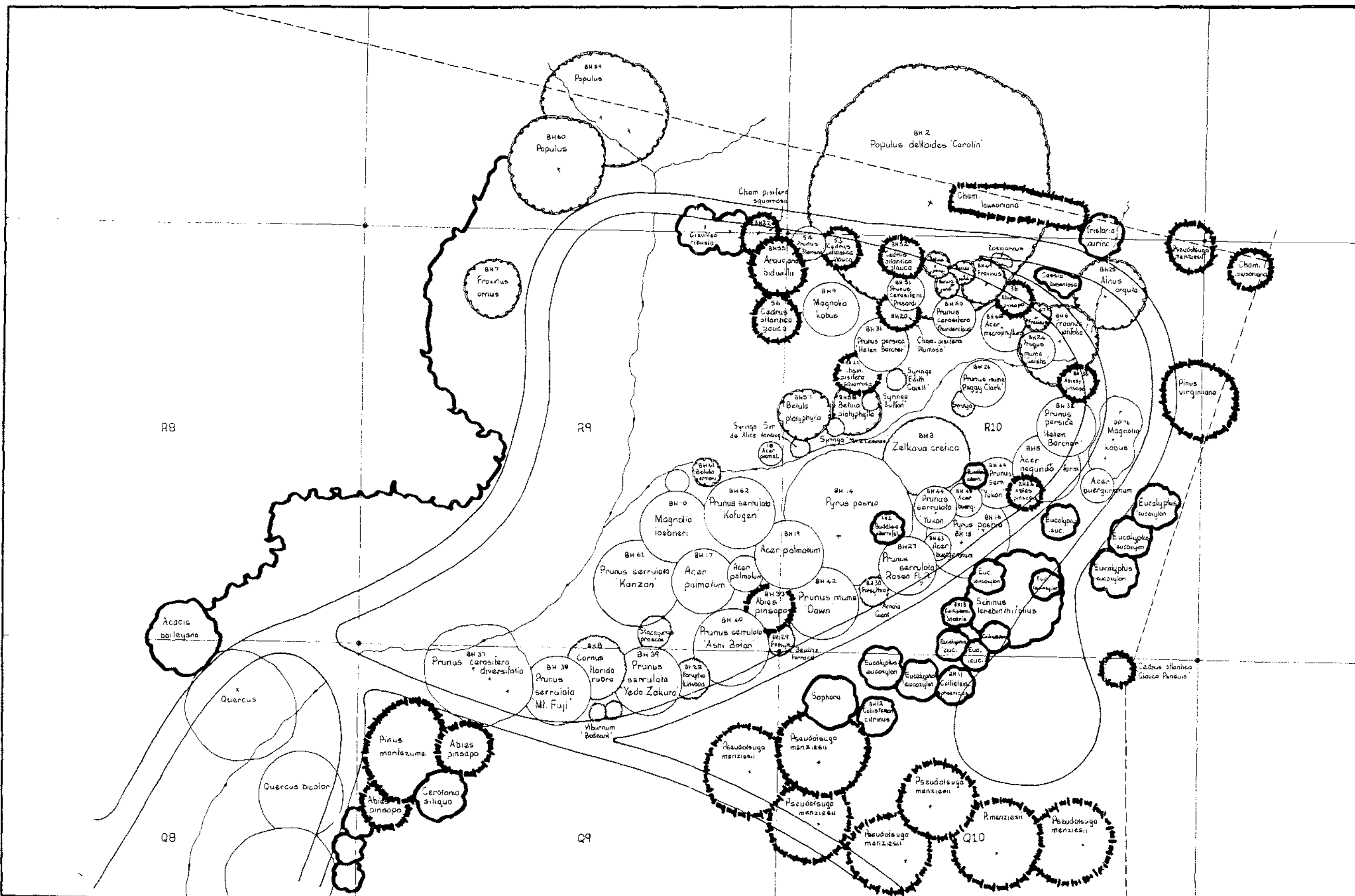
DRAWN M. Mackay		CHECKED	SCALE 1:200 (m 1:1)	SERIES OF
TRACED M. Mackay		DATE May 1990	Grid 50.50m	REF



Orchard Hill (far end) showing the configuration that existed in 1989, before the workshops.

EASTWOODHILL ARBORETUM

Orchard Hill - Far end		SHEET	
~ Streams ~ Fences ~ Paths + Grid		5	
DRAWN M. Mackay	CHECKED	SCALE 1:200 (on A1)	SERIES OF
TRACED M. Mackay	DATE May 1996	Grid 50 x 50m	REF



Basinhead, showing the configuration that existed in 1989, before the workshops.

EASTWOODHILL ARBORETUM

Basinhead		SHEET 6	
— Streams — Fences — Paths + Grid		SERIES OF	
DRAWN M. MacKay	CHECKED	SCALE 1: 200 (A1)	REF
TRACED M. MacKay	DATE May 1996	Grid 50 x 50 m	

Catalogue of the previous collection



Manglietia sp., Cabin Park, December 1989.

EASTWOODHILL ARBORETUM NGATAPA, GISBORNE

Inventory Part Three: The 'previous' collection

PLANT ACQUISITIONS ADDITIONAL TO THE CURRENT COLLECTION

**Marion MacKay
Department of Plant Science
Massey University**

**First published 1989
Revised but not re-published 1993**

Eastwoodhill Publication No 3.

This catalogue has been compiled following a comprehensive inventory of all plants at the Arboretum. Listed herein are the plants that were obtained for Eastwoodhill by W.D.Cook, but which are apparently no longer in the collection. This catalogue is a companion to the 'Catalogue of Trees, Shrubs and Climbers' (Eastwoodhill Publication No. 1), which describes the current collection.

Acknowledgements

The preparation of this catalogue was completed with the support of the Massey University Agricultural Research Foundation, The C. Alma Baker Trust, and The New Zealand Lottery Board.

The assistance of the Eastwoodhill Trust Board and associated persons is gratefully acknowledged.

Introduction

This catalogue, and its companion volume, are the result of a study initiated in 1986 on the plant material at the Eastwoodhill Arboretum. The project represents part of the inventory stage of a doctorate thesis on the botanical resource at the Arboretum, and in New Zealand, which has been initiated at the Department of Horticultural Science at Massey University.

Eastwoodhill is 35km from Gisborne in a relatively isolated rural area. Information on the Arboretum and the current collection can be found in the companion volume 'Catalogue of Trees, Shrubs and Climbers.' The collection was the work of the late W.D.Cook, horticulturist, of Gisborne. During his lifetime he imported some 5000 different species and cultivars of plants for his Arboretum. About 2500 exist today, a total of about 8000 trees in all. This document attempts to compile a record of those plants which were purchased but which no longer exist in the collection today.

The information for this document was gathered from the notes made by Cook in his reference books. The main reference he used for this purpose was W.J.Bean's 'Trees and Shrubs Hardy in the British Isles' of which he had two sets, a 5th edition and a 7th edition. In these he noted the date of purchase and source of incoming plants. Occasional notes also appear in other books, but on the whole these corroborate the former.

The coding for the books in this catalogue is used to distinguish between the two sets of the text, 'EWH' referring to the set held at the Arboretum, and 'lib' referring to the set held in the library collection. The codes I, II and S are used to indicate the volume number, S indicates the supplement of the 5th edition.

Many of the entries in this catalogue are taken from hand written notes in the aforementioned books, and the legibility of some of the original entries is difficult. Therefore it is likely that there are errors in some of the dates, particularly it was hard to distinguish 3 and 5 in many cases.

In some cases plants are recorded in this list that also occur in the current catalogue. In these cases additional information has been found, for example record of another source or date of importation. These entries are indicated by an '+'.

The scientific names are those used in the editions of Bean in question. As much as possible these are cross referenced to names in current usage.

I wish to thank the Trust Board for their cooperation for the duration of this project.

Marion MacKay, 1989, 1993.

Sources of plant material

Bod	presumably Bodnant, Great Britain.
D, D&D	Duncan and Davies Nursery, New Plymouth, New Zealand.
Goodwin	Jack Goodwin, then Director of Parks, New Plymouth, New Zealand.
G	Goudie's Nursery, New Zealand.
Horton	Hortons Nursery, New Zealand.
H&S, or Hill	Hillier and Sons, Winchester, England.
HZ	unknown.
IH	unknown.
J	unknown.
M, or Massey	New Zealand Rhododendron Association Nursery, then at Massey University, Palmerston North, New Zealand.
McK	probably Ian McKean, Rangiwahea, New Zealand.
P	possibly F.C.Puddle, of Bodnant, Great Britain.
Russell	either Russell Cook of Hawkes Bay, or Russell Mathews of New Plymouth, New Zealand.
S	unknown.
Sloccock	Sloccock Nursery, England.
Stevens	Stevens Nursery, New Zealand.
Walker	probably Walkers Nursery, Mayfair, Hastings, New Zealand.
Webb	Webbs Nursery, New Zealand.
Wilson	Wilsons Nursery, Christchurch, New Zealand.

Method of listing in this catalogue

Scientific name. Country of origin. Source of purchase. Reference book from which the information came.

For example;

- Abelia floribunda* Mexico. S1938,39,D&D1939,S1941; (Bean I lib)
 + *Abelia grabneriana* China. D1937, (Bean S lib)
 + *Abelia x grandiflora* Hort. H&S1948 (Bean I lib)

'+' Indicates a plant for which there is already a listing in the current catalogue. The entry in this document therefore represents either (i) further purchases by Cook, or, (ii) a purchase in the Cook era which no longer exists, the current catalogue entry representing another purchase. 'Name not confirmed' or 'NNC' after a plant name indicates a name that may not be valid, as that name has not yet been found in the literature.

Genera of plants in this document that are not in the current catalogue

21 additional families, 211 additional genera

GYMNOSPERMAE: No additional families, 5 additional genera.

Coniferales

Cupressaceae:	Callitris, Fitzroya, Fokenia
Podocarpaceae:	Saxegothea
Taxodiaceae:	Athrotaxus

ANGIOSPERMAE: 21 additional families, 206 additional genera.

Monocotyledonae

Agavaceae:	Nolina
Liliaceae:	Dianella, Ruscus
Poaceae:	Bambusa

Dicotyledonae

Aceraceae:	Dipteronia
Acanthaceae:	Jacobinia, Mackaya, Ruellia
Actinidiaceae:	Actinidia
Anacardiaceae:	Harpephyllum, Smodingium
Apiaceae:	Bupleurum
Apocynaceae:	Carissa (Arduina), Mandevilla, Plumeria, Vinca,
Araliaceae:	Acanthopanax, Brassia, X Fatshedera, Panax
Asclepiadaceae:	Asclepias, Stephanotis
Asteraceae:	Artemesia, Cassinia, Chilio-richum, Erioccephalus, Montanoa, Mutisia, Ozothamnus
Bombaceae:	Fremontia
Bruniaceae:	Berzelia
Byttneriaceae:	Dombeya, Reevesia,
Caesalpinaceae:	Bauhinia, Caesalpinia, Parkinsonia, Poinciana, Schotia,
Campanulaceae:	Canarina
Caprifoliaceae:	Leycesteria, Symphoricarpos,
Chenopodiaceae:	Atriplex
Cistaceae:	Halimium, X Halimiocistus
Combretaceae:	Combretum, Quisqualis
Convolvulaceae:	Ipomaea, Quamoclit
Cornaceae:	Corokia
Cunoniaceae:	Weinmannia
Cyathaceae:	Hemitelia

Diapensiaceae:	Shortia
Ebenaceae:	Royena
Ericaceae:	Andromeda, Azalea, Calluna, Cassandra, Daboecia, Leiophyllum, Menziesia, Pentapterygium, Pernettya, Phyllodoce, X Phyllothamnus, Rhodothamnus, Zenobia
Euphorbiaceae:	Baloghia, Homalanthus
Eupteleaceae:	Euptelea
Flacourtiaceae:	Scolopia, Xylosma
Gesneriaceae:	Mitraria, Rhabdothamnus,
Hamamelidaceae:	Sinowilsonia
Icacinaceae:	Villaresia
Lamiaceae:	Perovskia, Spacele
Lardizabalaceae:	Sinofranchetia
Lauraceae:	Beilschmiedia, Lindera
Malpighiaceae:	Galphimia
Malvaceae:	Plagianthus
Mimosaceae:	Prosopis
Monimiaceae:	Laurelia
Moraceae:	Maclura
Myricaceae:	Comptonia
Myrsinaceae:	Ardisia
Myrtaceae:	Agonis, Backhousia, Beaufortia, Calytrix, Eugenia, Hypocalymma, Lhotskya, Psidium, Syncarpia, Thryptomene
Nyctaginaceae:	Bougainvillea
Oleaceae:	Phillyrea
Papavaceae:	Dendromecon
Papilionaceae:	Adenocarpus, Anagyris, Anthyllis, Barklya, Brachysema, Caragana, Carmichelia, Chordospartium, Chorizema, Colutea, Coronilla, Crotonaria, Desmodium, Halimodendron, Hovea, Lathyrus, Maackia, Notospartium, Podalyria, Psoralea, Pultenaea, Swainsonia, Ulex, Viminaria
Philesiaceae:	Lapergeria, X Philageria, Philesia,
Pittosporaceae:	Billardiera
Plumbaginaceae:	Plumbago
Polemoniaceae:	Cantua
Polygalaceae:	Polygala
Polygonaceae:	Polygonum
Proteaceae:	Braebejum, Dryandra, Gevuina, Hakea, Lambertia, Leucadendron, Leucospermum, Persoonia, Petrophila, Stenocarpus, Telopea,
Rhamnaceae:	Colletia, Zizyphus
Rosaceae:	Docynia, Heteromeles, Holodiscus, Neviusia, Peraphyllum, Rubus, X Sorbaronia,
Rubiaceae:	Alberta, Bouvardia, Gardenia, Leptodermis, Luculia, Manettia, Mussaenda, Posoqueria, Rondeletia
Rutaceae:	Acradenia, Adenandra, Boronia, Casimiroa, Coleonema, Correa, Diosma, Eriostemon, Murraya, Orixia, Phebalium, Skimmia
Sapindaceae:	Harpullia, Xanthocerus
Saxifragaceae:	Anopterus, Bauera, Fendlera, Pileostegia, Ungnadia

Schisandraceae:	Kadsura
Scrophulariaceae:	Dermatobotrys, Diplacus, Jovellana, Phygelius, Russellia
Solanaceae:	Brunfelsia, Datura, Fabiana, Iochroma
Styracaceae:	Alniphyllum
Tamaricaceae:	Myricaria
Theaceae:	Cleyera
Tiliaceae:	Grewia, Luehea
Thymeleaceae:	Pimelia
Tropaeoleaceae:	Tropaeolum
Urticaceae:	Debregeasia
Verbenaceae:	Caryopteris, Citharexylum, Holmskioldia, Lippia, Verbena,
Winteraceae:	Drimys

Not assigned Corysema, Panay

Plants noted by W D Cook as having been in the collection.

The numbers in brackets represent Species + Cultivars. (Only species and cultivars additional to the current collection, i.e. those marked '+' are not counted as that species or cultivar has already been counted in the current collection under another acquisition)

Abelia: Caprifoliaceae (6+0)

- chinensis (A. rupestris Lindl.)* China. Webster (Bean I lib)
- floribunda* Mexico. S1938,39,D&D1939,S1941; (Bean I lib)
- + *graebneriana* China. D1937, (Bean S lib)
- + *x grandiflora (rupestris Hort.)* Hort. H&S1948 (Bean I lib)
- longituba* China. Hill1947, (Bean S lib)
- triflora* Himalaya. Goodwin1946, (Bean I lib)
- umbellata* China. 1960 (Bean 1 EWH). Hillier, (RHS1). planted GD,
- uniflora* China. Goodwin1946, (Bean I lib)

Abeliophyllum: Oleaceae

- + *distichum* Korea. H&S1947, (Bean S lib)

Abies: Pinaceae (9+4)

- + *amabilis* N.America. S1944, H&S1948; (Bean I lib)
- balsamea 'Hudsoniana'*
- + *concolor* USA, Mexico. G1944
- 'Violacea'* N America, Mexico. H&S1948 (Bean I lib)
- + *delavayi* China. H&S1950, S1941 died, (Bean I lib)
- + *delavayi var. delavayi (A. fabri)* China. H1948 dead, (Bean S lib)
- + *delavayi var. georgei (A. georgei)* China. H1948, (Bean S lib)
- faxoniana (delavayi var. faxoniana)* China. H&S1948 1957 9ft, (Bean S lib)
- forrestii (delavayi var. forrestii)* China. H&S1948 1957 15ft, (Bean S lib)
- gamblei* see *pindrow var. brevifolia*
- georgei* (related *faxoniana*) see *delavayi var. georgei*
- humilis* (Name not confirmed). H1950, (Bean S lib)
- + *koreana* Korea. H&S1948 1957 7ft, (Bean S lib)
- lasiocarpa* N.America
- 'Argentea Glauca'* N America, H&S1948, (Bean I lib)
- lowiana (concolor 'Lowiana')* N America, Mexico, H&S1948, (Bean I lib)
- + *magnifica* California. G1944, H&S1948, Forestry dpt 1962,
- moreheimeii* see *Picea pungens 'Moreheimeii'*
- + *nebrodensis (alba var. nebrodensis)* Italy. H&S1950, (Bean II lib)
- nobilis* see *procera*
- + *nordmanniana* Caucasus, Asia minor. 1934-46
- pindrow* Himalaya. H&S1948, (Bean I lib)
- + *pindrow var. brevifolia (gamblei)* Himalaya. H&S1948, (Bean S lib)
- + *pinsapo* Spain. Priestleys camp 1934, rest 1937-45
- + *procera (nobilis)* N.America. Forestry dept 1962, (RHS1).
- procera 'Glauca'* N America, H&S1948, W1957, (Bean I lib)
- pungens 'Moreheimeii'* see *Picea pungens 'Moreheimeii'* (1957 12ft), (Bean I lib)

- + *religiosa* Forestry dept 1962, (RHS1).
 + *spectabilis* var. *brevifolia* Himalaya. 1957 5ft, (Bean S lib)
sutchuenensis (*fargesii* var. *sutchuenensis*) China. G1944, H&S1948, 1957 5ft. (Bean S lib)
sutchuenensis *alpine form* China. (Bean S lib)
 + *veitchii* Japan. S1938
x vilmorinii (*pinsapo* x *cephalonica*) Spain. H&S1948, 50 dead; (Bean I lib)
virgata (Name not confirmed, a form of *A.alba*?). H&S1950, (Bean I lib)

Abutilon: Malvaceae (2+10)

giant flowered (Name not confirmed) D&D1945, (Bean I lib)

insigne Columbia, Venezuela.

‘**Bright Red**’ (Name not confirmed). D&D1947 (Bean I lib)

‘**Buff Queen**’ (Name not confirmed). Wilson 1946 (Bean I lib)

‘**Cardinal**’ (Name not confirmed). D&D1947 (Bean I lib)

‘**Deep Pink**’ (Name not confirmed). D&D1947 (Bean I lib)

‘**Deep Rose**’ (Name not confirmed). D&D 1947 (Bean I lib)

‘**Mahogany**’ (Name not confirmed). Wilson 1946,47 (Bean I lib)

‘**Mahogany Red**’ (Name not confirmed). D&D1947 (Bean I lib)

Orange semi double (Name not confirmed). D&D 1948 (Bean I lib)

‘**Purple Emperor**’ (Name not confirmed). Wilson 1947 (Bean I lib)

‘**Rose Queen**’ (Name not confirmed). Wilson 1946,47 (Bean I lib)

megapotamicum (*vexillarium*) Brazil. 1948 (Bean I lib)

- + *vitifolium* Chile. D&D1937,40; (Bean I lib)

Acacia: Fabaceae - Mimosaceae (14+1)

accola Australia. (PPL)

buxifolia Australia. (PPL)

- + *decurrens* Australia. (PPL)

discolor (*terminalis*) Australia. (PPL)

elongata Australia. (Cook 1965)

jonesii Australia. (PPL)

kettlewelliae Australia. (PPL)

linifolia (*linearis*) Australia. (PPL)

myrtifolia Australia. (PPL)

podalyriifolia Australia. (PPL)

pruinosa Australia. (Cook 1965)

pulchella Australia. (PPL)

rupicola Australia. (PPL)

stricta Australia. (PPL)

suaveolens Australia. (PPL)

verticillata ‘**Rewa**’ PRICKLY MOSES. Australia. not found H8

Acanthopanax: Araliaceae (1+0)

trifoliatus China, Japan. Massey1948, (Bean I lib)

Acer: Aceraceae (26+24)

- + *buergerianum* (*trifidum*) China. Stevens 1941, Japan 1920, (Stevens form noted as being useless). (Bean I lib)
californicum see *negundo* var. *californicum*
 + *campbellii* Himalaya. H&S1946,48, (Bean S lib)

- + *campestre* Europe, Asia minor. (PPL)
 ‘**Pulverulentum**’ (Cook 1965)
- + *cappadodicum (laetum, colchicum)* Caucasus, Asia minor, Himalaya. D1939, (Bean I lib)
- + ‘**Aureum**’ Slocock1938, (Bean I lib)
- caudatum* Himalaya, Upper Burma. Hill1964, (RHS1).
- + *circinatum* N.America. H&S1937,47; (Bean I lib)
- + *cissifolium* Japan. (Bean EWH), planted GD;
- colchicum* ‘**Aureum**’ see *A. cappadodicum* ‘**Aureum**’
- crataegifolium* HAWTHORN MAPLE. not found K11. Japan. H&S1948, (Bean I lib)
- + *creticum*.Auct. (*sempervirens*.L., *orientale*.Auct.) Meditteranean. H&S1936,48; (Bean I lib)
- + *davidii* China. D&D1947, Cook1934; (Bean I lib)
- + ‘**Horizontalis**’ (‘**George Forrest**’)
 H&S1937,46,48, (B 1,lib) noted as planted Circus,GD (Bean, EWH)
- + *diabolicum* Japan. H&S1937, (Bean I lib)
- + *diabolicum f.purpurescens* Japan. H&S1946, (Bean I lib)
- distylum* Japan. (Bean, EWH), noted as planted in Circus
- + *divergens (quinquelobum*.K Koch not Gilib.) Asiatic Turkey. H&S1964, (Bean, EWH)
- + *erianthum* China. H&S1946,50; (Bean S lib)
- + *flabellatum* China. H&S1964, (Bean, EWH)
- + *forrestii* China. H&S 1937,47; (Bean S lib)
- + *ginnala (tataricum var. ginnala)* China, Japan. Horton 1919, (Bean I lib)
- grandidentatum* see *A.saccharum ssp. grandidentatum*
- + *griseum (nikoense var. griseum)* China. Slocock1938, H&S1937 died; (Bean I lib)
- + *heldreichii* Greece, Bulgaria. H&S1947, (Bean I lib)
- + *henryi* China. H&S1937 died, I1938; (Bean I lib)
- hersii sp1183* planted GD, (Bean, EWH)
- + *hookeri* Himalaya. S1939, D1945; (Bean I lib)
- hookerianum hillier* (Name not confirmed) D1946, (Bean I lib)
- + *japonicum* Japan. H1937, (Bean I lib)
- + ‘**Aureum**’ Japan1918, (Bean I lib). Hill1964, (RHS1).
 ‘**Laciniatum**’ Hill1964, (RHS1).
- laevigatum* China. H&S1948, (Bean I lib), planted OH GD, (Bean S lib)
- + *macrophyllum* N.America. D1937,38, (Bean, EWH)
- mandshuricum* China, Korea. H&S1947, (Bean, EWH), (Bean I lib)
- maximowiczii* China. H&S1947, (Bean, EWH), (Bean I lib)
- micranthum* Japan. H&S1947, (Bean I lib)
- mono (pictum)* China, Korea. H&S1948, (Bean, EWH), (Bean I lib), planted OH.
 ‘**Marmoratum**’ PAINTED MAPLE. Japan, Korea. removed I10
- + *negundo* N.America.
 ‘**Albovariegatum**’ D&D1937,45,46; (Bean I lib)
 ‘**Aureovariegatum**’ D1937-46, (Bean I lib)
 ‘**Aureum**’ H&S1937, (Bean I lib)
 ‘**Crispum**’ D&D1937, (Bean I lib)
 ‘**Elegantissimum**’ H&S1937, (Bean I lib)
- + *var. californicum* California. Slocock1938, (Bean I lib)

- + *var. violaceum* N.America. D&D1937, (Bean I lib)
- nigrum* see *A.saccharum* ssp. *nigrum*
- + *nikoense (maximowiczianum)* Japan. Westonbirt 1936, Slocock 1938, (Bean I lib)
- oblongum* Himalaya, China. (Bean, EWH), near *Gleditsia* in gdn.
- osmastonii* Himalaya. H&S1954, (Bean I lib)
- + *palmatum (polymorphum)* Japan. D1937, (Bean I lib)
- + ‘**Atropurpureum**’ D1937, H1937, (Bean I lib)
- ‘**Bicolor**’ D1945, (Bean I lib)
- ‘**Chishio**’
- + ‘**Dissectum Atropurpureum**’ IH, (Bean I lib)
- ‘**Dissectum Flavescens**’ H&S1964, (Bean, EWH)
- ‘**Dissectum Rubrum**’ IH1937, (Bean I lib)
- ‘**Dissectum Washi-mo-o**’ IH1937, (Bean I lib)
- ‘**Elegans Purpureum**’ H1937, (Bean I lib)
- + ‘**Lutescens**’ (Bean, EWH). Hill1964, (RHS1).
- ‘**Luteum**’ D1937, (Bean I lib)
- ‘**Nigricans**’ H&S1938, (Bean I lib)
- + ‘**Nigrum**’ H&S1937, (Bean I lib)
- + ‘**Osakasuki**’ S1937 (Bean I lib)
- ‘**Roseum**’ W1937, D1937, (Bean I lib). Hill1964, (RHS1).
- + ‘**Rubrum**’ D1937, H1937, S1938, (Bean I lib)
- ‘**Sanguineum Chishio**’ D1937, (Bean I lib)
- ‘**Sanguineum Seigan**’ S1937, (Bean I lib)
- + ‘**Seigan**’ IH1943, (Bean I lib)
- ‘**Septemlobum Atropurpureum**’ D1946, H&S1937, (Bean I lib)
- ‘**Septemlobum Elegans Purpureum**’ H&S 1937, (Bean I lib)
- + ‘**Septemlobum Purpureum Superbum**’ Slocock 1937, (Bean I lib)
- + ‘**Septemlobum Rubrum**’ H&S1937, Slocock 1938; (Bean I lib)
- ‘**Swminagashi**’ (Name not confirmed) IH1938, (Bean I lib)
- ‘**Tsumigaki**’ IH1937, (Bean I lib)
- + *pensylvanicum* N.America.
- + ‘**Erythrocladum**’ H&S1946, (Bean I lib)
- + *platanoides* Europe. Horton1919, (Bean I lib)
- ‘**Dissectum**’ (PPL)
- + ‘**Schwedleri**’ H&S1937, (Bean I lib)
- pseudoplatanus* Europe, Asia.
- + *f.erythrocarpum* H&S 1947, (Bean I lib)
- + ‘**Leopoldii**’ Slocock1938, (Bean I lib)
- f.purpureum spaethii* (‘**Atropurpureum**’) Europe, S1938, (Bean I lib)
- reticulatum* (Name not confirmed) H&S1964, (Bean, EWH), planted Circus.
- violaceum* (Name not confirmed) (Bean, EWH), planted GD.
- quinquelobum* see *divergens* Asiatic Turkey? (Rehder, EWH)
- x rotundilobum* (*monspessulanum* x *opalus* var. *obtusatum*), Hort. (Rehder, EWH)
- + *rufinerve* Japan. H1946, (Bean I lib), planted on brothers.

- + *saccharinum (dasycarpum)* N.America. Slocock1938, Horton 1919; (Bean I lib)
- + '**Laciniatum**' D1939,43, (Bean I lib)
- + '**Pulverulentum**' W1939, H1934,35, (Bean I lib)
- + '**Pyramidale**' ('**Fastigiatum**') Hill1964, (RHS1).
- + *saccharum* N.America. H&S 1937, Slocock1938; (Bean I lib)
- + *saccharum ssp. grandidentatum* N America. H&S1948, (Bean I lib)
- + *saccharum ssp. nigrum* N America. H&S1937, (Bean I lib)
- + *saccharum ssp. schneckii* N America. (Rehder, EWH), planted Circus.
- + *schmerenii* (Name not confirmed) (Cook 1965)
- + *sikkimense* Himalaya. 1947, (Bean, EWH), planted Circus.
- + *syriacum* Syria, Lebanon, Israel. H&S1964, (Bean, EWH), (Redher, EWH)
- + *taronense (laxiflorum var. longilobum)* Burma, China. H&S1964, (Bean, EWH)
- + *tataricum* Europe. H&S1946, (Bean I lib)
- + *tenellum (mono var. tricuspis)* China. H&S1948, (Bean S lib), planted OH. H&S1964, (Bean, EWH)
- + *trifidum* see *A.buergerianum*
- + *trautvetteri* Caucasus. H&S1947, (Bean I lib)
- + *truncatum* China. H&S1964, (Bean, EWH)
- + *tschonoskii* Japan. H&S1947, (Bean, EWH), planted GD.
- + *ukurunduense (caudatum var. ukurunduense)* China. H&S1947, (Bean I lib)
- + *velutinum var. vanvolxemi (vanvolxemii)* Caucasus, Iran. H&S1948, (Bean I lib)
- + *villosum (sterculiaceum)* (Bean suggests these are not synonyms). Himalaya. H&S1964, (Bean, EWH)
- + *x zoeschense var. georgiana* Hort. GD
- + *sp KW9511* planted GD, (Bean, EWH)
- Acradenia: Rutaceae (1+0)**
- + *frankliniae* Tasmania. H&S1947, (Bean S lib)
- Actinidia: Actinidiaceae (5+0)**
- + *coriacea* China. H&S1950, (Bean I lib)
- + *giant* (Name not confirmed) D1947, (Bean S lib)
- + *kolomikta* China, Japan. H&S1939,48, (Bean I lib)
- + *polygama* China. H&S1947, (Bean I lib)
- + *rubricaulis* China. H&S1948, (Bean I lib)
- Adenandra: Rutaceae (2+0)**
- + *fragrans* S.Africa. (Cook 1965). D&D1943, (Bean S lib)
- + *uniflora* S Africa. D1943,45, (Bean S lib)
- Adenocarpus: Fabaceae - Papilionaceae (3+0)**
- + *anagyriifolius* Morocco. H&S1948, (Bean I lib)
- + *decorticans* Spain. H&S1950, (Bean I lib)
- + *frankenoides (viscosus)* Canary Island. H&S1950, (Bean I lib)
- Aesculus: Hippocastanaceae (8+4)**
- + *austrina (discolor var. mollis)* N America. H&S 1950, (Bean I lib)
- + *californica* California. H&S 1946,50, (Bean I lib)
- + *x carnea (hippocastanum x pavina)* Hort.
- + '**Briotii**' H1937, Slocock1938; (Bean I lib)
- + *chinensis* China. H&S1947, (Bean I lib)

- + *flava* (*octandra*) N.America. Slocock 1938, (Bean I lib)
 var. purpurascens (*octandra var. purpurescens, x hybrida*) H&S1946, (Bean I lib)
 var. sanguinea (Name not confirmed) Below Bills, (Cook 1965)
georgiana (*neglecta var. georgiana, silvatica*) N.America. H&S1947, (Bean S lib)
- + *glabra* N.America. H&S1948, (Bean I lib)
x glaucescens (*flava x silvatica*) N America. H&S1947, (Bean S lib)
- + *hippocastanum* Greece, Bulgaria. Horton1919, (Bean I lib)
 ‘Flore Pleno’ (‘Baumannii’) N1935, (Bean I lib)
- + ‘Pumilum’ (‘Digitata’) H1947 (Bean I lib)
- + *indica* India. Slocock1938, H&S1937; (Bean I lib)
x mutabilis (*pavia x silvatica*) Hort.
 ‘Harbisonii’ H&S1947, (Bean S lib)
- + ‘Induta’ H1947, (Bean S lib)
x neglecta ‘Erythroblastos’ N.America. H&S1937,47 died, (Bean I lib)
- + *parviflora* N.America. Slocock1938, (Bean I lib)
pavia ‘Atrosanguinea’ N.America. H&S1937, (Bean I lib)
- + *pavia.flava* Hort. Slocock 1938, (Bean I lib)
rosea (seedling line of *flava var. purpurescens*) N.America. H&S1948, (Bean I lib)
sanguinea (seedling line of *flava var. purpurescens*) N.America. H&S1946, (Bean I lib)
turbinata Japan. H&S1947, (Bean I lib)
wilsonii China. (Bean, EWH), planted Circus, GD1960,
- Agonis: Myrtaceae (2+0)**
flexuosa Australia. D1943, too tender, (Bean S lib)
parviceps Australia. Bull, 1988. dead G8
- Alberta: Rubiaceae (1+0)**
magna S.Africa. (Cook 1965)
- Albizia: Fabaceae - Mimosaceae (2+0)**
kalkora China. (Bean I lib)
lophantha (*distachya*) Australia. (Cook 1965)
- Alniphyllum: Styraceae (1+0)**
fortunei China. H&S1947,48 died, (Bean S lib)
- Alnus: Betulaceae (0+2)**
- + *firma* (*sieboldiana*) Japan. (Rehder, EWH)
- + *glutinosa* ‘Aurea’ Europe. Hill1964, RHS1.
glutinosa ‘Imperialis’ Europe. H&S1947, (Bean I lib)
- + *incana* ‘Aurea’ Europe, Caucasus. H&S1948, (Bean I lib)
incana ‘Ramulis Coccineis’ Europe, Caucasus. H&S1947, (Bean I lib)
- + *lanata* China. H&S1947, (Bean I lib)
- + *nitida* India, Himalaya. Hill1964, (RHS1).
- + *rhombofolia* N.America. Hill1964,65, (RHS1).
- + *sinuata* N.America. Seattle 1951, (Bean, EWH)
- Amelanchier: Rosaceae (3+0)**
alnifolia N America. H&S1947, (Bean I lib)
- + *laevis* N.America. H&S1946, (Bean S lib)
oblongifolia (*canadensis* L., not sens Weig.) N America. H1937,48; (Bean I lib), planted Circus

- stolonifera* N America. H&S1948, (Bean S lib)
- Amorpha: Fabaceae - Papilionaceae**
- + *fruticosa* N.America. H1934, (Bean I lib)
- Ampelopsis: Vitaceae (1+0)**
- + *aconitifolia (Vitis aconitifolia.)* China. H&S1938, (Bean I lib). H&S1948, (Bean II lib).
- + *brevipedunculata (Vitis b., Vitis heterophylla)* Japan, Korea, China. H&S1948, (Bean II lib).
D1938, S1939,41, (Bean II lib)
- + **'Elegans' (V.heterophylla 'Elegans')** H&S1947, (Bean II lib).
- + *megalophylla (Vitis megalophylla)* China. H&S1948, (Bean I lib)
- orientalis (Vitis orientalis.)* Asia minor, Syria. H&S1947, (Bean II lib).
- Anagyris: Fabaceae - Papilionaceae (1+0)**
- foetida* Europe. H&S1947, (Bean I lib)
- Andromeda: Ericaceae (1+0)**
- polifolia* Europe, Asia, America. D1948, (Bean I lib)
- Anopterus: Saxifragaceae (1+0)**
- glandulosa* Tasmania. D 1935,48; (Bean S lib)
- Anthyllis: Fabaceae - Papilionaceae (1+0)**
- barba-jovis* Meditteranean. H&S1950, (Bean I lib)
- Aralia: Araliaceae (0+2)**
- chinensis 'Albomarginata'* China. H1937, (Bean I lib)
- chinensis 'Aureomarginata'* China. H1937, (Bean I lib)
- Araucaria : Araucariaceae (1+1)**
- cookii (columnaris)* New Caledonia. D1937 died, (Bean I lib)
- cunninghamii 'Glauca'* Australia. D1937, (Bean I lib)
- + *imbricata (araucana)* Chile. (PPL). Horton, D&D1965, (RHS1).
- Arbutus: Ericaceae (2+1)**
- andrachne* Greece. H&S1933,47,50, (Bean I lib)
- + *x hybrida (x andrachnoides)* Greece. H&S1947, (Bean I lib)
- menziesii* N.America. D1935, IS1938, RHS seed 1944; (Bean I lib)
- unedo 'Quercifolia'* Ireland, Asia minor. H&S1948, (Bean I lib)
- Ardisia: Myrsinaceae (1+0)**
- crenulata (crenata, crispa)* Japan to India. H&S1949, (Bean I lib)
- Arduina (Carissa): Apocynaceae (0+1)**
- bispinosa 'Grandiflora'* S.Africa. HZ1949, (Bean I lib)
- Aristolochia: Aristolochiaceae (4+0)**
- altissima* Sicily, Algeria. H&S1948, (Bean I lib)
- elegans* Brazil. 1957, (RHS1).
- grandiflora* Tropical America. 1957, (RHS1).
- macrophylla (durior)* N.America. 1957, (RHS1)
- Aristolelia: Eleocarpaceae (1+0)**
- + *macqui (chilensis)* Chile. Goodwin1947, (Bean I lib)
- racemosa (serrata)* New Zealand. (Cook 1965)
- Aronia: Rosaceae (1+1)**
- Aronia arbutifolia 'Erecta' (Pyrus arbutifolia 'Erecta')* N.America. H&S1947, (Bean I lib)
- melanocarpa (Pyrus melanocarpa.)* N.America. (Cook 1965)

Artemesia: Asteraceae (3+0)

- abrotanum* Europe, Spain. H1948, (Bean I lib), above cabin.
- arborescens* Italy, Corsica. Hill1964,65, (RHS1).
- tridentata* N.America. (Cook 1965).

Asclepias: Asclepiadaceae (1+0)

- curassavica* 1957, (RHS1).

Athrotaxus: Taxodiaceae (4+0)

- cupressoides* Tasmania. H&S1948, (Bean I lib)
- laxifolia* Tasmania. H&S1948,50, (Bean I lib)
- lycophodioides* (Name not confirmed) D1945, (Bean I lib)
- selaginoides* Tasmania. D1941, (Bean I lib)

Atriplex: Chenopodiaceae (1+0)

- halimus* Europe. D1938, (Bean I lib)

Azara: Flacourtiaceae (1+2)

- dentata* Chile. H&S1950, (Bean I lib)
- + *integrifolia* Chile. H&S1948, S1949, (Bean S lib)
- ‘**Variegata**’ H&S1947, (Bean S lib)
- + *lanceolata* Chile. H1940, (Bean S lib)
- + *microphylla* Chile. H1930,37, IH1945, (Bean I lib)
- ‘**Variegata**’ (Cook 1965)

Backhousia: Myrtaceae (1+0)

- citriodora* Australia. H1946, (Bean S lib)

Baeckia: Myrtaceae

- + *virgata* Australia. D1939, (Bean I lib)

Baloghia: Euphorbiaceae (1+0)

- lucida* Australia. D1947, (Bean I lib)

Bambusa: Poaceae (1+0)

- gracilis* (Name not confirmed) (PPL)
- nigra* see *Phyllostachys nigra*

Banksia: Proteaceae (8+0)

- brownii* Australia. D&D1964, (RHS1).
- + *collina* Australia. H1945, (Bean S lib)
- + *ericifolia* Australia. D1945, (Bean S lib)
- ericoides* (Name not confirmed) D1941, T1947, (Bean S lib)
- grandis* Australia. (Cook 1965). D&D1941,46, (Bean S lib)
- lehmanniana* Australia. D1946, (Bean S lib)
- littoralis* Australia. 1949, (Bean S lib)
- prionotes* Australia. (PPL).
- + *serrata* Australia. D1945, (Bean S lib)
- speciosa* Australia. D1946, (Bean S lib)
- verticillata* Australia. (Cook 1965)

Barklya: Fabaceae - Caesalpinaceae (1+0)

- syringifolia* Australia. HZ1949, (Bean S lib)

Bauera: Saxifragaceae (1+0)

- rubioides* Australia. D1938, (Bean S lib)

*Bauhinia: Fabaceae - Caesalpinaceae (3+0)**alba* (*variegata* 'Candida') India, China. HZ1948, (Bean I lib)*galpinii* (*punctata*) S.Africa. HZ1948, (Bean I lib)*purpurea* (*triandra*) India, Burma, China. HZ1948, (Bean I lib)*Beaufortia: Myrtaceae (2+0)**purpurea* Australia. (Cook 1965)*sparsa* Australia. D1945,46, (Bean S lib)*Beilschmiedia: Lauraceae (1+0)**tarairi* New Zealand. (Cook 1965)*Berberidopsis: Flacourtiaceae*+ *corallina* Chile. S1935, D1948, (Bean I lib)*Berberis: Berberidaceae (26+7)*+ *actinacantha* Chile. H&S1939, 50, (Bean I lib)*brachypoda* China. RHS seed 1946, (Bean I lib)*breveraniculata* (Name not confirmed) (Cook 1965)*buxifolia* Chile. H&S1948, (Bean I lib)*calliantha* Tibet. H&S1948, (Bean I lib)*x carminea* Hort.

'Barbarrosa' H&S1948, (Bean S lib)

+ 'Buccaneer' H&S1948, (Bean S lib)

chillanensis var. *hirsutipes* S.America. H&S1950, (Bean S lib)*darwinii albicaulis* (Name not confirmed) (Cook 1965)*darwinii coccinea* (*x stenophylla* 'Coccinea' ?) Hort. (Cook 1965)*darwinii* var. *macrophylla* (*x antoniana*) (*darwinii x buxifolia*) Hort. H&S1959, (Bean I lib)*dictophylla* var. *albicaulis* China, Yunnan. H&S1948,56, (Bean I lib)*dielsiana* China. H&S1948, (Bean I lib)*edgworthiana* Himalaya. (PPL)*fortunei* see *Mahonia fortunei* China. (PPL)*francisci-ferdinandii* China. 1935, (Bean S lib)*gagnepainii* W.China. (Cook 1965)*hookeri* Himalaya. (Cook 1965)+ *hypokerina* Burma. H&S1948, (Bean I lib)*insignis* Sikkim. H&S1948, (Bean S lib)+ *jamesiana* China. RHS seed 1946,47, (Bean S lib)*japonica* see *Mahonia japonica* Japan. H1935, (Bean I lib)*koreana* Korea. H1937, D1939, (Bean S lib)+ *lempergiana* China. H&S1947, (Bean S lib)+ *linearifolia* Chile. H&S1948, (Bean S lib)+ *x lologensis* (*darwinii x lologensis*) Hort. H&S1948, (Bean S lib)*lomariifolia* see *Mahonia lomariifolia* China. H&S1946, (Bean I lib)*montana* Argentina, Chile. H&S1937,48, (Bean S lib)+ *morrisonensis* Taiwan. H&S1948, (Bean S lib)+ *orthobotrys* Kashmir. H1937, (Bean S lib)+ *panlanensis* China. H&S1947, (Bean S lib)*pinnata* see *Mahonia pinnata* California. H&S1946, (Bean I lib)

- polyantha* China.
hirtipes (Name not confirmed) (Cook 1965)
repens var. *rotundifolia* see *Mahonia repens* var. *rotundifolia*
 N.America. H&S1948, (Bean I lib)
x rubrostilla Hort. (Cook 1965)
 ‘**Fireflame**’ (Name not confirmed) (Cook 1965)
 ‘**Sparkler**’ (Name not confirmed) (Cook 1965)
- + *sargentiana* China. H&S1948, (Bean I lib)
sieboldii Japan. S 1938, (Bean I lib)
x stenophylla ‘**Coccinea**’ Hort. H&S 1959, (Bean I lib)
x stenophylla ‘**Corallina**’ Hort. H&S1937 died, (Bean I lib)
subcaulialata China. (PPL)
thunbergii Japan. (PPL)
 ‘**Purpurea**’ (Name not confirmed) (Bean I lib)
 ‘**Erecta**’ D1947, (Bean I lib)
- + *vernae* China. H&S1949, (Bean S lib)
verruculosa Szechuan. H&S1948, (Bean I lib)
virescens var. *ignorata* Himalaya. H&S1948, (Bean I lib)
wallichiana Nepal. H&S1939, (Bean S lib)
wilsoniae Szechuan. H&S1948, (Bean I lib)
- + *yunnanensis* China. H&S1948, (Bean I lib)
- Berzelia: Bruniaceae (1+0)*
lanuginosa S.Africa. H 1957, (Hortus 2)
- Betula: Betulaceae (13+5)*
albo-sinensis China. H&S1946,48, (Bean S lib). Hill1964, (RHS1).
 + *albo-sinensis* var. *septentrionalis* China. H&S1946, (Bean S lib)
 + *alaskana* (*papyrifera* var. *humilis*, *neoalaskana*) N.America. H&S1948, (Bean I lib)
andrewsii America. H&S1948, (Bean I lib)
chinensis China, Korea, Japan. Hill1964, (RHS1).
cylindrostachya (*alnoides* var. *cylindrostachya*) Yunnan to India. H&S1964, (Bean, EWH)
davurica China, Korea. (Catalogue 1980)
delavayi var. *forrestii* (*forrestii*) Yunnan. Hill1964, (Bean EWH)
 + *ermanii* Japan, Korea. 1957, (Bean, EWH)
ermanii nipponica (Name not confirmed) H&S1947, (Bean I lib)
ermanii var. *subcordata* Japan. H&S1950, (Bean I lib). H1966, (RHS1).
 + *x fetizowii* Hort. 1957, Circus, (Bean, EWH). H1966, (RHS1).
humilis Europe, N.Asia. Hill1966, (RHS1).
 + *jacquemontii* Himalaya. 1957, (Bean, EWH)
 + *japonica* (*platyphylla* var. *japonica*) Japan. S1938, (Bean S lib)
 + *japonica* var. *szechuanica* (*platyphylla* var. *szechuanica*) China. H&S1947, (Bean S lib)
 + *japonica* var. *mandshurica* (*platyphylla* var. *japonica*) Japan. H&S1939, (Bean S lib)
 + *lenta* N.America. H&S1947, (Bean I lib)
lilacina (Name not confirmed) (Bean, EWH)
 + *lutea* (*alleganiensis*) N.America. H&S1947, Massey1948, different; (Bean I lib)
mandshurica (*platyphylla* var. *mandshurica*) H&S1950, (Bean I lib)
 + *maximowicziana* Japan. H&S1939,46,50, (Bean I lib)

- + *medwediewii* Transcaucasus. H&S1947, (Bean I lib). Hill1964, (RHS1).
 + *middendorffii* Siberia, Amur. Hill1964, (RHS1).
 + *nigra* N.America. H&S1947, (Bean I lib). Hill1966, (RHS1).
 + *papyrifera* N.America. H? 1934, (Bean I lib)
papyrifera macrophylla (Name not confirmed) H&S1964, (Bean, EWH)
 + *pendula* Europe.
 + 'Darlecarlica' H&S1939, (Bean I lib); H&S1964, (Bean, EWH)
 + 'Fastigata' H&S1939, (Bean I lib)
 + 'Gracilis' H1966, (RHS1).
 + 'Purpurea' Horton1914, (Bean I lib)
 + 'Tristis' H&S1964 (Bean, EWH). H1966, (RHS1).
 + 'Youngii' H&S1939, (Bean I lib)
 + *populifolia* N.America. S1938, H&S1948, (Bean I lib)
 + 'Laciniata' H 1937, (Bean I lib)
 + *schmidtii* Japan, Korea, China. H&S1946,48, (Bean S lib)
 + *ulmifolia (grossa)* Japan. S1938, (Bean I lib)
 + *utilis* Himalaya, Kashmir. H&S 1937, (Bean I lib)
yun 4547 S1940, (Bean I lib)

Bignonia: Bignoniaceae*grandiflora* see *Campsis grandiflora* China. (Cook 1965)***Billardiera: Pittosporaceae (1+0)****longifolia* Australia. D, (Bean I lib)***Bomarea: Amaryllidaceae (1+0)***

- +
- multiflora*
- Columbia. D1947, (Bean S lib)

werklei Costa Rica. D1947, (Bean S lib)***Boronia: Rutaceae (4+0)****elatior* Australia. (Cook 1965)*heterophylla* Australia. (Cook 1965). D&D1959, (RHS1).*megastigma* Australia. (Cook 1965), D&D1945 (Bean I lib)*pinnata* Australia. (Cook 1965)***Bougainvillea: Nyctaginaceae (0+5)****x buttiana* 'Mrs Butt' D1947, (Bean S lib)

'Marada' (Name not confirmed) D1947, (Bean S lib)

'Orange King' (Name not confirmed) D1947, (Bean S lib)

'Thurleys Special' (Name not confirmed) D1947, (Bean S lib)

'Wallflower' (Name not confirmed) D1947, (Bean S lib)

Bouvardia: Rubiaceae (1+0)*humboldtii (longiflora)* Mexico. D1947, (Bean I lib)***Bowkeria: Scrophulariaceae***

- +
- gerardiana*
- S.Africa. 1957, (Bean, EWH)

Braebelum: Proteaceae (1+0)*stellatifolium* S.Africa. W1937, D1937, (Bean S lib)***Brachychiton: Asteraceae (1+0)***

- +
- acerifolius (Sterculia a.)*
- Australia. HZ1949, (Bean I lib)

luridus (discolor, Sterculia discolor) Australia. HZ1949, (Bean I lib)

Brachysema: Fabaceae - Papilionaceae (1+0)

lanceolatum Australia. HZ1949, (Bean I lib)

Brassaia: Araliaceae (1+0)

actinophylla (Schefflera actinophylla) Australia. HZ1949 (Bean I lib)

Brunfelsia: Solanaceae (2+0)

americana W.Indies. HZ1949, (Bean I lib)

latifolia Brazil. D1946, (Bean I lib)

Buddleia: Loganiaceae (8+13)

+ *alternifolia* China. H1934, S1937, D1942, H1942. (Bean S lib)

asiatica India. H&S1947, (Bean I lib)

+ *auriculata* S.Africa. H&S1947, (Bean S lib)

candida Himalaya. H&S1947, (Bean S lib)

colvilei 'Kewensis' Himalaya. H&S1948, (Bean I lib)

colvilei 'Rosea' (Name not confirmed) H&S1937, (Bean I lib)

+ *crispa* India. H&S1948, (Bean S lib)

+ *dauidii (variabilis)* China.

+ *'Black Knight'* Hill1964, (RHS1).

'Etoile de France' S1938, (Bean I lib)

'Hollards Red' (Name not confirmed)

'Hollards Supreme' (Name not confirmed)

var. magnifica

var. nanhoensis A1939, (Bean I lib)

'Pale Skies' (Name not confirmed) (Cook 1965)

'Pink Pearl' D1947, (Bean I lib)

'Powder Blue'

'Rosea Floribunda' (Name not confirmed) (Bean, EWH), H&S1947, (Bean I lib)

'Royal Red' (PPL)

'Seitekiana' (Name not confirmed)

+ *fallowiana* China. H&S1947, (Bean S lib)

'Alba' H&S1947, (Bean S lib)

+ *farrerri* China. S1935,37 W1937, (Bean S lib)

lindleyana China. (Bean I lib)

+ *madagascariensis* Madagascar. D1947,1942, (Bean I lib)

myriantha China. H&S1947, (Bean S lib)

+ *pterocaulis* Himalaya, Burma. H1&S947, (Bean I lib)

+ *salviifolia* S.Africa. planted garden, (Bean, EWH)

stenostachya China. RHSseed1944, (Bean S lib)

sterniana China. H&S1948, (Bean S lib)

variabilis see *dauidii*

x weyeriana 'Gold Glow' (*dauidii* var. *magnifica* x *globosa*) Hort. H&S1946, (Bean S lib)

Bupleurum: Apiaceae (1+0)

fruticosum Europe. RHS1944, (Bean I lib)

Buxus: Buxaceae (1+0)

balearica Spain. H&S1946, (Bean I lib)

+ *sempervirens 'Argentea'* Europe. D1941, (Bean I lib)

Caesalpinia: Fabaceae - Caesalpinaceae (2+0)*coriaria* Tropical America. HZ 1949, (Bean I lib)*gilliesii* Argentina. 1946, (Bean I lib)**Calliandra: Fabaceae - Mimosaceae**+ *portoricensis* Mexico, W.Indies. D1931,41, (Bean I lib)**Callicarpa: Verbenaceae (1+0)***americana* N.America. D1935, (Bean I lib)+ *giraldii* (*bodinieri* var. *giraldii*) China. H1935, D1935,45; (Bean S lib)+ *japonica* Japan. D1935, (Bean I lib)+ *purpurea* (*dichotoma*) Korea, Japan. D1939-46, (Bean I lib)**Callicoma: Cunoniaceae**+ *serratifolia* Australia. D1944/47, (Bean I lib)**Callistemon: Myrtaceae (1+1)**+ *citrinus* (*lanceolatus*) Australia. 1938, (Bean S lib)‘*Splendens*’ D1945, (Bean I lib)+ *linearis* Australia. D1948, (Bean I lib)*pallidus* Australia. W1937, (Bean I lib)+ *phoeniceus* Australia. RHS, (Bean I lib)+ *salignus* Australia. D1937, (Bean I lib)+ *speciosus* Australia. 1938, (Bean S lib)**Callitris: Cupressaceae (4+0)**+ *arborea* (*Widdringtonia juniperoides*) S.Africa. S1937, (Bean S lib)*cupressiformis* (*rhomboidea*) Australia. S1933, (Bean S lib). 1930, (Bean S lib)*macleayana* Australia. (Cook 1965)*quadrivalvis* (*Tetraclinus articulata*) Spain, Malta, N.Africa. (Cook 1965). 1933, (Bean S lib)*oblonga* Tasmania. H&S1948, (Bean S lib)**Calluna: Ericaceae (1+7)***vulgaris* Britain. (PPL)‘*Allportii*’ (PPL)‘*Argentea*’ D&D1938, (Bean I lib)‘*Aurea*’ D&D1938, (Bean I lib)‘*H.E.Beale*’ (PPL)‘*J.H.Hamilton*’ (PPL)‘*Mimina*’ (PPL)‘*Mullion*’ D&D1939, (Bean I lib)**Calycanthus: Calycanthaceae**+ *floridus* N.America. Hill1964, (RHS1).+ *occidentalis* N.America. H&S1964, (Bean, EWH)**Calytrix: Myrtaceae (2+0)***mitchelliana* Australia. (Cook 1965)*sullivanii* Australia. (Cook 1965)**Camellia: Theaceae (138=2+136)**+ ‘*Cornish Snow*’ (*saluenensis* x *cuspidata*) Hort. H&S1948, (Bean S lib)‘*Fair Lass*’ (*reticulata* x *saluenensis*). blackwater, (Cook 1965).*fraterna* China. (Cook 1965).

franchetiana (Name not confirmed) RHS seed 1946, (Bean S lib)

higo types

‘Golden Temple’ see ‘Hatsu zakura’

‘Hatsu zakura’ (‘Golden Temple’, ‘Daitairin’) (Cook 1965).

+ ‘Hi No Hakama’ H1939, (Bean I lib)

+ ‘Hi No Maru’ IH1945, (Bean I lib)

+ ‘Inamorata’ (Name not confirmed). opp car shed, (Cook 1965).

+ ‘Inspiration’ (*reticulata x cuspidata*). (Cook 1965).

japonica Korea, Japan.

‘Adolphe Andusson’ H1939, (Bean I lib)

+ ‘A.M.Hovey’ (Name not confirmed). D&D1939, (Bean I lib)

‘Anemoneflora Alba’ (‘White Waratah’) (Cook 1965).

‘Anne Layard’ (Name not confirmed). (Cook 1965).

‘Apollo’ (Name not confirmed). Blackwater, (PPL).

+ ‘Arajishi’ (‘Beni-arajishi’) H1940,46,47, (Bean I lib)

‘Archduchess Augusta’ (Name not confirmed). (Cook 1965).

‘Arkisanzan’ (Name not confirmed). (Cook 1965).

+ ‘Aspasia’ H1940, (Bean I lib)

‘Australis’ (Cook 1965).

‘Beacon’ (Name not confirmed). (Cook 1965).

‘Berenice Boddy’ garden, (Cook 1965).

‘Bicolor de la Reine’ (Name not confirmed). (Cook 1965).

+ ‘Bonomiana’ at Bills, (Cook 1965) (Bononia of the current catalogue?).

‘Brenda’ (Name not confirmed). (Cook 1965).

‘Candidissima’ (Bean I lib)

+ ‘Carnation Pink’ (Name not confirmed). (Bean I lib)

‘Caroline Tuttle’ (Name not confirmed). (Cook 1965).

+ ‘C.H.Hovey’ H1945, Wilson1939, D&D1946, Webb1935, (Bean I lib)

‘Chandleri Elegans’ (‘Elegans’) H1939, (Bean I lib)

‘Chihu Hiku’ (‘Kiku’) (Name not confirmed). (Cook 1965).

‘Chitosigeba’ (Name not confirmed). (Cook 1965).

‘Comte de Tol’ (Name not confirmed). (Cook 1965).

‘Comtesse du Wainut’ (Name not confirmed). (Cook 1965).

‘Comtesse Necini’ (Name not confirmed). (Cook 1965).

‘Constance’ (Cook 1965).

‘Contessa Lavinia Maggi Rosea’ (Name not confirmed). (Cook 1965) (Could this be
‘Paolina Maggi Rosea’ which is ‘Mrs Henry Boyce’.

‘Contessa Tozzoni’ (Name not confirmed). (Cook 1965).

‘Contessa Tozzoni var Rosea’ (Name not confirmed). (Cook 1965).

‘Countess of Ellesmere’ (Name not confirmed). (Bean I lib)

‘Countess of Orkney’ (Cook 1965).

‘Countess of Orkney Rosea’ (Name not confirmed). (Cook 1965).

‘Crimson Cup of Beauty’ (‘Kimberley’) (Name not confirmed). aspasia bed, (Cook 1965).

Dark red frilled edge (Name not confirmed). (Bean I lib)

‘Dawn’ (‘Akebono’) (Cook 1965).

- + **'Deep Pink Salmon'** (Name not confirmed). (Bean I lib)
'Dionysia Poniatowski' (Cook 1965).
'Donckelarii' H1937, (Bean I lib)
'Double Pale Pink' (Name not confirmed). (Bean I lib). Pine bank below beeches, (Cook 1965).
'Double Pink' (Name not confirmed). behind cabin, (Cook 1965).
'Double Pink Special Masons' (Name not confirmed). (Bean I lib)
'Double Pink Tippins' (Name not confirmed). (Bean I lib)
- + **'Double Rose Pink'** (Name not confirmed). (Bean I lib)
'Dr Covedale' (Name not confirmed). Douglas Park, (PPL).
'Dr King' backyard near tanks, (Cook 1965).
- + **'Duchess of York'** (**'Lady Loch'**, **'Edward Billing'**) (Bean I lib)
'Duke of York' (**'Otahuhu Beauty'**) D&D1945, (Bean I lib)
- + **'Edward Billing'** (**'Lady Loch'**, **'Duchess of York'**) D&D1935,39,45,46, (Bean I lib)
'Edward Cole' (Name not confirmed). (Cook 1965).
'Elisabeth' lookout gully, (Cook 1965).
'Emporer' (Name not confirmed). (Bean I lib)
'Eryldine' (**'Eugene Lize'**) (Cook 1965).
'Eugenie de Massena' (Cook 1965).
'Eva' (Name not confirmed). (Cook 1965).
'Fanny Sachioli' (Name not confirmed). (Cook 1965).
'Fimbriata Alba' (**'Fimbriata'**) D&D1939, (Bean I lib)
'Fred Sanders' (**'Fimbriata Superba'**) H1939, (Bean I lib)
- + **'Gauntlettii'** (**'Alba Grandiflora'**, **'Sodekakushi'**) (Cook 1965).
'G.C.Linton' (Cook 1965).
'Gloire de Nantes' (Cook 1965).
'Gosho Guruma' (Cook 1965)
'Governor Earl Warren' on drive by scarlet vine, (Cook 1965).
- + **'Grandiflora'** D&D1940, H1937, S1937, (Bean I lib)
- + **'Great Eastern'** D&D1946, Wilson1946, H1940, (Bean I lib)
- + **'Great Eastern' (Australian)** near ponderosa lemon (Cook 1965).
'Guest of Honour' (Cook 1965).
'Hanapiki' (Name not confirmed, Hanafuki?). garden, (Cook 1965).
'Hanatasha Bowa' (Name not confirmed, Ha-natashawan-Bawa?). (Cook 1965).
- + **'Harriet Beecher Sheather'** H1945, (Bean I lib)
'Hashumishiro' (Name not confirmed). (Cook 1965).
- + **'Hassaku'** (**'Beni Hassaku'**) H1946, (Bean I lib). H1939, (Bean I lib)
- + **'Henri Favre'** H1940, (Bean I lib)
'High Hat' (Cook 1965).
- + **'Hikuru Gengi'** corner of white rail path, (Cook 1965).
'Hinemarie' (Name not confirmed, Hinomaru?). garden middle bed, (Cook 1965).
- + **'Isabella'** (Name not confirmed). (Isabel?) (Bean I lib)
'Jenny Jones' (Name not confirmed). (Cook 1965).
'June McCaskill' (Name not confirmed). (Cook 1965).
- + **'La Graciola'** (**'Odoratissima'**) D&D1942,46, IH1945, H1940, (Bean I lib)
- + **'Lady Audrey Buller'** (**'Nagasaki'**) (Cook 1965).

- + **'Lady Clare'** (**'Akashigata'**) D&D1939,42, H1937, (Bean I lib)
- 'Lady of the Lake'** (**'Francois Wiot'**) (Bean I lib)
- + **'Lady Parker'** (Name not confirmed). Wilson1939, D&D1939, (Bean I lib)
- 'Laurie Bray'** (Cook 1965).
- 'Lemichgerii'** (Name not confirmed). (Cook 1965).
- 'Light Pink'** (Name not confirmed). (Bean I lib)
- 'Lydia Shaw'** (Name not confirmed). (Bean I lib)
- 'Madame de Bisschop'** (Cook 1965).
- + **'Madame Pepin'** D&D1939, (Bean I lib)
- + **'Magnoliiflora'** S1945, (Bean I lib)
- + **'Magnoliiflora Alba'** (**'Miyako Dori'**) (Bean I lib)
- 'Marchioness of Exeter'** Webb, (Bean I lib)
- 'Mariana'** (**'Red Waratah'**) (Cook 1965).
- + **'Mathotiana'** D&D1942, D&D1939, (Bean I lib)
- 'Mercury'** H1950, (Bean I lib)
- 'Michata'** (Name not confirmed). below cabin carshed, (Cook 1965).
- + **'Mikanike'** (Name not confirmed). (Cook 1965).
- 'Mrs A.M.Hovey'** above redwood, (Cook 1965).
- 'Mrs Bell'** (Name not confirmed). (Cook 1965).
- 'Mrs Bertha A.Harmes'** (Cook 1965).
- 'Mrs Cook'** (Name not confirmed). H1945, (Bean I lib)
- 'Mrs Swan'** gardens, (PPL).
- 'Myrtifolia'** (Cook 1965).
- 'Nancy Bird'** (Cook 1965).
- 'Nina Avery'** (Cook 1965).
- + **'Nishiki'** (Name not confirmed). (Bean I lib)
- + **'Nonpareil'** (Name not confirmed). IH1945, (Bean I lib)
- 'Optima'** 1944, (Bean I lib)
- + **'Peach Blossom'** (**'Magnoliiflora' (UK)**) H1939, (Bean I lib). 1946, (Bean I lib)
- 'Pink Cap of Beauty'** (Name not confirmed). (Cook 1965).
- 'Pink Clouds'** (Name not confirmed). (Cook 1965).
- 'Pink Czar'** (Name not confirmed). IH1945, (Bean I lib)
- + **'Preston Rose'** (**'Duchess de Rohan'**) 1946, (Bean I lib)
- + **'Prince Albert'** (**'Albertii'**) (Bean I lib)
- + **'Prince Frederick William'** H1940, (Bean I lib)
- 'Prince of Orange'** (**'Crusader'**) (Cook 1965).
- + **'Purpurea'** (**'Fuyajo'**) H1946, (Bean I lib)
- 'Queen Bessie'** (Name not confirmed). Mrs Hindmarsh 1961, (Cook 1965).
- 'Red Czar'** (Name not confirmed). H1939, IH1945, (Bean I lib)
- 'Red Pressii'** (**'La Pace Rubra'**) (Bean I lib)
- + **'Red Waratah'** (**'Mariana'**) D&D1946, H1940, (Bean I lib)
- + **'Rose Pink Waratah'** (Name not confirmed). D&D1939, (Bean I lib)
- 'Ruth Kemp'** (Cook 1965).
- 'Seiji'** (Name not confirmed). (Cook 1965).
- + **'Shepherds Red'** (**'Speciosissima'**) (Bean I lib)

- 'Shira Siku' (Name not confirmed, Shiragiku=Purity ?) (Cook 1965).
 'Shimeo Tome' (Name not confirmed). (Cook 1965).
 'Shirobotan' (Name not confirmed). (Cook 1965).
 'Single Dark Red' (Name not confirmed). H1945, (Bean I lib)
 + 'Single Red' (Name not confirmed). S1939, (Bean I lib)
 + 'Sode Kakushi' ('Gauntletii', 'Grandiflora Alba', 'Yokohama') H1939, (Bean I lib)
 + 'Souvenir de Bahuand Litou' gardenbehind tulip beds, (Cook 1965).
 + 'Spencers Pink' H1947, (Bean I lib)
 'Sylvia' blackwater, (PPL)
 'The Bride' (Name not confirmed). backyard, (Cook 1965).
 + 'The Czar' D&D1939,42 (Bean I lib)
 'Tricolor' ('Sieboldii') (Cook 1965).
 'Triumphans' ('Lady Parker Peony') D&D1946, (Bean I lib)
 'Virginal' (Cook 1965).
 'Virginia Franco' (Cook 1965).
 'Vospers Rose' (Name not confirmed). (Cook 1965).
 'Waiwhetu Beauty' (Cook 1965).
 'White Pearl' (Name not confirmed). Durant 1961, (Cook 1965).
 'William Ball' (Name not confirmed). next to wrightii on back path, (Cook 1965).
 + 'Wrightii' D&D1939,46, (Bean I lib)
 + 'Yoibijin' H1939, IH1944,47, (Bean I lib)
 'Zambo' (Cook 1965).
 + *oleifera (drupifera)* China. H&S1947, (Bean S lib)
 + *reticulata* China. S1935, D1939, (Bean S lib)
 'Brian' (*reticulata* hyd). lookout gully, (Cook 1965).
 'Butterfly Wings' ('Houye Diechi') (Cook 1965).
 'Chango Temple' ('Zhangjia Cha') (Cook 1965).
 'Chrysanthemum Petal' ('Juban') (Cook 1965).
 'Crimson Robe' ('Dataohong') (Cook 1965).
 'Flora Plena' ('Robert Fortune', 'Pagoda'). (Cook 1965).
 'Lion Head' ('Shizitou') (Cook 1965).
 'Noble Pearl' (Cook 1965).
 'Professor Tsai' ('Maye Diechi') (Cook 1965).
 'Shot silk' ('Dayinhong') (Cook 1965)
 'Willow Wand' ('Liuye Yinhong') (Cook 1965).
 + *saluenensis* China. H&S1946, (Bean S lib)
 'Dr Doaks' (Name not confirmed). (Cook 1965).
 + *var. latifolia* (Name not confirmed). (Cook 1965). H&S1948, (Bean S lib)
 Pink form H&S1948, (Bean S lib)
 Red Form H&S1948, (Bean S lib)
 'Salutation' (*saluenensis x reticulata*). (Cook 1965).
sasanqua Japan.
 'Apple Blossom' ('Fukuzutsumi') H1939, (Bean I lib)
 + 'Azuma Nishiki' ('Eastern Brocade') D&D1938, (Bean I lib)
 + 'Charles Michael' (Cook 1965).

- 'Crimson King' D&D1947, (Bean I lib)
- + 'Hino Tsukama' (Name not confirmed). H1946, IH1945, (Bean I lib)
- + 'Hinotsukama' (Name not confirmed). gardens, (PPL).
- + 'Hiryu' ('Kanjiro') H1937, H1946, D&D1942, (Bean I lib)
- 'Hugh Evans' ('Hebe') blackwater (dead), (Cook 1965).
- 'Lavender Queen' (Cook 1965).
- 'Lucinda' (Cook 1965).
- 'Mihaka' (Name not confirmed). H1940, (Bean I lib)
- 'Mikumiko' ('Mikuni Ko', 'Empire Red') H1940, (Bean I lib)
- + 'Mine no Yuki' ('White Doves') D&D1942, (Bean I lib)
- 'Mishiki' (Name not confirmed). (Cook 1965).
- + 'Monogono' (Name not confirmed). Wilson1947, D&D1942, (Bean I lib)
- + 'Onigarona' (Name not confirmed). H1946, (Bean I lib)
- 'Shirobutan' (Name not confirmed). H1940, (Bean I lib)
- 'Shirowabasuki' (Name not confirmed). H1945,47, (Bean I lib)
- 'Showa-no-Sakae' ('Glory of Showa') (Cook 1965).
- 'Tarona' (Name not confirmed). IH1945, (Bean I lib). H1939, (Bean I lib)
- x williamsii*
- 'Bartley Pink' (Cook 1965).
- + 'Donation' garden, near big aspasia, (Cook 1965).
- 'Elizabeth Rothschild' (*saluenensis x japonica* 'Adolphe Andusson'). (Cook 1965).
- 'Fragrans' (Name not confirmed). (Cook 1965).
- 'Francis Hanger' (*saluenensis x japonica* 'Alba Simplex'). (Cook 1965).
- 'Hiraethlyn' (Cook 1965).
- + 'J C Williams' (*x williamsii* hyd) Hort. H&S1948, (Bean S lib)
- 'Mary Christian' lookout gully, (Cook 1965).
- Canarina: Campanulaceae (1+0)*
- campanulata* Canary Island. Mrs Taylor 1966, (RHS1).
- Cantua: Polemoniaceae (3+0)*
- bicolor* S.America. (Bean, EWH)
- buxifolia* Chile. (Bean, EWH)
- dependens* S.America. (Bean, EWH)
- Caragana: Fabaceae - Papilionaceae (3+1)*
- arborescens* Siberia, Manchuria. D1938, (Bean I lib)
- arborescens* 'Lorbergii' H&S1939, (Bean I lib)
- franchetiana (gerardiana var. glabrescens)* China. RHS1946, (Bean S lib)
- microphylla* Siberia, China. H&S1937, (Bean I lib)
- Carmichelia: Fabaceae - Papilionaceae (3+0)*
- enysii* New Zealand. (Cook 1965). Hill1948, (Bean S lib)
- flagelliformis* New Zealand. (Cook 1965)
- petriei* New Zealand. (Cook 1965)
- Carpinus: Betulaceae (1+0)*
- + *caroliniana* N.America. H&S1947, (Bean I lib)
- laxiflora var. macrostachya* China. 1961, planted DP, (Bean, EWH)

Carpodetus: Saxifragaceae

- + *serratus* New Zealand. Hillier, (RHS1).

Carya: Juglandaceae

- + *olivaeformis (pecan, illinoensis)* N.America. D1940, planted GD 1960, (Bean I lib)

Caryopteris: Verbenaceae (3+0)

x clandonensis Hort. H&S1950, (Bean I lib)

incana China. H&S 1950, (Bean I lib)

tangutica China. H&S1947, (Bean S lib)

Casimiroa: Rutaceae (1+0)

edulis Central America. (Cook 1965). seed1958, (RHS1).

Cassandra: Ericaceae (1+0)

calyculata (Chamaedaphne calyculata) N.America. D1936, (Bean I lib)

Cassia: Fabaceae - Caesalpinaceae (7+1)

alata Tropical America. seed1962, (RHS1).

angulata Brazil. seed1963, (RHS1).

australis (odorata) Australia. D1947, (Bean I lib)

bicapsularis (candolleana) Tropical America. D1946, (Bean I lib). HZ1949, (Bean I lib)

corymbosa Argentina. H&S1947, (Bean I lib)

‘John Ball’ 1957, (RHS1).

didymobotrya Tropical Africa. HZ1949, (Bean I lib)

grandis Tropical America. seed1963, (RHS1).

Cassinia: Asteraceae (1+0)

leptophylla New Zealand. (Catalogue 1980)

Castanea: Fagaceae (4+3)

alnifolia N.America. H&S1948, (Bean S lib)

- + *crenata* Japan. H&S1948, (Bean I lib)

dentata N.America. H&S1948,50, (Bean I lib)

henryi China. H&S1947, (Bean S lib)

mollissima China. H&S1947, (Bean S lib)

sativa ‘Albomarginata’ Asia minor, Europe, N.Africa. H&S1947, (Bean I lib)

sativa ‘Heterophylla’ H&S1946, (Bean I lib)

sativa ‘Marron de Lyon’ (‘Macrocarpa’) H&S1948, (Bean I lib). H&S1947, (Bean S lib)

visca see *sativa*

Castanopsis: Fagaceae (2+0)

chrysophylla (Chrysolepis chrysophylla) California. H&S1946, (Bean I lib)

cuspidata (Quercus cuspidata) China, Korea. From current catalogue.

Castanospermum: Fabaceae - Papilionaceae

- + *australe* Australia. HZ1949, (Bean S lib)

Casuarina: Casuarinaceae (2+0)

glauca Australia. H1940, (Bean I lib)

stricta Australia. IH1914, (Bean I lib)

Catalpa: Bignoniaceae (1+0)

- + *bignonioides* N.America. Horton 1921, (Bean I lib)

- + ‘Aurea’ W1937, (Bean I lib)

- + *bungei* China. S1940, (Bean I lib)

- + *ovata* China. S1940, (Bean, EWH), (Bean I lib)

speciosa N.America. S1937, (Bean I lib)

Ceanothus: Rhamnaceae (16+9)

‘**A T Johnson**’ Hort. H1940, (Bean I lib)

arboreus California. S1935, D1937,41, (Bean S lib)

austromontanus (now part of *foliosus*) California. H&S1948, (Bean I lib)

azureus (coeruleus) Mexico, Guatemala. W1947, (Bean I lib)

candoleanus (Name not confirmed) H&S1948, (Bean I lib)

‘**Burkwoodii**’ (‘*Floribundas*’ x ‘*Indigo*’). Hort. D1945, (Bean I lib)

+ *cyaneus* N.America. S1937, (Bean S lib)

‘**Delight**’ (*papillosus* x *rigidus*) Hort. H&S1948, (Bean I lib)

x delilianus (americanus x coeruleus). Hort.

+ ‘**Gloire de Versailles**’ D1942,47, (Bean I lib)

‘**Indigo**’ (Bean I lib)

‘**Marie Simon**’ D1942, (Bean I lib)

‘**Richesse**’ (Cook 1965). D&D1959, (RHS1)

dentatus California. W1939, (Bean I lib)

var. floribundas D1939, (Bean I lib)

‘**Floridus**’ (Name not confirmed) A1939, (Bean I lib)

‘**Dignity**’ Hort. H1940, (Bean I lib)

edwardsii (Name not confirmed) D1937, Wilson 1939, (Bean I lib)

foliosus N.America. (Cook 1965)

+ *impressus* N.America. S1939, (Bean I lib). D&D1959, (RHS1).

jepsonii California. H&S1948, (Bean I lib)

parryi California. (Cook 1965)

parvifolius California. (Cook 1965)

prostratus California. H&S1948, (Bean S lib)

purpureus California. H&S1948, (Bean S lib)

+ *rigidus* N.America. H1934, S1935,37, (Bean I lib)

‘**Russelianus**’ (*x lobbianus* ‘**Russelianus**’) California. Slocock1938, (Bean S lib)

thyriflorus California. H1934, D1941, H1943,46; (Bean I lib)

thyriflorus var. griseus (griseus) California. (Cook 1965)

x veitchianus (rigidus x griseus). California. (Cook 1965)

Cedrela: Meliaceae

+ *sinensis (Toona sinensis)* China. Slocock 1938, HZ1949, (Bean I lib)

Cedrus: Pinaceae (0+5)

+ *atlantica* N.Africa.

+ ‘**Aurea**’ H&S1946,48,50, (Bean I lib)

‘**Fastigata**’ H&S1948, (Bean I lib)

+ *f.glauca* many imports, (Bean I lib)

‘**Pendula**’ H&S1948, (Bean I lib)

verticillata (Name not confirmed) A1928, W1946, H1946 the latter planted on woodshed hill
(Bean I lib)

+ *deodara* Himalaya. D1942, (Bean I lib)

‘**Albospica**’ H&S1948, (Bean I lib)

+ ‘**Aurea**’ D1937, H1946, (Bean I lib)

+ ‘**Robusta**’ H&S1948, (Bean I lib)

- 'Verticillata'** H&S1948, (Bean I lib)
- + *libani* var. *brevifolia* (*brevifolia*) Cypress. H&S1948, (Bean I lib)
- + *libani* 'Sargentii' Lebanon. H&S1950, (Bean I lib)
- Celastrus: Celastraceae (1+0)**
- + *rosthornianus* China. H&S1946, (Bean S lib)
- scandens* N.America. D1942, (Bean I lib)
- Celtis: Ulmaceae (1+0)**
- + *occidentalis* Hill1965, (RHS1).
- reticulata* N.America. (Bean, EWH)
- Cephalotaxus: Taxaceae (2+0)**
- + *fortunei* China. D1942,45,47, (Bean I lib)
- koreana* (*harringtonia koreana*) Japan. Circus, (Bean, EWH)
- pedunculata fastigata* (*Podocarpus koreanus*) (Name not confirmed)
- HZ1949, (Bean I lib)
- Ceratonia: Fabaceae - Caesalpinaceae**
- + *siliqua* Meditt. HZ1949, (Bean I lib)
- Ceratopetalum: Cunoniaceae**
- + *gummiferum* Australia. D1942, (Bean S lib)
- Ceratostigma: Plumbaginaceae (2+0)**
- griffithii* Himalaya, Yunnan. (Cook 1965)
- minus* China. H&S1947, (Bean S lib)
- + *willmottianum* China. H1947, (Bean S lib)
- Cercidiphyllum: Cercidiphyllaceae**
- + *japonicum* var. *sinense* China. S1935,37,39, (Bean S lib)
- Cercis: Fabaceae - Papilionaceae**
- + *canadensis* N.America. S1937, (Bean I lib)
- + *chinensis* China. D1934,48, (Bean I lib)
- + *racemosa* China. S1938,39,H&S1947, (Bean I lib)
- Cestrum: Solanaceae (2+0)**
- + *aurantiacum* Guatamala. 1957, (Bean, EWH)
- + *elegans* (*purpureum*) Mexico. (Cook 1965)
- parqui* Chile. H&S1950, (Bean S lib)
- species B4367* S1940, (Bean S lib)
- Chaenomeles: Rosaceae (2+22)**
- + *cathayensis* (*Cydonia cathayensis*) China. S1937,40, (Bean I lib)
- japonica* (*Cydonia japonica*) Japan.
- 'Alarm' (Name not confirmed). D&D1946, (Bean I lib).
- 'Double large pink' (Name not confirmed). H1936, (Bean I lib)
- 'macrocarpa' (Name not confirmed) Wilson 1939, D&D 1946, (Bean I lib).
- 'Salmon' (Name not confirmed). H1946, (Bean I lib)
- 'Winter Cheer' (Name not confirmed). H 1937, (Bean I lib)
- maulei* IH1937, (Bean I lib)
- + *speciosa* (*Cydonia speciosa*) China.
- 'Atrococcinea' D&D1939, (Bean I lib).
- 'Aurora' D&D1946, Hill1946, (Bean I lib)
- + 'Falconet Charlotte' H1937 (Bean I lib)

- 'Mallardii' D&D1945 (Bean I lib)
- 'Nivalis' H 1920, (Bean I lib)
- 'Orange Glow' (Name not confirmed). (PPL)
- 'Pink Perfection' (PPL). (Cook 1965). D&D1945, (Bean I lib)
- 'Rosea Grandiflora' (Name not confirmed). (Cook 1965), Wilson 1939, (Bean I lib).
- 'Rosea Flore Plena' ('Rosea Plena' ?) S 1939, (Bean I lib)
- 'Rubra' (Name not confirmed). Wilson 1939, (Bean I lib)
- 'Rubra Grandiflora' H1937, (Bean I lib)
- 'Simonii' (Cook 1965)

x superba (*japonica x speciosa*). Hort. (Cook 1965)

- 'Alba' D&D1946, (Bean I lib)
- 'Crimson and Gold' (PPL)
- 'Knap Hill Scarlet' (Cook 1965). K1937, (Bean I lib).
- 'Rowellane' H&S1946, (Bean S lib)
- 'Yaegatum' ? (Name not confirmed). H1946, (Bean I lib)
- 'Yaegiki' (Cook 1965), H1946, (Bean I lib).

Chamaecyparis: Cupressaceae (1+48)

+ *lawsoniana* N.America.

- 'Allumi' D1937, (Bean I lib)
- 'Aurea' D1946, (Bean I lib)
- 'Blue Jacket' (RHS1).
- 'Drummondii' (Name not confirmed) (PPL)
- + 'Duncanii' D1937,46, (Bean I lib)
- 'Ellwoodii' H1947, (Bean I lib)
- 'Erecta Alba' H&S1950, (Bean I lib)
- 'Erecta Aurea' D1937, (Bean I lib)
- 'Erecta Viridis' D1946, (Bean I lib)
- + 'Filifera' D1937, (Bean I lib)
- + 'Filifera Aurea' (Name not confirmed) D1937, (Bean I lib)
- 'Filifera Compacta' (Name not confirmed) D1937,45, (Bean I lib)
- 'Filiformis Elegans' (Name not confirmed) (PPL)
- + 'Fletcheri' D1937,45,46,47, (Bean I lib)
- 'Forsteckeriana' D1937, (Bean I lib)
- 'Fraseri' D1937,43,45,47, (Bean I lib)
- 'Glauca Veitchi' D1937, (Bean I lib)
- 'Golden King' H&S1948, (Bean I lib)
- 'Gracilis Pendula' H&S1948, (Bean I lib)
- 'Hillieri' D1937, (Bean S lib)
- 'Juvenila Stricta' Wilson1947, (Bean I lib)
- + 'Lutea' D1934,37, (Bean I lib)
- 'Lutea Nana' H&S1948, (Bean I lib)
- + 'Lycopodioides' D1946?, (Bean I lib)
- 'Lycopodioides Aurea' (Name not confirmed) (Bean I lib)
- 'Milford Blue Jacket' (Name not confirmed) D1937, (Bean I lib)
- + 'Minima' D1943, (Bean I lib)

- ‘**Minima Aurea Densa**’ (Name not confirmed) H&S1948, (Bean I lib)
 ‘**Minima Rogersii**’ (Name not confirmed) H&S1948, (Bean I lib)
 + ‘**Naberi**’ D1947, (Bean I lib)
 ‘**Pendula**’ H&S1948, (Bean I lib)
 + ‘**Pottenii**’ D1942, (Bean I lib)
 ‘**Pyramidalis Alba**’ H&S1948, (Bean I lib)
 ‘**Silver Queen**’ D1939, (Bean I lib)
 ‘**Stewartii**’ D1947, H1933, (Bean I lib)
 ‘**Triomphe de Boskoop**’ (Bean I lib)
 ‘**Weeping Threads**’ (Name not confirmed) (PPL)
 ‘**Wisselii**’ (PPL)
nootkatensis N.America. (PPL)
 ‘**Compacta**’ H&S?, (Bean I lib)
 ‘**Glauca**’ H&S1948, (Bean I lib)
 ‘**Lutea**’ (PPL)
obtusa Japan, Taiwan.
 ‘**Alba Spicata**’ (Cook 1965)
 + ‘**Aurea Youngii**’ (Name not confirmed) D1937,45, (Bean I lib)
 ‘**Compacta**’ (Name not confirmed) (Cook 1965)
 ‘**Filicoides**’ (PPL)
 ‘**Formosana**’ H&S1950, (Bean I lib)
 ‘**Gracilis Aurea**’ (Cook 1965)
 ‘**Lycopodioides**’ (Cook 1965)
 ‘**Minima**’ (Cook 1965)
 + ‘**Nana**’ D1937,45, (Bean I lib)
 + ‘**Nana Aurea**’ D1937,45, (Bean I lib)
 ‘**Nana Intermedia**’ (Name not confirmed) H&S1948, (Bean I lib)
 ‘**Nana Juniperoides**’ (Name not confirmed) H&S1948, (Bean I lib)
 + *pisifera* Japan. D1945, (Bean I lib)
 + ‘**Aurea**’ D1941, (Bean I lib)
 ‘**Aurea Compacta**’ (Name not confirmed) D1937,45, (Bean I lib)
 ‘**Edgintonii**’ (Name not confirmed) D1946, (Bean I lib)
 + ‘**Plumosa**’ D1941, (Bean I lib)
 ‘**Plumosa Albo Picta**’ D1941, (Bean I lib)
 + ‘**Plumosa Aurea**’ T1941, (Bean I lib)
 + ‘**Squarrosa**’ D1937,42, (Bean I lib)
 ‘**Squarrosa Intermedia**’ (Cook 1965)
 ‘**Squarrosa Sulphurea**’ D1937-46, (Bean I lib)
 ‘**Squarrosa Veitchii**’ (Name not confirmed) (PPL)
 + *thyoides* ‘**Ericoides**’ N.America. D1937, (Bean I lib)
thyoides leptoclada (Name not confirmed) (PPL)
Chiliotrichum: Asteraceae (1+0)
amelloides S.America. Hill1964, (RHS1).

Chimonanthus: Calycanthaceae (0+2)

- + *fragrans (praecox)* China. D1937,45, (Bean I lib)
 ‘**Luteus**’ (Cook 1965)
 Stevens type (Name not confirmed). S 1937, (Bean I lib)

Chionanthus: Oleaceae (0+1)

- + *retusus* Korea, Japan. H&S1946, (Bean I lib)
 retusus Forrests form H&S1947, (Bean I lib)
 + *virginicus* N.America. D1937, (Bean I lib)

Chordospartium: Fabaceae - Papilionaceae (1+0)

stevensonii New Zealand. H1934,35, (Bean S lib)

Chorizema: Fabaceae - Papilionaceae (3+0)

cordatum Australia. D1942, (Bean I lib)
ilicifolium Australia. D1942, (Bean I lib)
varium Australia. D1942, (Bean I lib)

Cinnamomum: Lauraceae (1+0)

- + *camphora* E.Asia, Africa. D1946, (Bean S lib)
glanduliferum China. Hill1964, (RHS1)

Cistus: Cistaceae (16+6)

- alyssoides* see *Halimium alyssoides* (Cook 1965)
albidus S.W.Europe, N.Africa. (Cook 1965)
algarvensis see *Halimium ocymoides* (PPL)
alpestris see *Halimium alpestre* Balkans.
x aquilari (*ladanifer x populifolius* var. *lasiocalyx*) Spain, Morocco.
 ‘**Maculatus**’ H&S1948, (Bean I lib)
x canescens (*albidus x creticus*) Algeria.
 ‘**Albus**’ H&S1948, (Bean I lib)
crispus Europe. H1939, (Bean I lib)
x cyprius (*ladanifer x laurifolia*). France, Spain.
 ‘**Albus**’ H&S1948, (Bean I lib)
 ‘**Albiflorus**’ S1948, (Bean I lib)
x florentinus (*monspeliensis x salviifolius*) Europe. S1935, (Bean I lib)
formosus (*Halimium lasianthum* ssp. *formosum*) Mediterranean. (Cook 1965)
gallipoli (Name not confirmed) D1942, (Bean I lib)
hirsutus Spain, France. D1937, (Bean I lib)
ladanifer ‘**Maculatus**’ Europe. D1937, (Bean I lib)
laurifolius Europe. D1942, (Bean I lib)
x loretii (*stenophylla*) (*ladanifer x monspeliensis*) Europe. D1937, (Bean I lib)
x lusitanicus (*ladanifer x hirsutus*). Portugal. Hort. D1942, (Bean I lib)
palhinhae Portugal. H&S1948, (Bean I lib)
psilosepalus (*hirsutus* var. *psilosepalus*) Spain, Portugal. Hill1948, (Bean I lib)
populifolius Europe. H&S1948, (Bean I lib)
populifolius var. *lasiocalyx* Spain, Portugal, Morocco. H1947, (Bean S lib)
x purpureus (*creticus x ladanifer*). Hort. S1935, D1942, (Bean I lib)
salviifolius Europe. D1937, (Bean I lib)
 + ‘**Silver Pink**’ (*laurifolius x creticus*). Hort. 1935,37, (Bean S lib)
 + ‘**Sunset**’ (*C x pulverulentus*) (*albidus x crispus*). S.W.Europe. (PPL)

- villosus (creticus)* Europe. D1937, (Bean I lib)
- Citiharexylem: Verbenaceae (1+0)**
- subseratum* S.America. HZ1949, (Bean I lib)
- Citrus: Rutaceae (2+7)**
- aurantium* Tropical Asia. (Cook 1965).
- limon* Asia.
- ‘Lisbon’ (Cook 1965)
- ‘Meyer’ (Cook 1965)
- x paradisi* W.Indies. (Cook 1965)
- + *sinensis* Asia. (Cook 1965).
- ‘Bests seedling’ (Name not confirmed). (Cook 1965).
- ‘Coltman Pomelo’ (Name not confirmed). (Cook 1965).
- ‘Jaffa’ (Name not confirmed). (Cook 1965).
- ‘Len Gin Song’ (Name not confirmed). (Cook 1965).
- ‘Michael’ (Name not confirmed). (Cook 1965).
- Cladrastis: Fabaceae - Papilionaceae (1+0)**
- + *sinensis* China. H&S1947, (Bean I lib)
- + *tinctoria (lutea)* N.America. Slocock1938, (Bean I lib)
- wilsonii* China. H&S1947, (Bean S lib)
- Clematis: Ranunculaceae (20+43)**
- afoliata (aphylla)* New Zealand. (Cook 1965)
- alpina* France, Balkans. H&S1939,46, (Bean I lib)
- alpina var. sibirica* Norway, Siberia, Manchuria. H&S1946, (Bean I lib)
- + *armandii* China. D1935,47, (Bean I lib)
- + ‘Apple Blossom’ H&S1948, (Bean I lib)
- ‘Farquhariana’ (Bean I lib)
- ‘Baron de Verdies’ (Name not confirmed) H1946, Walker 1946, (Bean I lib)
- buchananiana* Himalaya. (an incorrect ID for *C.rehderiana* according to Lloyd) (PPL)
- chrysocoma* China. H&S1948, (Bean I lib)
- + *cirrhusa* Spain, Israel. H1937, (Bean I lib)
- + *coccinea (texensis)* Texas. H1935, (Bean I lib)
- ‘Constance Bouchard’ (‘Comtesse de Bouchard’ ?) Walker 1946, (Bean I lib)
- ‘Cream Geganio’ (Name not confirmed) (Cook 1965)
- ‘Daniel Deronda’ (patens group). (PPL)
- ‘Duchess of Albany’ (texensis hyd). Hort. (Cook 1965)
- ‘Duchess of Edinburgh’ (florida gp). Hort. (Cook 1965)
- x durandii (integrifolia x jackmanii)* Hort. H1939, (Bean I lib)
- + ‘Fair Rosamund’ (patens group) Hort. H1946, (Bean I lib)
- floribunda* (Name not confirmed) H1946, (Bean I lib)
- + ‘Gipsy Queen’ (jackmanii group). Hort. 1939, (Bean I lib)
- henryi* China. H1946, (Bean I lib)
- + *indivisa (paniculata)* New Zealand. D1942,46, (Bean S lib)
- integrifolia* Europe, Asia. H1946, Walker 1946, (Bean I lib)

- xjackmanii* (*lanuginosa x viticella*). Hort. (Bean I lib)
 ‘**Jackmanii Alba**’ (Bean I lib)
 ‘**Jackmanii Rubra**’
 ‘**Jackmanii Superba**’ Walker 1946, (Bean I lib)
 ‘**Madame Edward Andre**’ (PPL)
 ‘**Mrs Chalmondely**’ (PPL) (Cook 1965)
‘**King George V**’ (*lanuginosa* group). (PPL)
‘**Lady Betty Balfour**’ (*viticella* gp). Hort. (Cook 1965)
‘**Lady Northcliffe**’ (*lanuginosa* gp). Hort. (Cook 1965)
lanuginosa group. China.
 ‘**Beauty of Worcestor**’ (PPL)
 ‘**Blue Gem**’ (PPL)
 ‘**Crimson King**’ (PPL). (Bean I lib).
+ ‘**Marie Boisselot**’ (‘**Madame le Coutre**’) (PPL)
 ‘**Sensation**’ (PPL)
 ‘**William Kennet**’ (PPL)
‘**Lasurstern**’ Hort. H&S1946, (Bean I lib)
x lawsoniana (*lanuginosa x patens*). Hort. Walker 1946, (Bean I lib)
lilacina ‘**Floribunda**’ (NNC) (Bean I lib)
‘**Lord Gifford**’ (Name not confirmed) (Cook 1965)
macropetela China. Kew1945, (Bean S lib)
‘**Madame Baron Villard**’ (*jackmanii* group). Hort. H&S1948, (Bean I lib)
‘**Madame Clare**’ (Name not confirmed) H1946, Walker1946, (Bean I lib)
‘**Madame Koster**’ (Name not confirmed) H&S1948, (Bean I lib)
‘**Marcel Moser**’ (*patens* group). (PPL)
markhamii (*macropetela* ‘**Markhamii**’?) (NNC) H&S1948, (Bean I lib)
meyeniana China. H&S1947, (Bean S lib)
montana ‘**Grandiflora**’ China, Himalaya. H&S1948, (Bean I lib)
‘**Mrs Hope**’ (*lanuginosa* group). Hort. H1946, (Bean I lib)
‘**Mrs Spencer Castle**’ (*viticella* hyd) Hort. (Cook 1965)
‘**Nelly Moser**’ (*lanuginosa* group). Hort. H&S1948, (Bean I lib)
+ *napaulensis* (*forrestii*) China, India. H&S1948, (Bean S lib)
patens Japan. H1939, (Bean I lib)
‘**Perle D’Azure**’ (*jackmanii* group). (PPL)
‘**Queen Alexandra**’ (Name not confirmed) Walker 1946, (Bean I lib)
rehderiana China. RHS seed 1944, (Bean I lib)
‘**Rose Fondat**’ (Name not confirmed) (Cook 1965)
‘**Royal Velours**’ (*viticella* hyd) Hort. (Cook 1965)
+ *serratifolia* Korea. RHSseed1944, H&S1946, (Bean S lib)
+ *sieboldii* (*florida* ‘**Sieboldii**’) Japan. H&S1948, (Bean I lib)
+ ‘**Sir Garnett Wolesley**’ (*patens* gp) Hort. H1946, (Bean I lib)
songarica Korea. H&S1946, (Bean I lib)
spooneri ‘**Rosea**’ W.China. H&S1946, (Bean S lib)
tangutica China. H&S1947, (Bean I lib)
tangutica var. *obtusiuscula* China. D1938, (Bean S lib)

- 'The President'** (patens group). Hort. H&S1948, (Bean I lib)
- + ***uncinata*** China. H&S1947, (Bean I lib)
- x vedrariensis*** (*chrysocoma x montana* var. *rubens*). Hort. H&S1947, (Bean S lib)
- + **'Ville de Lyon'** (viticella group). Hort. H&S1948, (Bean I lib)
- viticella* group** S.Europe.
- 'Ascotiensis'** (PPL)
- 'Duchess of Sutherland'** (PPL)
- 'Ernest Markham'** (PPL)
- 'Huldine'** (PPL)
- 'King George'**
- violacea* 'Rubra Marginata' (x *triternata* 'Rubra Marginata')** (*flammula x viticella*).
Hort. H&S1948, (Bean I lib)
- Clerodendron: Verbenaceae (2+0)***
- bungei* (foetidum)** China. Cook1944, (Bean I lib)
- + ***trichotomum*** Japan. 1921, (Bean I lib)
- ugandense*** E.Africa. W1939, HZ1949, (Bean I lib)
- Clethra: Clethraceae (4+1)***
- + ***alnifolia*** N.America. planted GD 1960, (Bean, EWH)
- 'Rosea'** H&S1946, (Bean I lib)
- arborea*** Madeira. W1937, (Bean I lib); D1939,45, (Bean S lib)
- asplenifolia*** (Name not confirmed) (PPL)
- + ***barbinervis*** Japan. D1937, H&S1948, (Bean I lib)
- delavayi*** China. H&S1946,48, (Bean S lib)
- + ***fargesii*** China. H&S1946, (Bean S lib)
- monostachya*** China. H&S1948, (Bean S lib)
- Cleyera: Theaceae (1+0)***
- fortunei*** Japan. H&S 1948, (Bean I lib)
- Coleonema: Rutaceae (1+0)***
- pulchrum*** S.Africa. D1939,41, (Bean S lib)
- Colletia: Rhamnaceae (1+0)***
- cruciata*** Uruguay. (Cook 1965)
- Colutea: Fabaceae - Papilionaceae (4+0)***
- arborescens*** Europe, Africa. W1949, (Bean I lib)
- x media*** (*arborescens x orientalis*). Europe, Africa. Seed 1948, (Bean I lib)
- melanocalyx*** Turkey. Seed1948, (Bean I lib)
- orientalis*** Caucasus. Seed1948, (Bean I lib)
- Combretum: Combretaceae (1+0)***
- loeflingi*** Tropical America. HZ1949, (Bean I lib)
- Comptonia: Myricaceae (1+0)***
- asplenifolia*** N.America. Hill1964, (RHS2).
- Cordyline: Agavaceae (3+1)***
- australis* 'Albo Variegata'** (Cultivar not confirmed) New Zealand. (Cook 1965)
- banksii*** New Zealand. (Cook 1965)
- indivisa*** New Zealand. D&D1937, (Bean S lib)
- pumila*** New Zealand. D&D1938, (Bean S lib)
- + ***terminalis*** Polynesia. D&D1938, (Bean S lib)

Coriaria: Coriariaceae (1+0)*japonica* Japan. Hill1946, (Bean I lib)**Cornus: Cornaceae (4+8)**+ *alba* Siberia to Korea. ‘**Argentea Variegata**’ (Name not confirmed) Slocock1938, (Bean I lib) ‘**Atrosanguinea**’ (‘**Sibirica**’) H&S1947, (Bean I lib) ‘**Gouchaulti**’ (RHS 2, EWH) ‘**Spaethii**’ Slocock1938, (Bean I lib), (RHS 2, EWH) ‘**Variegata Elegantissima**’ Slocock1938, (Bean I lib)*alternifolia* ‘**Variegata**’ N.America. H&S1939, (Bean I lib)*asperifolia* N.America. seed 1948, (Bean I lib)*baileyi* N.America. W1946, (Bean I lib), (RHS 2, EWH)*canadensis* N.America. H&S1948, (Bean I lib), (RHS 2, EWH)+ *chinensis* China. Hill1962, (RHS2).+ *controversa* Japan, China. in azalea border white gate, (Bean I lib)+ *florida* N.America. K1935, S1957, S1941; (Bean I lib)+ *florida f. rubra* N.America. 1936,45, (Bean I lib)*hemsleyi* China, 1954 Camellia bed, rhodo bay. (Bean I lib), (RHS 2, EWH)+ *kousa* Japan. S1935,37,41, (Bean I lib)+ *kousa var. chinensis* China. S1937, (Bean S lib)+ *macrophylla* Japan, China, Himalaya. H&S1947, (Bean I lib), (RHS 2, EWH)+ *mas* Europe, Caucasus. ‘**Aurea Elegantissima**’ H&S1946, (Bean I lib) ‘**Variegata**’ H&S1947, (Bean I lib)+ *nutallii* N.America. S1937,38,41, (Bean I lib)+ *officinalis* Japan. H1937, D1946, (RHS 2, EWH)+ *stolonifera* N.America. N1935, (Bean I lib), (RHS EWH)+ ‘**Flaviramea**’ H&S1947, (Bean I lib)**Corokia: Cornaceae (1+0)***x virgata* (*buddleiodes x cotoneaster*). New Zealand. (Cook 1965). Hill1948, (Bean S lib)**Coronilla: Fabaceae - Papilionaceae (3+0)***emerus* Europe. H&S1948, (Bean I lib)*glauca* (*valentina ssp. glauca*) Europe. H&S1948,50, (Bean S lib)*valentina* Spain. H&S1948,50, (Bean S lib)**Correa: Rutaceae (2+0)***alba* Australia. (Cook 1965)*speciosa* (*C.reflexa*) Australia. (Cook 1965)**Corylopsis: Hamamelidaceae (2+0)***platypetala* China. D1946, (Bean I lib)*sinensis* China. S1940, H&S1947, (Bean I lib)+ *spicata* Japan. D1945,46, (Bean I lib)+ *willmottiae* (*sinensis var. willmottiae*) China. D1944,46,47, (Bean I lib)**Corylus: Betulaceae (2+0)**+ *avellana* Europe. Horton 1918, (Bean I lib)*cornuta* N.America. (Bean, EWH)

- + *maxima* 'Purpurea' Europe, Asia minor. H&S1957, planted GD1960, (Bean, EWH)
tibetica China. (Bean, EWH)
- Corysema*: (1+0)
cordata (Name not confirmed) planted DP, (Bean, EWH)
- Cotoneaster*: *Rosaceae* (31+0)
- acuminatus* Himalaya. H&S1948, (Bean I lib)
adpressus China. S1939, (Bean I lib)
- + *amoenus* China. S1940, (Bean I lib)
applanatus (*dielsianus*)
- + *bullatus* 'Floribundas' China. H&S1946, (Bean I lib)
congestus (*microphyllus* var. *glacialis*) Himalaya. S1939, (Bean I lib).
- + *conspicuus* Tibet. H&S1948, Slocock1938, (Bean I lib)
damneri China. H&S1948, (Bean S lib)
dielsianus China. D1934, (Bean I lib). Slocock1938, (Bean I lib)
dielsianus var. *major* China. RHS seed, (Bean I lib)
divaricatus China. H&S1948, (Bean I lib)
foveolatus China. H&S1937, (Bean I lib)
- + *frigidus* Himalaya. H1945, (Bean I lib)
froebellii (Name not confirmed) S1937, (Bean I lib)
glaucophyllus China. H&S1937, rare red berry, (Bean I lib)
harrovianus China. D1935, seed1948, (Bean I lib)
henryanus China. Slocock1938, (Bean I lib)
- + *horizontalis* W.China. S1940, (Bean I lib)
humifusus (*damneri* ?) China. H&S1948, (Bean I lib)
integerrimus Europe. H&S1937, (Bean I lib)
- + *lacteus* China. H1934, (Bean S lib)
lindleyi (*insignis*) Iran, Turkestan. H&S1937, (Bean I lib)
microphyllus var. *glacialis* see *congestus*
moupinensis China. H&S1947, (Bean S lib)
multiflorus Caucasus, E.Asia. H&S1937, (Bean I lib)
- + *nitens* China. H&S1948, (Bean S lib)
nitidifolius China. H&S1948, (Bean S lib)
nummularius (*racemiflorus* var. *nummularius*) Caucasus, Himalaya. H&S1937, (Bean I lib)
obscurus China. H&S1948, (Bean S lib)
- + *pannosus* China. N1934, (Bean I lib)
prostratus.Baker. (*rotundifolius*.Wall ex Lindl.) Himalaya. H&S1947, (Bean I lib). S1938, (Bean I lib)
racemiflorus Africa, W.Asia, Tirkestan. H&S1937, (Bean I lib)
rotundifolius.Wall ex Lindl. see *prostratus*.Baker. Himalaya
rotundifolius.Wall ex Baker.
var. *tongolensis* (*distichus* var. *tongolensis*) China. RHS1948, (Bean I lib)
salicifolius China. 1945, (Bean I lib)
salicifolius rugosa henryi (Name not confirmed) Slocock1938, (Bean I lib)
salicifolius vicari (Name not confirmed) D1938, (Bean I lib)
sanfran (Name not confirmed, could this be *C.nanshan*=*adpressus* var. *praecox*. China)
D1942, (Bean S lib)
thymifolius (*microphyllus* var. *thymifolius*) Himalaya. H1934, (Bean I lib)

- tomentosus* Europe, Asia. H&S1948, (Bean I lib)
turbinatus China. H&S1948, (Bean I lib)
wardii Tibet. H&S1946,48,51, (Bean S lib)
+ *x watereri* (*frigidus x henryanus*). Hort. S1957, D1937, (Bean S lib)
zabelii China. RHS1946, (Bean I lib)
- Crataegus: Rosaceae (11+2)**
- altaica* (*purpurea* var. *altaica*) C.Asia. (Bean, EWH). Circus 1957, (Bean EWH)
+ *azarolus* Europe, N.Africa, W.Asia. H&S1947, (Bean I lib)
x carrierei (*x lavallei*) (*stipulacea x crus-galli*). Hort. (RHS 2, EWH)
+ *cordata* (*phaenopyrum*) N.America. H1940, (Bean I lib). end poplar ave, cabin near pines.
+ *crus-galli* N.America. W1939, (Bean I lib)
+ *douglasii* N.America. Slocock1938, (Bean I lib)
durobrivensis N.America. seed1948, (Bean I lib)
‘*Flavidus*’ (Name not confirmed) RHS1946, (Bean I lib)
+ *holmesiana* N.America. H&S1947, (Bean S lib)
ivensae (Name not confirmed) (Cook 1965)
korolkowii. L.Henry. (*wattiana*) Central Asia. N1935, (Bean I lib)
+ *macracantha* N.America. H1947, PP, (Bean I lib), (Hortus 2)
+ *monogyna* ‘*Praecox*’ (*monogyna* ‘*Biflora*’) Europe, Africa. H1946, PP, (Bean I lib), (Hortus 2)
nitida N.America. (RHS 2, EWH)
+ *orientalis* (*laciniata*) Europe, Asia. H&S1937, (Bean I lib)
phaenopyrum (*cordata*)
+ *punctata* N.America. planted PP, (Hortus 2)
‘*Xanthocarpa*’ (Bean, EWH)
rogersiano (could this be *Pyracantha rogersiana* ?) D1938, (Bean I lib)
saligna N.America. H&S1947, (Bean I lib)
+ *sanguinea* var. *songarica* (Name not confirmed) H1939, (Bean I lib)
+ *smithii* (Name not confirmed) D1937, (Bean I lib), (Redher, EWH)
+ *stipulacea* (*mexicana, pubescens f.stipulacea*). Mexico. D1946, (Bean I lib)
succulenta N.America. H&S1950, (Bean I lib)
tanacetifolia N.America. D1937, (Bean I lib)
tomentosa N.America. H&S1946, (Bean I lib)
- Crotolaria: Fabaceae - Papilionaceae (1+0)**
- laburnifolia* Asia, Africa. not found D7, D1935,45, (Bean I lib)
- Cryptomeria: Taxodiaceae (0+5)**
- + *japonica* Japan.
+ ‘*Compacta*’ D1945, (Bean I lib)
+ ‘*Dacrydioides*’ D1945, (Bean I lib)
+ ‘*Elegans*’ D1945,47, (Bean I lib)
+ ‘*Elegans Aurea*’ W1937, (Bean I lib)
+ ‘*Globosa Nana*’ H&S1948, (Bean I lib)
+ ‘*Lobbii Nana*’ (‘*Globosa Nana*’) (Cook 1965)
+ ‘*Nana*’ 1934, (Bean I lib)
+ ‘*Plumosa*’ (Name not confirmed) D1947, (Bean I lib)
+ ‘*Spiralis*’ (Cook 1965), Hill 1948 (Bean I lib)

- + 'Yueka' (Name not confirmed) 1945, (Bean I lib)
- Cunninghamia: Taxodiaceae*
- + *konishii* Taiwan. H&S1947, (Bean S lib)
- Cupressus: Cupressaceae (0+5)*
- arizonica* 'Pyramidalis' H&S1950, (Bean I lib)
- + *duclouxiana* China. H&S1948, (Bean S lib)
- formosensis* see *Chamaecyparis formosensis* Taiwan. G1934, Wilson1947, (Bean S lib)
- lusitanica* 'Glauca Pendula' Mexico. H&S1948, (Bean I lib)
- + *macrocarpa* California.
- 'Aurea' D1937, (Bean I lib)
- 'Brunniana Aurea' D1937, (Bean I lib)
- 'Pendula' H&S1950, (Bean I lib)
- Cydonia: Rosaceae*
- see *Chaenomeles*
- Cyrilla: Cyrillaceae*
- + *racemiflora* N.America, W.Indies. H&S1948, (Bean I lib)
- Cytisus: Fabaceae - Papilionaceae (19+18)*
- albus* Spain. (Cook 1965). Horton 1920, (Bean I lib)
- battandieri* Morocco. S1935,37, (Bean S lib)
- x beanii* (*purgans x ardoinii*). Hort. D&D1935, S 1938, (Bean I lib)
- beanii hirsutus* (Name not confirmed) (Cook 1965)
- decumbens* (*Spartium decumbens*) S.Europe. (Cook 1965). D&D1935, Hill1946, (Bean I lib)
- filipes* Canary Island. D&D1947, (Bean I lib)
- fontanesii* Spain. (Cook 1965). Lincoln 1950, (Bean I lib)
- hybrids* Hort.
- 'C.E.Pearson' S1937, (Bean S lib)
- 'Diana' (PPL)
- 'Donard Seedling' S1937, (Bean S lib)
- 'Enchantress' S1937, (Bean S lib)
- 'Fairy Queen' (PPL)
- 'Goldfinch' (PPL)
- 'Hibernica' S1937, (Bean S lib)
- 'Hodgsinii' (Name not confirmed) D&D1946, (Bean S lib)
- 'Maria Burkwood' S1937, (Bean S lib)
- 'Mrs Norman Henry' (PPL)
- 'Park Farm hybrid' (Name not confirmed) (PPL)
- 'Redstart' (PPL)
- x kewensis* (*ardoinii x multiflorus*). Hort. Hill 1945, D&D 1935, (Bean I lib)
- kewensis procumbens* (Name not confirmed) (Cook 1965)
- leiocarpus* (Name not confirmed) Lincoln 1950, (Bean I lib)
- leiocarpus scoparius* (Name not confirmed) (Cook 1965)
- nigricans* C&S.Europe. (Cook 1965). Hill1950, S1935, (Bean I lib)
- x praecox* (*purgans x multiflorus*). Hort. (Cook 1965). IH1934, S1941, D&D1947, T1947, (Bean I lib)
- purgans* Spain, France, N.Africa. H&S1951, (Bean EWH)
- purpureus* C&SE.Europe. D&D1935, Hill1950,51 (Bean I lib)

- racemosus (spachianus)* Hort. Anderson1920, (Bean S lib)
reverchonii (Name not confirmed) (Cook 1965). Lincoln1950, (Bean I lib)
scoparius Europe.
 ‘**Burkwoodii**’ S1937, (Bean S lib)
 ‘**Crimson King**’ S1939, D&D1946, (Bean S lib)
 ‘**Geoffrey Skipworth**’ S1937, (Bean S lib)
 ‘**Lord Lambourne**’ S1937, (Bean S lib)
 ‘**Ruby**’ (PPL)
sessilifolius C&S.Europe, N.Africa. (Cook 1965). D&D1937, Lincoln1950, (Bean I lib)
supinus C&S.Europe. (Cook 1965). Lincoln1950, (Bean I lib)
x versicolor ‘Hillieri’ (*purpureus x hirsutus var. hirsutissimus*). Hort. H&S1957, (Bean EWH)

Daboecia: Ericaceae (1+5)

- cantabrica* Europe. (Cook 1965)
 ‘**Alba**’ (Cook 1965)
 ‘**Alba Globosa**’ (Cook 1965)
 ‘**Atropurpurea**’ (Cook 1965)
 ‘**Bicolor**’ (Cook 1965)
 ‘**Rosea**’ (‘**Pallida**’) (Cook 1965)

Dacrydium: Podocarpaceae (3+0)

- bidwillii* New Zealand. (Cook 1965)
 + *colensoi* New Zealand. D1935, (Bean S lib)
 + *cupressinum* New Zealand. D1937, (Bean S lib)
franklinii Australia. (Bean S lib)
intermedium New Zealand. (Cook 1965)

Daphne: Thymeleaceae (7+6)

- aurantiaca* China. H&S1946,47,48, (Bean S lib)
x burkwoodii (*caucasica x cneorum*). Hort. 1946, (Bean I lib)
cneorum Spain to S.W.Russia. D1936, S1938,39,41, (Bean I lib)
cneorum ‘Major’ Europe. D1938, (Bean I lib)
dauphinii (x hybrida) (*collina x odora*). Hort. H&S1948, (Bean I lib)
genkwa China, Korea, Japan. D1936,37,42,43, (Bean I lib)
genkwa violacea (Name not confirmed) H1939, (Bean lib)
japonica China. H&S1947, (Bean I lib)
 + *mezereum* Europe, Asia minor. H1935, D1937,42,46, (Bean I lib)
 + *f.alba* Goodwin1946, H&S1950, (Bean I lib)
 ‘**Grandiflora**’ H&S1948, (Bean I lib)
 + *odora* China, Japan. S1937, D1945, (Bean I lib)
 ‘**Alba**’ H&S1947, (Bean I lib)
 ‘**Leucanthe**’ (Cook 1965)
 ‘**Variegata**’ (Cook 1965).
retusa China. H&S1946,47, (Bean I lib)

Datura: Solanaceae (2+0)

- cornigera (Brugmansia knightii)* Mexico. (Cook 1965)
suaveolens (Brugmansia suaveolens) Brazil. (Cook 1965)

Davidia: Davidiaceae

- + *involucrata* China. W1937, S1940, (Bean I lib)

Debregeasia: Urticaceae (1+0)

- longifolia* China, Himalaya, Java. H&S1947, (Bean I lib)

Decaisnea: Lardizabalaceae

- + *fargesii* China. S1935,37, (Bean I lib)

Decumaria: Saxifragaceae

- + *sinensis* China. H&S1947, (Bean I lib)

Dendromecon: Papavaceae (1+0)

- rigidum* California. Hill1950, 51, (Bean I lib)

Dermatobotrys: Scrophulariaceae (1+0)

- saundersii* S.Africa. D&D1964, (RHS2)

Desfontainia: Loganiaceae

- + *spinosa* Chile. S1935,37, (Bean I lib)

Desmodium: Fabaceae - Papilionaceae (2+0)

- spicatum* China. H1935, (Bean S lib)

- tiliifolium* Himalaya. H1934, (Bean I lib)

Deutzia: Saxifragaceae (11+8)

- albida* China. H&S1947, (Bean S lib). Hill1958, (RHS2).

- chunii* China. H&S1948, (Bean I lib)

- compacta* China. H&S1948, (Bean I lib)

- crenata* China, Japan.

- ‘**Magnifica**’ D1934, (Bean I lib)

- ‘**Sheenbarg**’ D1934, (Bean I lib)

- discolor* China.

- ‘**Grandiflora**’ D1934, (Bean I lib)

- ‘**Major**’ D1934, (Bean I lib)

- ‘**Floribunda**’ D1934, (Bean I lib)

- x elegantissima* (*purpurascens x sieboldiana*). Hort. D1934, (Bean I lib)

- + *gracilis* Japan. D1934, (Bean I lib)

- ‘**Campanulata**’ D1934, (Bean I lib)

- ‘**Rosea**’ (Name not confirmed) D1934, (Bean I lib)

- hookeriana* China, Nepal. H&S1947, (Bean S lib)

- x hybrida* (*longifolia x discolor*). Hort.

- + ‘**Montrose**’ S1939, (Bean I lib)

- longifolia* ‘**Veitchii**’ China. H&S1948, (Bean I lib)

- mollis* China. H&S1950, (Bean I lib)

- monbeigii* China. RHS seed1944, (Bean S lib)

- purpurascens* China. D, (Bean I lib)

- + *scabra* Japan, China. Horton, (Bean I lib)

- setchuenensis* var. *corymbiflora* China. H&S1948, (Bean I lib)

- taiwanensis* Taiwan. D1949, (Bean S lib)

- wilsonii* China. Hill1950, (Bean EWH)

Dianella: Liliaceae (1+0)

- tasmanica* Tasmania. D1939, (Bean S lib)

Diervilla: Caprifoliaceaesee *Weigelia***Diosma: Rutaceae (3+0)***ericoides* S.Africa. (Cook 1965). D&D1941, A1939, (Bean I lib)*complexa* (Name not confirmed) W1935, D&D1939, (Bean I lib)*pulchra* see *Coleonema pulchrum* S.Africa. W1939, D&D1939, (Bean I lib)*pulchella* (*Agathosma corymbosa*) S.Africa. A1939, (Bean I lib)**Dipelta: Caprifoliaceae (2+0)***ventricosa* China. H&S 1949, not found K12.*yunnanensis* China. H&S1957, (Bean EWH); H&S 1949 not found K12**Diplacus: Scrophulariaceae (1+0)***glutinosus* N.America. (Bean S lib)**Dipteronia: Aceraceae (1+0)***sinensis* China. H&S1937, (Bean I lib); Cutting H&S1981 dead H8**Disanthus: Hamamelidaceae**+ *cercidifolius* Japan, China. S1935 died, H1937 died, H1957 died, H1940,42, (Bean I lib)**Docynia: Rosaceae (2+0)***delavayi* China. H&S1957, planted DP1960, (Bean EWH)*docynioides (rufifolia)* China. (Cook 1965)**Dodonaea: Sapindaceae**+ *vicosa* New Zealand. D1945, (Bean I lib)**Dombeya: Byttneriaceae (4+0)***mastersii (burgessiae)* Kenya, Africa. HZ1949, (Bean I lib)*nyassica* Africa. (RHS 2, EWH)*sanguinea* (Name not confirmed) HZ1949, (Bean I lib)*spectabilis (rotundifolia)* Africa. HZ1949, (Bean I lib)**Drimys: Winteraceae (2+0)***aromatica (lanceolata)* Australia. S1937, D1939, (Bean I lib)*winteri* S.America. S1935, (Bean I lib)**Dryandra: Proteaceae (2+0)***floribunda* Australia. (Cook 1965). Wilson 1946, T1947, (Bean S lib)*formosa* Australia. (Cook 1965). D&D1941,42,45, (Bean S lib)**Duranta: Verbenaceae (0+1)**+ *plumieri (repens)* Mexico to Brazil. HZ1949, (Bean I lib)

‘Alba’ HZ1949, (Bean I lib)

Edgeworthia: Thymeleaceae+ *papyrifera* China, Japan. S1935,37,39,41, D1945, (Bean S lib)**Ehretia: Ehretiaceae**+ *macrophylla* Himalaya. H&S1937, (Bean I lib)**Elaeagnus: Elaeagnaceae (1+1)**+ *x ebbingei (microphylla x pungens)*. Hort. 1960, (RHS 2, EWH)+ *multiflora (longipes)* China, Japan. Horton, (Bean I lib)*pungens ‘Frederici’* Japan. H&S 1937, (Bean I lib)*umbellata* China. H&S1948, (Bean I lib)

Embothrium: Proteaceae (1+1)

- + *coccineum* Chile. D1933,38,42, S1939, (Bean I lib)
- + 'Norquino' H&S1950, (Bean I lib)
- + 'Longifolium' D1937,39,41,46, (Bean I lib)
- 'Coombes Variety' (Name not confirmed) H&S1948, (Bean I lib)
- lanceolatum (coccineum var. lanceolatum)* Chile. D1937,39,41,45,46, W1947, (Bean I lib)

Enkianthus: Ericaceae (3+0)

- + *campanulatus* Japan. H1934, D1936, ?1936, (Bean I lib)
- cernuus* Japan. H1940, (Bean I lib)
- chinensis* China. H&S1946, (Bean S lib)
- himalaicus (deflexus)* China. planted GD, (Bean, EWH)
- + *perulatus* Japan. D1946, HZ1949, (Bean I lib)

Erica: Ericaceae (31+25)

- arborea* Europe, Caucasus, Africa. Hill1947, (Bean I lib)
- arborea var. alpina* Hill1947,48, (Bean I lib)
- australis* Spain, Portugal. Hill1946,47,48, (Bean I lib)
- 'Mr Robert' Hill1946,50, (Bean I lib)
- andromediaeflora (holosericea)* S.Africa. IH1945, D&D1946, (Bean I lib)
- baccans* S.Africa. D&D1946, (Bean I lib)
- brevifolia* (Name not confirmed) D&D1948, (Bean I lib)
- caffra* S.Africa. (PPL)
- canaliculata (melanthera)* S.Africa. Hill1948, (Bean S lib). A1945,46, (Bean I lib)
- carnea (herbacea)* Europe.
 - 'King George' H1945, (Bean I lib)
 - 'Mrs Beale' (Name not confirmed) H1945, (Bean I lib)
 - 'Vivellii' 1938, (Bean I lib)
 - 'Winter Beauty' S1939, (Bean I lib)
- x cavendishiana (abietina x depressa)*. Hort. D&D1946, (Bean I lib)
- cerinthoides coronata* (Name not confirmed) D&D1947, Wilson1947, (Bean I lib)
- cinerea* Europe.
 - var. coccinea* 1934, (Bean I lib)
 - 'Rosea' 1938, (Bean I lib)
 - 'Prince of Wales' 1937, (Bean I lib)
- coccinea (petiveri)* South Africa. D&D1945, (Bean I lib)
- concinna (verticillata)* S.Africa. (Cook 1965)
- coronata (fascicularis)* S.Africa. (Cook 1965)
- cruenta* S.Africa. (Cook 1965). D&D 1946, (Bean I lib).
- x darleyensis (hybrida)* Europe. S1935,37, (Bean I lib). D&D1946, (Bean I lib)
- elegantissima* (Name not confirmed) (PPL)
- erigena (mediterranea* Hort, not L.) France, Spain, Ireland.
 - 'Brightness' (Cook 1965). Hill 1947, (Bean I lib)
 - 'Hibernica' (*E.hibernica* = *E.erigena* 'Glauca') Hill1948, (Bean I lib)
 - 'Rubra' (PPL)
 - 'Superba' Hill1946, (Bean I lib)
- 'Gilva' (Name not confirmed) D&D1947, (Bean I lib)

- glandulosa* S.Africa. D&D1946, (Bean I lib)
glauca elegans (Name not confirmed) H1945, D&D1946, (Bean I lib)
hentyana (Name not confirmed) D&D1946, (Bean I lib)
'Jubilee' (Name not confirmed) (PPL)
lusitanica (codonodes) W.Europe. (Catalogue 1980)
mackayii (mackaiana) England, Spain.
'Flore Plena' H1945, (Bean I lib)
mammosa var. coccinea S.Africa. D&D1943,46, (Bean I lib)
nebacalyx (Name not confirmed) D&D1945, (Bean I lib)
parkeri S.Africa. D&D1946, (Bean I lib)
peeria 'Rosea' (Name not confirmed) (Cook 1965). D&D1947, (Bean I lib).
peziza S.Africa. (Cook 1965)
regia var. variegata S.Africa. (Cook 1965). D&D1948, (Bean I lib)
rubens S.Africa. D&D 1946, (Bean I lib)
stricta (terminalis) Europe. Hill1948, (Bean I lib)
tetralix Europe. D&D1946, (Bean I lib)
umbellata Spain, Portugal, Morocco. Hill1950, (Bean S lib)
vagans Ireland, Cornwall.
'Improved' (Name not confirmed) D&D1938, (Bean I lib)
'St Keverne' (Cook 1965)
ventricosa S.Africa.
'Globosa' (Cook 1965)
'Breviflora' (Cook 1965)
'Coccinea' (Name not confirmed) (Cook 1965)
'Magnifica' (Name not confirmed) D&D1948, (Bean I lib)
'Splendens' (Cook 1965)
verticillata S.Africa. D&D1946, (Bean I lib)
vulgaris see *Calluna vulgaris* (Cook 1965)
x watsonii (ciliaris x tetralix). Hort.
'Dawn' D&D1946, T1947, (Bean I lib)
x wilmorei Hort.
'Flore Plena' (Name not confirmed) D&D1946, (Bean I lib)
'Winter Gem' (Name not confirmed) D&D1946, (Bean I lib)
- Eriobotrya: Rosaceae*
+ *japonica* China. Ho1918, (Bean I lib)
prinoides see *Photinia prionophylla* China. H&S1948, (Bean I lib)
- Eriocephalus: Asteraceae (1+0)*
africanus S.Africa. D1934,42, (Bean S lib)
- Eriostemon: Rutaceae (2+0)*
myoporoides Australia. (Bean EWH)
neriifolia (Name not confirmed) (PPL)
- Erythrina: Fabaceae - Papilionaceae (4+0)*
acanthocarpa S.Africa. HZ1949, (Bean S lib)
blakei India. D1938,39,40,47, (Bean I lib)
+ *crista-galli* Brazil. D1946,W1939, (Bean I lib)

indica (variegata) Phillipines, Indonesia. HZ1949, (Bean S lib)

speciosa Brazil. HZ1949, (Bean S lib)

Escallonia: Saxifragaceae (2+9)

‘**Donard Brilliant**’ (langleyensis group). Hort. S1958, (Bean I lib)

‘**Edinensis**’ (langleyensis group). Hort. S1935, (Bean I lib)

+ *floribunda (bifida)* ~~*floribunda*~~. Hort, not HBK, = *bifida*. Link&Otto) S.America. (Cook 1965)

‘**Freitheii**’ (*rockii* ‘**Freitheii**’) Hort. D, (Bean I lib)

‘**Glory of Donard**’ (langleyensis group). Hort. (Cook 1965)

‘**Iveyi**’ (*bifida x exoniensis*). Hort. S1937, (Bean S lib)

+ ‘**Langleyensis**’ (*virgata x rubra var. macrantha*). Hort. B1935, D1935, (Bean I lib)

‘**Mrs Gwen Anley**’ (langleyensis group). Hort. D1942, (Bean I lib)

+ *organensis (laevis)* Brazil. H&S1946, (Bean I lib)

‘**Pride of Donard**’ (langleyensis group). Hort. H&S1957, planted GD1960, (Bean EWH)

rubra Chile. (Cook 1965)

rubra var. macrantha (macrantha) Chile. (Cook 1965)

‘**C F Ball**’ (Bean I lib)

‘**William Watson**’ (langleyensis group). Hort. H1940, (Bean I lib)

Eucalyptus: Myrtaceae (11+1)

amygdalina Australia. (Cook 1965)

forrestiana Australia. H1945, (Bean I lib)

globosa (Name not confirmed) (Cook 1965)

grossa Australia. H1945, (Bean I lib)

lehmannii Australia. D1949, (Bean I lib)

leucoxydon Australia. H&S1948, (Bean I lib)

+ ‘**Rosea**’ D1945, W1946, (Bean I lib)

macrandra Australia. H1937, (Bean I lib)

maculata citriodora (Name not confirmed) D1941, (Bean I lib)

nicholi Australia. D1939, (Bean S lib)

sideroxydon ‘**Rosea**’ Australia. H&S1948, (Bean I lib)

steedmanii Australia. D1941, (Bean I lib)

+ *tetraptera* Australia. H1946,57, (Bean I lib)

torquata Australia. D1941, (Bean I lib)

Eucryphia: Eucryphiaceae (2+2)

billarderi (lucida) Tasmania. S1939, (Bean S lib). Hill1964, (RHS2).

+ *cordifolia* Chile. S1939, (Bean I lib)

+ *x intermedia* (*glutinosa x lucida*). Hort. H&S1950, (Bean I lib)

‘**Rostrevor**’ H&S1950, (Bean S lib)

lucida (billarderi)

+ *x nymansensis* (*glutinosa x cordifolia*). Hort. S1937, (Bean S lib), (Rehder, EWH)

pinnatifolia (glutinosa) Chile. S1935,37,39, (Bean I lib)

Double form 1947 Hughes, (Bean I lib)

Eugenia: Myrtaceae (8+0)

eucalyptoides Australia. (Cook 1965)

leuhmannii (Syzygium L) Australia. (RHS 2, EWH)

myrtifolia Australia. D&D, (RHS 2, EWH)

paniculata australis (Name not confirmed) (*E.paniculata* = *Syzygium paniculatum*, and *E.australis* = *Syzygium australis*). Australia. (RHS 2, EWH)

pendula (Name not confirmed) (Bean I lib)

readru (Name not confirmed) (RHS 2, EWH)

rehehmannii (Name not confirmed) (Bean I lib)

smithii (*Acmena smithii*) Australia. 1957, (RHS 2, EWH)

ventenatii (*Walterhousia floribunda*) Australia. H, (RHS 2, EWH), (Bean I lib)

Euodia: Rutaceae (1+0)

+ *daniellii* China, Korea. H&S1946, (Bean I lib)

+ *hupehensis* China. H&S1946, (Bean I lib), (Bean, EWH)

velutina China. H&S1947, (Bean S lib)

Euonymus: Celastraceae (15+4)

+ *alatus* China, Asia. S1935, H1935, H&S1947, D1949, (Bean I lib)

+ *alatus* var. *apterus* (*alatus* var. *subtriflorus*) China. S1935, 37, 41, (Bean I lib)

+ *atropurpureus* (*latifolius*. Marsh) N.America. H&S1948, 50, (Bean I lib)

bungeanus Korea, China. S1940, (Bean I lib)

cornutus China. H1964, (RHS 2, EWH)

europaeus 'Aldenhamensis' Europe, W.Asia. H&S1947, (Bean S lib)

+ *europaeus* 'Fructu coccineo' H&S1947, (Bean I lib)

europaeus var. *intermedius* Europe. H&S1946, (Bean I lib)

europaeus monstrosus (Name not confirmed) S1941, (Bean S lib), (Bean I lib)

fimbriatus. Wall. Himalaya. H1965, D1934?, (RHS 2, EWH)

+ *grandiflorus f. salicifolius* Nepal, Bhutan, China. H1947, (Bean S lib)

ilicifolius China. H&S1948, (Bean S lib)

japonicus 'Albomarginatus' Japan. Horton, (Bean I lib)

lanceifolius. Loes. (*hamiltonianus* var. *lanceifolius*) China. H1946, (Bean S lib)

+ *latifolius* (L.). Mill. (*europaeus* var. *latifolius* L.) Europe, Asia minor.

H1938, H&S1947, (Bean 1 lib)

latifolius Marsh. see *atropurpureus*.

+ *maackii* (*hamiltonianus* var. *maackii*) Manchuria, Japan. H&S1947, (Bean S lib)

nikoensis (*hamiltonianus* var. *nikoensis*) Japan. (RHS 2, EWH)

oresbius China. H&S1946, (Bean S lib)

oxyphyllus Japan, China. H&S1946, 48, 50, (Bean S lib)

+ *pendulus*. Wall. (*lucidus*. D. Don., *fimbriatus*. Hort.; not Wall.) Himalaya. H&S1946, D1946, (Bean S lib)

phellomanus China. H&S1946, (Bean S lib)

planipes (*latifolius* var. *planipes*) Japan, Korea, N.E.China. (Cook 1965)

radicans (*fortunei* var. *radicans*) China. D1945, (Bean I lib)

'Roseo-marginatus' (Name not confirmed) D1945, (Bean I lib)

sachalinensis (*latifolius* var. *sachalinensis*) Sakhalim. H&S1946, 48, (Bean 1 lib)

+ *sanguineus* China, Tibet. H&S1947, (Bean I lib)

semiexertus (*hamiltonianus* var. *semiexertus*) Japan. (RHS 2, EWH)

suave (Name not confirmed) below bills, (Bean, EWH)

+ *tingens* Himalaya. H&S1948, (Bean S lib)

+ *yedoensis* (*hamiltonianus* var. *yedoensis*) Japan. S1935, 39, D1946, (Bean I lib)

vidalii (Name not confirmed) (RHS 2, EWH)

*Eupatorium: Asteraceae (1+0)**micranthum* Mexico. H&S1947,50, (Bean S lib)*Eupetelea: Eupeteleaceae (2+0)**franchetii (pleiosperma)* Japan. H&S1946, (Bean I lib)*polyandra* Japan. H&S1946, (Bean I lib); H&S1949,55,59, dead I3, dead R3*Exochorda: Rosaceae (3+0)**albertii (korolkowii)* Turkestan. D1936, (Bean I lib)*geraldii* China. S1937, (Bean I lib)*giraldii var. wilsonii* China. S1937, (Bean I lib)+ *grandiflora (racemosa)* China. D1936, (Bean I lib)*Fabiana: Solanaceae (1+2)**imbricata* Chile. B1935, D1942, (Bean I lib)‘**Prostrata**’ H&S1950 (Bean I lib)‘**Violacea**’ D1942, (Bean S lib)*Fagus: Fagaceae (1+6)*+ *ferruginea (grandifolia, americana)* N.America. H&S1948, (Bean I lib)*japonica* Japan. H&S1946, (Bean I lib)+ *sylvatica* Europe.‘**Cuprea**’ H&S1946, (Bean I lib)‘**Grandidentata**’ H&S1939, (Bean I lib)‘**Heterophylla**’ Horton 1918, Slocock 1938, (Bean I lib)+ ‘**Pendula**’ Horton 1918, (Bean I lib)+ ‘**Purpurea**’ D1937, W1947, (Bean I lib)‘**Purpurea Major**’ (‘**Riversii**’) H&S1937, (Bean I lib)+ ‘**Purpurea Pendula**’ H1937, (Bean I lib)‘**Quercoides**’ H&S1947,50, (Bean I lib)+ ‘**Riversii**’ S1937, D1947, (Bean I lib)+ ‘**Tricolor**’ (‘**Purpurea Tricolor**’) D1937, (Bean I lib)‘**Variegata**’ H&S1937, (Bean I lib)+ ‘**Zlatia**’ D1941, (Bean I lib)*X Fatsyhedera: Araliaceae (0+1)**lizei* ‘**Variegata**’ D&D1959, (RHS2).*Feijoa: Myrtaceae (0+4)**sellowana*‘**Cooledgii**’ (Cook 1965). S1944, H1955, (Bean S lib)‘**Choiceana**’ (Cook 1965)‘**Superba**’ (Cook 1965). W1937, (Bean S lib)‘**Splendens**’ (Name not confirmed) (Cook 1965). D&D1946, (Bean S lib)*Fendlera: Saxifragaceae (1+0)**rupicola* N.America. S1935, H&S1964, (Bean I lib), (Bean, EWH)*Ficus: Moraceae (1+1)**pumila* China, Japan. (Cook 1965)‘**Mimina**’ (Cook 1965)*Firmiana: Sterculiaceae (1+0)**platanifolia (Sterculia platanifolia)*. Japan.

Fitzroya: Cupressaceae (1+0)*patagonia (cupressoides)* S.America. H&S1946,50, (Bean I lib)***Fokenia: Cupressaceae (1+0)****hodginsii* China, Vietnam. 1934, (Bean S lib)***Fontanesia: Oleaceae***+ *fortunei (japonica)* China. D1939, (Bean I lib). H1937, (Bean I lib)+ *phillyreoides* W.Asia. D1935, (Bean I lib)***Forsythia: Oleaceae (1+1)***

'Longwood' (Name not confirmed) (Cook 1965)

ovata Korea. H&S1948, (Bean S lib)+ *suspensa* Japan. D1934, (Bean I lib)+ *suspensa var. sieboldii* Hort(Japan). 1934, (Bean I lib)***Fothergilla: Hamamelidaceae (2+0)****gardenii* N.America. H&S1950, (Bean I lib). H1948, (Bean S lib)+ *major* N.America. S1937,38,39, (Bean I lib)*monticola* N.America. S1935,38,39, (Bean I lib)***Fraxinus: Oleaceae (2+4)****angustifolia* Vahl. (*angustifolia* ssp. *oxycarpa*, *oxyphylla*)

W.Medit, N.Africa. H&S1937, (Bean I lib)

+ *angustifolia var. lentiscifolia* Europe, N.Africa. H&S1950, (Bean I lib)+ *bracteata* see *griffithii**engleriana* (Name not confirmed) H&S1947, the glade, (Bean I lib)*excelsior* Europe, N.Africa.+ *f.angustifolia* H&S1957, D1937, (Bean I lib)

'Aurea' (Cook 1965)

'Aurea Pendula' H&S1950, (Bean I lib)

'Pendula' (Cook 1965)

+ *griffithii (bracteata)* China, Phillipines. H&S1947,48 (Bean I lib)+ *holotricha* Balkans. H&S1947, (Bean I lib)+ *longicuspis* (either *sieboldiana* in part, or *lanuginosa* in part, Bean disagrees) Japan, Korea. H&S1947, (Bean I lib)+ *nigra* N.America. H1957, sheep yards, (Bean I lib)+ *oregona (latifolia)* N.America. seed1950 oregon, (Bean I lib)+ *oxycarpa* S.Europe, N.Africa, Asia minor. H&S1947, HZ1949, (Bean I lib)*pennsylvanica* 'Folius Argenteus' N.America. H&S1947, (Bean I lib)+ *platypoda* China. H&S1948, (Bean S lib)+ *spaethiana* Japan. H&S1947,50, (Bean I lib)***Fremontia: Bombaceae (2+0)****californicum* N.America. A1937, D1941 (Bean I lib); H1937 (Bean S lib)*mexicanum* N.America. A1933, H1937, (Bean S lib)***Fuchsia: Onagraceae (4+1)****excorticata* New Zealand. D&D1945, (Bean I lib)*macrostemma (magellanica var. macrostemma)* Chile. Hill1948, (Bean I lib)*magellanica* Chile, Argentina. (Cook 1965)

'Riccantonii' Hort. D&D1939, (Bean I lib)

splendens Mexico. (Cook 1965)

- Galphimia: Malphiaceae (1+0)***
glauca Mexico. HZ1949, (Bean S lib)
- Gardenia: Rubiaceae (2+1)***
florida (jasminoides, grandiflora) China, Japan. A1939, (Bean I lib)
 ‘Flore Plena’ (Name not confirmed) D&D1946, (Bean I lib)
thunbergii S.Africa. (Cook 1965). A1939,49, (Bean I lib)
- Garrya: Garryaceae***
 + *elliptica* N.America. D1932, S1939, W1939, (Bean I lib)
- Gaultheria: Ericaceae (10+0)***
cuneata China. H&S1948, (Bean S lib)
forrestii China. H&S1947, (Bean S lib)
fragrantissima India. H&S1947, (Bean S lib)
hispidia Australia. H&S1948, (Bean S lib)
hookeri Himalaya. H&S1946 died, (Bean S lib)
miqueliana Japan. H&S1950, (Bean S lib)
trichophylla Himalaya, W.China. Hill1948, (Bean I lib)
veitchiana China. Hill1948, (Bean I lib)
wardii Tibet. H&S1948, (Bean S lib)
wisleyensis (Name not confirmed) H&S1950, (Bean S lib)
- Gaya: Malvaceae***
lyallii see *Hoheria lyallii* New Zealand. W1939, (Bean I lib)
- Gelsemium: Loganiaceae (0+1)***
sempervirens N.America. D1943, (Bean I lib)
- Genista: Fabaceae - Papilionaceae (11+0)***
 + *aetnensis* Sicily. D1948, (Bean I lib)
 + *cinerea* Spain. H&S1948, (Bean I lib)
dalmatica (silvestris) Adriatic coast. H&S1950, (Bean I lib)
falcata Spain. H&S1948, (Bean I lib)
germanica Europe. S1938, (Bean I lib)
gracilis (Name not confirmed) D1942, H&S1947, (Bean S lib)
januensis Italy Slovenia, Romania, Balkans. (Cook 1965)
lydia Balkans, Syria. H&S1950, (Bean I lib)
monosperma Spain, Portugal. S1935, H1937, (Bean I lib)
pilosa Europe, Sweden. H&S1947, (Bean I lib)
sagittalis Europe, Balkans. S1939, (Bean I lib)
stenopetala (Name not confirmed) D1948, (Bean S lib)
virgata (tinctoria var. virgata) Europe. H1950, (Bean I lib)
- Gevuina: Proteaceae (1+0)***
avellana Chile. Ford1946, H&S1946, D1947, (Bean S lib)
- Ginkgo: Ginkgoaceae (0+1)***
 + *biloba* China. D1937,42,45, (Bean I lib)
 + ‘Fastigiata’ H&S1948, (Bean I lib)
 ‘Pendula’ H&S1948, (Bean I lib)
- Gleditsia: Fabaceae - Caesalpinaceae (0+1)***
 + *caspica* Iran, Transcaucasus. (RHS 2, EWH), planted GD1960, (Bean EWH)
 + *japonica* Japan, China. D1937, H&S1946, planted circus, (Bean I lib)

+ *koraiensis* (*japonica koraiensis*) H&S1948, (Bean S lib)

+ *sinensis* China. H&S1946, (Bean S lib)

+ *tricanthos* N.America. D1935. circus, garden. (Bean I lib)

‘Pendula’ (‘Bujotii’) (Bean, EWH)

Glochidion: Euphorbiaceae (1+0)

fortunei China. H&S1948, Lushan Bot gdn, (Bean S lib)

Glyptostrobus: Taxodiaceae (1+0)

sinensis (Name not confirmed) D1939,40, (Bean S lib)

Gordonia: Theaceae (3+0)

alatomaha (*Franklinia alatomaha*) N.America. garden, (RHS 2, EWH), (Rehder, EWH)

+ *axillaris* (*anomala*) China. D1942 garden, cabin, (RHS 2, EWH), (Bean S lib)

chrysantra China. H&S1947,50, (Bean I lib)

+ *lasianthus* N.America. H&S1948, (Bean I lib)

pubescens (NNC) H&S1950, (Bean I lib), (Rehder, EWH)

Grevillea: Proteaceae (7+1)

alpina ‘Dallichiana’ Australia. W1937, D1941,42, (Bean S lib)

banksii ‘Forsters form’ Australia. HZ1949, (Bean S lib)

dimorpha (*speciosa* ssp. *dimorpha*) Australia. W1937, D1941, (Bean S lib)

fasciculata Australia. D&D1959, (RHS2).

obtusifolia Australia. D1941, (Bean S lib)

oleoides (*speciosa* ssp. *oleoides*) Australia. (PPL)

oleoides ssp. *dimorpha* see *dimorpha* Australia. (PPL)

punicea Australia. (PPL)

+ *robusta* Australia. H&S1948, (Bean S lib)

sericea Australia. W1959, (Bean S lib)

williamsii (*rosmarinifolia*) Australia. D1941,42,43, W1939, (Bean S lib)

Grewia: Tiliaceae (2+0)

occidentalis Africa. H1940, (Bean I lib)

parviflora (*biloba* var. *parviflora*) N.China, Korea. (Cook 1965)

Greyia: Melianthaceae (1+0)

sutherlandii Africa. D1946, (Bean I lib)

Griselinia: Cornaceae (0+1)

littoralis ‘Variegata’ New Zealand. (Cook 1965)

Gymnocladus: Fabaceae - Caesalpinaceae

+ *canadensis* (*dioica*) N.America. Stevens1938, H&S1958, (Bean I lib)

Hakea: Proteaceae (2+0)

cyclocarpa Australia. D1947, (Bean S lib)

eucalyptoides (*laurina*) Australia. Wilson1947, (Bean S lib)

Halesia: Styracaceae

+ *carolina* Hill1964, (RHS2).

Halimium: Cistaceae (4+0)

alyssoides (*Cistus alyssoides*) Spain, France. (Cook 1965)

lasianthum (*Cistus lasianthus*) Portugal. (Cook 1965)

lasianthum ssp. *formosum* (*Cistus formosus*) Meditt.

ocymoides (*Cistus ocymoides*, *Helianthemum ocymoides*) Portugal, Spain. (Cook 1965)

*X Halimocistus: Cistaceae (1+0)**wintonensis* Hort. D1946, (Bean S lib)*Halimodendron: Fabaceae - Papilionaceae (1+0)**argenteum (halodendron)* Transcaucasus, Turkestan. S1935, (Bean I lib)*Hamamelis: Hamamelidaceae (3+3)*+ *x intermedia 'Hiltingbury'* Hort. H&S1947, (Bean I lib)*japonica* Japan. (Bean I lib)+ *'Arborea'* H&S1937, (Bean I lib)*'Rubra'* W1935, S1937, (Bean S lib)*'Virginiana'**'Zuccariniana'* H&S1937, (Bean I lib)+ *mollis* China. D1935,45,47, S1935, W1937, (Bean I lib)*sinensis* (Name not confirmed) (Bean, EWH)+ *vernalis* N.America. (Bean I lib)*virginiana* N.America. (Bean I lib). (Cook 1965)*Hardenbergia: Fabaceae - Papilionaceae (1+0)**comptoniana* Australia. D1941,47, (Bean I lib)*Harpephyllum: Anacardiaceae (1+0)**caffrum* S.Africa. HZ1949, (Bean I lib)*Harpullia: Sapindaceae (1+0)**pendula* Australia. HZ1949, (Bean I lib)*Hartia: Theaceae**sinensis* see *Stewartia sinensis* H&S1948, (Bean S lib)*Hebe: Scrophulariaceae (3+4)**x andersonii (speciosa x salicifolia) (PPL)**'Hagley Park' (raouli x hulkeana)*. Hort. (PPL)*hulkeana* New Zealand. D&D1937,45,46, (Bean II lib).*'La Seduisante'* Hort. D&D1948, (Bean II lib).*macrocarpa var. latisepala* New Zealand. D&D1946, (Bean II lib).*'Rainers Beauty'* (Name not confirmed). (PPL)+ *speciosa* New Zealand. D&D1946, (Bean II lib).+ *stricta* New Zealand. (Catalogue 1980).*'Violet Mickle'* (Name not confirmed). (PPL)*Helianthemum: Cistaceae**alpestre (oelandicum ssp. alpestre, Cistus alpestris)* Balkans. D 1945, (Bean I lib)*ocymoides (Halimium ocymoides)* Spain, Portugal. D1942, (Bean I lib)*Hemitelia: Cyatheaceae (1+0)**smithii (Alsophila smithii, Cyathea smithii)* New Zealand. (Cook 1965)*Heteromeles: Rosaceae (1+0)**arbutifolia (Photinia arbutifolia)* Santa Catalina. S1935, (Bean I lib)*Hibiscus: Malvaceae (0+3)**moscheutos 'Rosea'* N.America. D1939, (Bean I lib)+ *mutabilis* China. D1939, (Bean I lib)*syriacus* China, India.*'Coelestis'* H1939, (Bean I lib)*'Montrosus'* H1939, (Bean I lib)

Hoheria: Malvaceae (2+0)

angustifolia New Zealand. (Cook 1965)

lyallii (Gaya lyallii)

Holboellia: Lardizabalaceae

+ *latifolia* China. (Bean, EWH)

Holmskioldea: Verbenaceae (1+0)

sanguinea Himalaya. HZ1949, (Bean I lib)

Holodiscus: Rosaceae (1+0)

discolor (Spiraea discolor) N.America. (RHS 2, EWH)

Homalanthus: Euphorbiaceae (1+0)

populifolius Ceylon to Pacific. HZ1949, (Bean I lib)

Hovea: Fabaceae - Papilionaceae (1+0)

celsii (elliptica) Australia. D1941,42, (Bean I lib)

Hovenia: Rhamnaceae

+ *dulcis* China, Himalaya. D1937, (Bean I lib)

Hydrangea: Saxifragaceae (5+38)

acuminata see *serrata*

arborescens 'Grandiflora' N.America. H&S1947, (Bean I lib)

bretschneideri (heteromalla 'Bretschneideri') India, Himalaya, China. D1947, H&S1947, (Bean I lib)

chinensis acuminata (H. serrata 'Chinensis') Japan, Korea. Hill1962, (RHS 2, EWH)

involutrata Japan. H&S1947,50, (Bean I lib)

macrocephala (Name not confirmed) Japan? H&S1948, (Bean I lib)

+ *macrophylla* Japan.

'Agisai' (Name not confirmed). (Cook 1965)

'Amaranta' (Name not confirmed). (Cook 1965)

'Blue Prince' (Cook 1965)

+ 'Blue Wave' H&S1948, (Bean I lib)

'Cochloca Amonica' (Name not confirmed). (Cook 1965)

'Colonel Durham' (Name not confirmed). (Cook 1965)

'Florence Bolt' (Name not confirmed). (Cook 1965)

'F.Mathes' (Name not confirmed). (Cook 1965)

'Generale Vicomtesse de Vibraye' (Cook 1965)

'Germaine Moulliere' (Name not confirmed). (Cook 1965)

'Goliath' (Cook 1965)

+ 'Hortensis' (*f.hortensia*) H&S1948, (Bean I lib)

'King George' (Cook 1965)

'Krimheld' (Name not confirmed). (Cook 1965)

'Lancelot' (Name not confirmed). (Cook 1965)

'Loreley' (Cook 1965)

'Madame A. Riverain' (Cook 1965)

'Madame Truffant' (Name not confirmed). (Cook 1965)

'Marie Mathies' (Name not confirmed). (Cook 1965)

'M.Ludenburg' (Name not confirmed). (Cook 1965)

'Montrose' (Name not confirmed). (Cook 1965)

'Mrs H.J.Jones' (Name not confirmed). (Cook 1965)

- 'Neidersachsen' (Cook 1965)
 'Neige Orleanise' (Name not confirmed). (Cook 1965)
 'Nevrow Baardse' (Name not confirmed). (Cook 1965)
 'Paris' (Name not confirmed). (Cook 1965)
 'Parzival' (Cook 1965)
 'Pasteur' (Name not confirmed). (Cook 1965)
 'Peer Gynt' (Name not confirmed). (Cook 1965)
 'Queen Wilhelmina' (Name not confirmed). (Cook 1965)
 'Rose Perfection' (Name not confirmed). (Cook 1965)
 'Rubis' (Name not confirmed). (Cook 1965)
 'Schrone Dresdnerin' (Name not confirmed). (Cook 1965)
 'Splendens' (Name not confirmed). (Cook 1965)
 'Victoria' (Name not confirmed). (Cook 1965)
 'W.E.Cartwright' (Name not confirmed). (Cook 1965)
 'White Wave' (PPL)
- + *petiolaris* Japan, Korea. S1939,41, (Bean I lib)
 + *quercifolia* N.America. D1945, (Bean I lib)
robusta (aspera ssp. robusta) China. H&S1947, (Bean S lib)
sargentiana (aspera ssp. sargentiana) China. H&S1947, (Bean I lib)
serrata (acuminata) Japan, Korea. (Bean S lib)
 'Grayswood' Japan, Korea. H&S1948, (Bean I lib)
- + *strigosa (aspera ssp. strigosa)* China. H&S1948, (Bean S lib)
 + *villosa (aspera var. aspera)* China, Taiwan. D1942, (Bean S lib)
 + *xanthoneura (heteromalla)* India, China, Himalaya. Massey 1948, (Bean I lib)
- Hypericum: Hypericaceae (5+3)*
- aureum*. Bartr. not Lour. (*frondosum*) N.America. H&S1947, (Bean I lib)
calycinum Europe, Asia minor. H&S1947, (Bean I lib)
forrestii (patulum var. forrestii) China, Assam, Burma. (Cook 1965)
hircinum Europe. H&S1947, (Bean I lib)
- + *leschenaultii (triflorum)* Java, Sumatra. H&S1947, (Bean S lib). H&S1948, (Bean I lib).
 + *x moserianum 'Tricolor' (patulum x calycinum)*. Hort. H&S1947, (Bean I lib)
patulum 'Grandiflorum' China. H&S1946, (Bean I lib)
patulum var. henryi China. (Cook 1965)
patulum 'Sungold' (kouytchense) China. (PPL)
 'Rowallane' (*hookerianum 'Rogersii' x leschenaultii*). Hort. H&S948, (Bean I lib)
- Hypocalymma: Myrtaceae (1+0)*
- robustum* Australia. (Cook 1965). D&D1949, (Bean I lib).
- Idesia: Flacourtiaceae (0+1)*
- + *polycarpa* China. S1935, H1937, D1938, (Bean I lib)
polycarpa special berrying H1939, (Bean I lib)
- Ilex: Aquifoliaceae (11+5)*
- + *altaclarensis 'Camelliifolia' (aquifolium x perado)*. Hort. H&S1948, (Bean I lib)
 + *aquifolium* Europe.
 + 'Argenteomarginata' H&S1946, (Bean I lib)
 'Argenteoregina' ('Silver Queen') (Cook 1965)

- + **'Aureomarginata'** D1939, H1946, (Bean I lib)
- + **'Aureoregina' ('Golden Queen')** (Cook 1965). H&S1948, (Bean S lib)
- 'Ferox'** D1939, (Bean I lib)
- + **'Ferox Aurea'** H&S1948, (Bean I lib)
- + *crenata* Japan.
- 'Convexa'** Hill1964, (RHS2).
- 'Mariesii'** Japan 19?6, (RHS 2, EWH)
- 'Variegata'** Hill1964, (RHS2).
- forrestii* China. H&S1948, (Bean S lib)
- fragilis* Himalaya. H&S1947, (Bean I lib)
- + *franchetiana* China. H&S1948 (Bean I lib), planted 1960 GD, (RHS 2, EWH)
- + *insignis (kingiana)* Himalaya. H&S1947, (Bean I lib)
- + *macrocarpa* China. planted 1960 GD, (RHS 2, EWH)
- opaca* N.America. (RHS 2, EWH)
- + *pedunculosa* Japan. Hill1964, (RHS 2, EWH)
- pekinensis* (Name not confirmed) (Bean, EWH)
- pernyi* China. H&S1948, (Bean I lib)
- + *platyphylla (perado var. platyphylla)* Madeira. H&S1948, (Bean I lib)
- platyphylla maderensis?* (could this be *perado* = *perado var. maderensis*) H&S1950, (Bean I lib)
- rotunda* Korea, Japan, China. (Rehder, EWH)
- rugosa* Japan.
- argutidens* ? (Name not confirmed) (RHS 2, EWH)
- serrata* Japan, China.
- angusta* (Name not confirmed) S1941, (Bean I lib)
- + *verticillata* N.America. S1938,39 H&S1948, (Bean I lib)
- wilsonii* China, Taiwan. H&S1948, (Bean I lib), (RHS 2, EWH)
- yunnanensis* China. (Bean, EWH)
- Illicium: Illiciaceae (1+0)***
- + *anisatum* Japan. D1938, (Bean I lib)
- floridanum* N.America. planted GD, (RHS 2, EWH)
- Indigofera: Fabaceae: Papilionaceae (3+0)***
- + *gerardiana (heterantha)* Himalaya. D1934, (Bean I lib)
- hebeptala* Himalaya. (PPL). (RHS2).
- pendula* China. D1938, (Bean S lib)
- potaninii* China. H&S1937,47, (Bean S lib)
- Iochroma: Solanaceae (2+0)***
- lanceolatum (cyaneum)* S.America. (Cook 1965)
- tubulosa* Tropical America. 1957, (RHS2).
- Ipomaea: Convolvulaceae (2+0)***
- cneorum (Convolvulus cneorum?)* (Cook 1965)
- learii (acuminata)* Tropical America. D&D1941, (Bean I lib)
- Itea: Saxifragaceae (1+0)***
- + *ilicifolia* China. H&S1947, (Bean I lib)
- virginica* N.America. H&S1947, (Bean I lib)
- + *yunnanensis* China. H&S1948,50, (Bean S lib)

Jacaranda: Bignoniaceae

- + *ovalifolia (mimosifolia)* Argentina. D1941,43,45, (Bean I lib)

Jacobinia: Acanthaceae (1+0)

- magnifica (Justicia carnea, Jacobinia carnea)* S.America. HZ1949, (Bean I lib)

Jasminium: Oleaceae (9+1)

- + *azoricum* Azores. D1949, (Bean S lib)
- + *beesianum* China. D1942, (Bean S lib)
- grandiflorum* L. Arabia. D1945, (Bean I lib)
- heterophyllum (subhumile)* Himalaya, China. (Redher, EWH)
- heterophyllum var. glabricymosum* Himalaya, China. H&S1948, (Bean S lib)
- humile* Afghanistan, Szechuan. H&S1950, (Bean I lib)
- nitidum* Admiralty Island. HZ1949, (Bean I lib)
- nudiflorum (sieboldianum)* China. green whare, (Bean EWH)
- officinale* Iran to China. cabin, garden, (Bean EWH)
- officinale 'Grandiflorum' (officinale f. affine, grandiflorum. Hort., not L.)* Himalaya. (Cook 1965)
- parkeri* India. H&S1947, (Bean S lib)
- + *revolutum (humile var. revolutum)* Himalaya, Kashmir. N1935, (Bean I lib)
- sambac* India. HZ1949, (Bean I lib)
- + *x stephanense (beesianum x officinale)*. Hort. H1934, (Bean S lib)

Jovellana: Scrophulariaceae (1+0)

- violacea* Chile. (Cook 1965)

Juglans: Juglandaceae (2+1)

- cathayensis* China. H&S1950, (Bean I lib)
- + *cinerea* N.America. seed 1950 Wanganui, (Bean I lib)
- cordiformis (ailantifolia var. cordiformis)* Japan, Sakhalin. Horton, (Bean I lib)
- + *regia* Europe, Asia.
- + **'Laciniata'** S1938, (Bean I lib)
- 'Maxima'** (RHS 3, EWH)
- + **'Wilsons Wonder'** (Name not confirmed) (Cook 1965)
- + *rupestris (microcarpa)* N.America. (RHS 3, EWH)
- + *sieboldiana*. Maxim. (*ailantifolia*) Japan. Horton, (Bean I lib)

Juniperus: Cupressaceae (8+13)

- + *africanus* (Name not confirmed) D1935,45,46, (Bean I lib)
- + **'Glauca'** (Name not confirmed) H1943,45, (Bean I lib)
- bermudiana* Bernuda Island. W1939, (Bean I lib)
- + *cedrus* Canary Island. H&S1947, (Bean I lib)
- + *chinensis* China, Japan. W1939, D1937,45, (Bean I lib)
- 'Albo Variegata'** D1945, (Bean I lib)
- 'Aurea'** D1945, (Bean I lib)
- 'Aurea Variegata'** D1943, (Bean I lib)
- 'Prostrata Aurea'** (Name not confirmed) D1943, (Bean I lib)
- + *communis* Europe, Asia, America. D1937,45,H&S1948, (Bean I lib)
- 'Compacta'** D1943, (Bean I lib)
- 'Compacta Aurea'** (Name not confirmed) D1943, (Bean I lib)
- + **'Fastigiata' (f. suecica)** D1937, (Bean I lib)

'Hibernica Compressa' (Name not confirmed) H&S1948, (Bean I lib)

conferta Sakhalin, Japan. H&S1948, (Bean S lib)

excelsa **'Stricta'** Caucasus, Asia minor. H&S1947, (Bean I lib)

horizontalis N.America. D1937, (Bean I lib)

'Bar Harbor' H&S1948, (Bean I lib)

'Douglasii' H&S1950, (Bean I lib)

+ *x media* N.E.Asia.

+ **'Pfitzerana'** D1945, (Bean I lib)

'Pfitzerana Aurea' H&S1948, (Bean I lib)

+ *monosperma* N.America. H&S1947,48,50, (Bean I lib)

morrisonicola Taiwan. H&S1948, (Bean S lib)

+ *oxycedrus* Mediterranean, Iran. H&S1947, (Bean I lib)

pachyphlaea (*deppeana* var. *pachyphlaea*) N.America, Mexico. H&S1948, (Bean I lib)

+ *procera* Africa. H&S1947, (Bean I lib)

procumbens (*chinensis* var. *procumbens*) Japan. D1945, new drive, (Bean I lib)

recurva China, Burma. H&S1948,50, (Bean I lib)

+ *recurva* var. *coxii* H1933, S1937, D1945, (Bean S lib)

+ *sabina* **'Knap Hill'** Europe, Asia minor. D1937,45, (Bean I lib)

squamata Afghanistan to Taiwan. H&S1948,50, (Bean I lib)

+ *virginiana* N.America. D1937, (Bean I lib)

+ **'Glauca'** H&S1948, (Bean I lib)

'Schotti' H&S1948, (Bean I lib)

wallichiana (*pseudosabina* Hook.f., not Fisch & May.) Himalaya. H&S1948, (Bean I lib)

Kadsura: Shisandraceae (1+1)

japonica Japan. H&S1948, (Bean I lib)

'Variegata' H&S1964, (Bean EWH), (RHS 3, EWH)

Kalmia: Ericaceae (2+3)

angustifolia N.America. D1941, (Bean I lib)

'Ovata' H&S1950, (Bean I lib)

'Rubra' H&S1950, (Bean I lib)

glauca (*polifolia*) N.America. S1937, (Bean I lib)

+ *latifolia* N.America. S1935,37,39,D1938, (Bean I lib)

'Clementine Churchill' H&S1964, (Bean EWH)

Kennedia: Fabaceae - Papilionaceae (5+0)

comptoniana (Name not confirmed) (Bean S lib)

lindleyana (Name not confirmed) D1946, (Bean S lib)

prostrata Australia. D1947, (Bean S lib)

prostrata var. *marginata* (Name not confirmed) D&D1947, (Bean S lib)

+ *rubicunda* Australia. D1945, (Bean S lib)

stirlingii Australia. D1945,47, (Bean S lib)

Keteleeria: Pinaceae (1+0)

fortunei China. H&S1947, (Bean I lib)

Knightia: Proteaceae

+ *excelsa* New Zealand. (Cook 1965)

Koelreuteria: Sapindaceae (0+1)

- + *paniculata* var. *apiculata* China. H&S1937, (Bean S lib)
paniculata 'Fastigiata' China. H&S1950, (RHS 3, EWH)

Kolkwitzia: Caprifoliaceae

- + *amabilis* China. H1926, S1937,41, (Bean I lib)

Laburnum: Fabaceae - Papilionaceae (3+2)

- adami* (+ *Laburnocytisus adami*) Hort. (Cook 1965)
anagyroides 'Quercifolium' Europe. H&S1950?, (RHS 3, EWH)
caramanicum Greece, Asia minor. H&S1947, (Bean II lib)
 'Glasgow' (Name not confirmed) (PPL)
x watereri (*alpinum x anagyroides*). Hort. D1945, (Bean II lib)

Lagerstroemia: Lythraceae (0+1)

- + 'Eavesii' (*x mathewsii x indica*). Hort. D1945,37, A1939, (Bean S lib)
 'Rubra' Hort. D1945, (Bean S lib)

Lagunaria: Malvaceae

- + *patersonii* Australia. H1937,D1942, (Bean II lib)

Lambertia: Proteaceae (2+0)

- ericifolia* Australia. D1946, (Bean II lib)
formosa Australia. W1946, D1946, (Bean II lib)

Lapergeria: Philesiaceae (1+1)

- rosea* Chile. D1937,41,42,47, (Bean S lib)
 'Alba' (Cook 1965)

Larix: Pinaceae (7+3)

- dahurica* (*gmelini*) E.Siberia. H&S1947, (Bean II lib)
 + *europaea* (*decidua*) Europe
 'Fastigata' H&S1947, (Bean II lib)
 'Pendula' H&S1948, (Bean II lib)
 'Sibirica' (Name not confirmed) H&S1948, (Bean II lib)
 + *x eurolepis* (*decidua x kaempferi*). Hort. H&S1947,50, (Bean S lib)
gmelini (*dahurica*)
griffithii China. H&S1948, (Bean II lib)
 + *leptolepis* (*kaempferi*) Japan. H&S1947, (Bean II lib)
occidentalis N.America. H&S1947,50, (Bean II lib)
x pendula Salis. (*americana pendula*. Loud) Hort?. H&S1946, (Bean S lib)
potaninii China. H&S1947,50, (Bean II lib)
principis var. *rupprechtii* (*gmelini* var. *principis rupprechtii*) Korea. H&S1946,50, (Bean S lib)
sibirica Russia. (Cook 1965)

Lathyrus: Fabaceae - Papilionaceae (1+0)

- pubescens* Chile. (Catalogue 1980)

Laurelia: Monimiaceae (2+0)

- novae-zealandiae* New Zealand. (Cook 1965)
serrata Chile. H&S1947, (Bean II lib)

Laurus: Lauraceae

- + *canariensis* (*azorica*) Canaries. (Bean EWH)

Lavandula: Lamiaceae (1+1)

- lanata* Spain. RHS seed1946, (Bean S lib)

- ‘**Miss Donnington**’ (Name not confirmed) RHS seed1945, (Bean S lib)
- + *stoechas* Mediterranean. RHS seed1946, (Bean S lib)
- Ledum: Ericaceae**
- + *glandulosum* N.America. behind cabin, (Bean II lib)
- Leiophyllum: Ericaceae (1+0)**
- buxifolium* var. *hugeri* N.America. H&S1947, (Bean II lib)
- Leptodermis: Rubiaceae (2+0)**
- kumaonensis* Himalaya. H&S1947, (Bean S lib)
- pilosa* China. H&S1946, (Bean S lib)
- Leptospermum: Myrtaceae (1+5)**
- ‘**Australian pink**’ (NNC) D1942, (Bean II lib)
- persiciflorum* (*squarrosom*) Australia. S1959, (Bean II lib)
- + *lanigerum* Tasmania. S1949, (Bean II lib)
- scoparium* New Zealand.
- ‘**Keatleyi**’ (PPL)
- ‘**Magnifica**’ (Name not confirmed) (PPL)
- ‘**Nichollsii**’ (PPL)
- ‘**Roseum**’ (PPL)
- Lespedeza: Fabaceae - Papilionaceae (1+0)**
- sieboldii* Japan. H1934, (Bean II lib)
- Leucodendron: Proteaceae (9+0)**
- argenteum* S.Africa. D&D1941, (Bean II lib)
- decorum* (Name not confirmed) (PPL)
- discolor* S.Africa. (Cook 1965). D&D1946, (Bean II lib)
- grandiflorum* S.Africa. (Cook 1965)
- salignum* S.Africa. (PPL)
- seriocephalum* S.Africa. (Cook 1965)
- stokoei* (*microcephalum* hyd). S.Africa. D&D1941, (Bean II lib).
- strictum* (*salicifolium*) S.Africa. (Cook 1965)
- venosum* S.Africa. (Cook 1965)
- Leucospermum: Proteaceae (7+0)**
- album* S.Africa. (PPL). 1959, (RHS2).
- attenuatum* (*cuneiforme*) S.Africa. (Cook 1965). 1959, (RHS2).
- bolusii* S.Africa. (PPL)
- catherinae* S.Africa. (PPL). 1959, (RHS2).
- incisum* (*vestitum*) S.Africa. D&D1948, (Bean II lib)
- nutans* S.Africa. (PPL)
- reflexum* S.Africa. D&D1940,42,44,45,46,47, (Bean II lib). 1959, (RHS2).
- Leucothoe: Ericaceae (1+0)**
- racemosa* N.America. H&S1946, (Bean II lib)
- Leycesteria: Caprifoliaceae (2+0)**
- crocothyrsos* Assam. removed, pest, (Bean EWH)
- formosa* Himalaya. as above.
- Lhotskya: Myrtaceae (1+0)**
- genetylloides* (*alpestris*) Australia. W1937, (Bean II lib)

Libocedrus: Cupressaceae (2+0)

- bidwillii* New Zealand. (Cook 1965)
- + *decurrens* (*Calocedrus decurrens*) N.America. D1937, H&S1948, (Bean II lib)
- + *formosana* (*Calocedrus formosana*) Formosa. circus, (RHS 3, EWH)
- + *macrolepis* (*Calocedrus macrolepis*) Yunnan. (Cook 1965). Hill1950, (Bean S lib)
- + *plumosa* New Zealand. (RHS 3, EWH)
- tetragona* (*Libocedrus uvifera*, *Pilgerodendron uviferum*)
Chile, Argentina. circus, (RHS 3, EWH); H&S1948 (Bean II lib)

Ligustrum: Oleaceae (4+0)

- + *confusum* Himalaya, India. H1948
- japonicum* Japan. H&S1948, (Bean II lib)
- + *lucidum* China. H&S1948, (Bean II lib)
- obtusifolium* Japan. (Bean, EWH)
- + *ovalifolium* 'Aureum' Japan. 1914, (Bean II lib)
- + *sinense* China. H&S1948, (Bean II lib)
- vulgare* Europe. (Cook 1965)
- sp Yu* (Cook 1965)

Lindera: Lauraceae (3+0)

- benzoin* N.America. Horton1920, H&S1948, (Bean II lib)
- megaphylla* China. H&S1950, (Bean II lib)
- praecox* Japan, Korea. (Cook 1965)

Lippia: Verbenaceae (1+0)

- citriodora* (*Aloysia triphylla*) Chile. D1941, (Bean II lib)

Liquidamber: Hamamelidaceae

- + *formosana* China. D1939, (Bean II lib)
- + *formosana var. monticola* China. H&S1947, (Bean II lib). D&D1961, (RHS3).
- + *orientalis* Asia minor. H&S1947, (Bean II lib)
- + *styraciflua* 'Festeri' N.America. planted GD, (Bean EWH). D&D1959,61, (RHS3).

Liriodendron: Magnoliaceae

- + *chinense* China. H&S1937, (Bean II lib)

Lithocarpus: Fagaceae (4+0)

- carnea* (Name not confirmed) (RHS 3, EWH) (Could this be *L.corneus* of W.China)
- densiflorus* N.America. Washington Arboretum 1962, (Bean EWH)
- densiflorus var. echinoides* (*echinoides*) N.America. Hill, (RHS 3, EWH)
- pachyphyllus* (*Quercus pachyphylla*). E.Himalaya.

Lomatia: Proteaceae (5+0)

- ferruginea* Chile. H&S1947, (Bean II lib)
- longifolia* Australia. H&S1948, (Bean S lib)
- magellanica* (Name not confirmed) H&S1948, (Bean S lib)
- obliqua* (*hirsuta*) Chile. H&S1947, (Bean II lib)
- salifolia* Australia. D, (Bean II lib)
- + *tinctoria* Tasmania. H&S1948, (Bean S lib)

Lonicera: Caprifoliaceae (11+2)

- caprifolium* Europe, Caucasus, Asia minor. (Cook 1965)
- chrysantha* Asia, Japan. H&S1947, (Bean S lib)
- etrusca* Mediterranean. H&S1948, on white top fence near old shade house

- etrusca* var. *pubescens* Mediterranean. H&S1948, (Bean II lib)
x heckrottii (*sempervirens x americana*). N.America. H&S1946, (Bean II lib)
- + *henryi* China. D1941, (Bean II lib)
- + *hildebrandiana* Himalaya. D1934,41,42, (Bean S lib)
- involuta* N.America. (RHS 3, EWH)
- + *korolkowii* Turkestan. D1941, (Bean II lib)
- + *maackii* China, Japan. G1937, (Bean II lib)
- nitida* China. (Cook 1965)
- plantierensis* (*brownii plantierensis*) Hort. H&S1946, (Bean II lib)
- pyrenaica* Spain. H&S1947, (Bean II lib)
- + *quinquelocularis* Himalaya. H&S1947, (Bean II lib)
- + *sempervirens* N.America. Slocock1938, D1941,42, (Bean II lib)
- + *splendida* Spain. D1941, (Bean II lib)
- + *standishii* China. D1932, (Bean II lib)
- + *syringantha* China. S1935, H1940, (Bean II lib)
- + *tatarica* Russia, Turkestan. seed, (Bean II lib)
- ‘*Pulcherima*’ (‘*Latifolia*’) (Bean II lib)
- ‘*Rosea*’ H&S1957, (Bean II lib)
- x tellmanniana* (*tragophylla x sempervirens* ‘*Superba*’). Hort. S1937, (Bean S lib)
- tragophylla* China. H&S1948, (Bean II lib)
- Loropetalum: Hamamelidaceae**
- + *chinense* China. H1936, S1937, (Bean II lib)
- Luehea: Tiliaceae (1+0)**
- divaricata* ? Sth America. D&D1949, (Bean II lib)
- Luculia: Rubiaceae (4+0)**
- gratisima* Himalaya. H&S1950, (Bean S lib)
- funiana* (Name not confirmed) H&S1950, (Bean S lib)
- grandifolia* Bhutan. 1957, (RHS3).
- pinceana* Nepal, Assam. (Cook 1965)
- Maackia: Fabaceae - Papilionaceae (3+0)**
- amurensis* China. Hill1958, (RHS 3, EWH)
- amurensis* var. *buengeri* Japan. S1939,40, (Bean II lib)
- chinensis* China. (RHS 3, EWH)
- Macadamia: Proteaceae (1+0)**
- ternifolia* Australia. D1942,46, (Bean S lib)
- Mackaya: Acanthaceae (1+0)**
- bella* S.Africa. HZ1948, (Bean II lib)
- Maclura: Moraceae (1+0)**
- pomifera* N.America. (Cook 1965)
- Magnolia: Magnoliaceae (13+18)**
- ashei* N.America. (RHS 3, EWH)
- biondii* China. Hill1964, (RHS3).
- campbellii* ‘*Lanarth*’ (Cook 1965)
- campbellii* ssp. *mollicomata* ‘*Best pink*’ (NNC) Himalaya. H&S1946,48,50,(Bean S lib)
- campbellii* ssp. *mollicomata* ‘*Fastigiata*’ H&S1947, (Bean S lib)

- + **'Charles Raffill'** (*campbellii x mollicomata*). (Cook 1965). H1957, (RHS3).
- + *coco* Java. H&S1947, (Bean S lib)
- + *dawsoniana* China. H&S1937,47, (Bean S lib)
- + *denudata (conspicua, heptapeta)*. China. D1926,37, H&S1947, (Bean II lib)
- + **'Purple eye'** (Bean, EWH)
- late flowering*, (Name not confirmed) (Bean, EWH)
- 'Picture'** (Name not confirmed) (Bean, EWH)
- pure white form* (Name not confirmed) (Cook 1965)
- 'Triumphans'** (Name not confirmed) (Cook 1965)
- + *fraseri (auriculata)* N.America. H&S1937, (Bean II lib)
- + *glauca (virginiana)* N.America. D1934, S1937, (Bean II lib)
- globosa (tsarongensis)* Himalaya. (Bean, EWH)
- globosa var. sinensis (sinensis, nicholsoniana)*. Hort, not Rehd & Wils.) China. H&S1947, (Bean II lib)
- grandiflora longifolia* (Name not confirmed) D, (Bean II lib)
- grandiflora 'Undulata'* N.America. (Cook 1965)
- 'Highdownensis'** (*sinensis x wilsonii*) Hort. H&S1948, (Bean S lib)
- + *hypoleuca (obovata)* Japan. H1937,48, (Bean II lib)
- + *kobus* Japan. D1935,37, H1937, S1938,40,41, (Bean II lib)
- + *liliiflora (purpurea, pentapeta)* China. D1924,37, (Bean II lib)
- 'Nigra'** D1942,43, (Bean II lib)
- + *x loebneri (kobus x stellata)*. Hort. H1950, (Bean II lib)
- 'Merrill'** (Bean, EWH)
- 'Nigra'** (Name not confirmed) (Bean, EWH)
- + *macrophylla* N.America. H&S1937, (Bean II lib)
- mollicomata* see *campbellii ssp. mollicomata*
- nicholsoniana* see *sinensis* China. H&S1938, (Bean S lib)
- + *nitida* China, Tibet. H&S1948, (Bean S lib)
- officinalis* China. H&S1946,48,64, (Bean S lib)
- + *parviflora*. S&Z. (*sieboldii*) Japan. D1937, S1937, H1937, H&S1948, (Bean II lib)
- 'Flore Plena'** D1939, (Bean II lib)
- pyramidata* N.America. (Bean, EWH)
- rostrata* Tibet, China. H&S1947, (Bean S lib)
- + *salicifolia* Japan. H&S1937,47, D1945, (Bean II lib)
- var. concolor* Japan. H&S1948, (Bean S lib)
- sargentiana* China. H&S1937, (Bean S lib)
- + *sargentiana var. robusta* China. H&S1946, (Bean S lib)
- sinensis* see *globosa var. sinensis* China. D1943, (Bean S lib)
- + *soulangiana* Hort.
- + **'Alba'** H&S1937, (Bean II lib)
- 'Alba Superba'** D1947, (Bean II lib)
- + **'Alexandrina'** D1941, (Bean II lib)
- 'Amabilis'** D1946, (Bean II lib)
- + **'Brozzonii'** H&S1937,47, (Bean II lib)
- + **'Lennei'** D1930,37,41, (Bean II lib)
- 'Norbettii'** D1937, (Bean II lib)

- + **'Rustica Rubra'** D1933,37, (Bean II lib)
- + **'Speciosa'** D1942,46, (Bean II lib)
- + **'Verbanica'** 3 planted GD1960, (Bean EWH)
- sprengeri** China. H&S1946, (Bean S lib)
- + **sprengeri var. diva** China. H&S1950, (Bean S lib)
- sprengeri var. elongata** China. H&S1946, (Bean S lib)
- + **stellata** Japan. Horton 1924,1937, (Bean EWH)
- + **'Rosea'** Horton 1924, H1937, (Bean II lib)
- 'Waterlily'** garden. (Bean EWH). Hill, (RHS3).
- + **x thompsoniana** (*virginiana x tripetala*). Hort. H&S1937,50, (Bean II lib)
- + **tripetala** N.America. D1937, S1941, (Bean II lib)
- + **x veitchii** (*campbellii x denudata*). Hort. H&S1937, (Bean S lib)
- + **virginiana (glauca)** N.America. D1937, S1937, H&S1947, (Bean EWH)
- x watsonii** (*hypoleuca x sieboldii*). Hort. H1937, D1938,43, (Bean II lib)
- + **wilsonii** China. H&S1948,S1937,D1955?, (Bean S lib)
- 'Lord Wakehurst'** D1937, 3rd bridge, (Bean S lib)
- Mahonia: Berberidaceae (5+0)**
- fortunei** (*Berberis fortunei*) China. daffodil hill, (Bean, EWH)
- japonica** see *Berberis japonica*
- + **lomariifolia** (*Berberis lomariifolia*) China, Burma. D&D1959, Slocock1938, (Bean EWH)
- nepaulensis** Nepal. H1950, (Bean S lib)
- pinnata** (*Berberis pinnata*) California, Mexico. H1950, (Bean S lib)
- repens var. rotundifolia** see *Berberis repens var. rotundifolia*
- Malus: Rosaceae (9+19)**
- + **'Aldenham Purple'** (from *niedzwetzkyana*). Hort. H&S1947, (Bean II lib)
- 'Aldenhamensis'** (*purpurea* group). Hort. Hudson1947, (Bean II lib). ? 1946, Wilson1947, (Bean S lib)
- + **angustifolia** N.America. S1939,41, (Bean II lib)
- + **x arnoldiana** (*floribunda x baccata*). Hort. W1935,39, H1934,37, (Bean S lib)
- 'Atrosanguinea'** see *floribunda var. atrosanguinea*
- + **baccata** China. H1935, D1937, S1939,40, (Bean II lib)
- + **'Gracilis'** S1939, (Bean II lib)
- + **'Mandshurica'** H&S1947, (Bean II lib)
- + **'Microcarpa'** (Name not confirmed) H&S1946, (Bean II lib)
- 'Coral'** (Name not confirmed) W1939, (Bean II lib)
- coronaria** N.America. S1941, (Bean II lib)
- + **'Charlottae'** H&S1947, (Bean II lib)
- + **'Crimson Glory'** (Name not confirmed) H1942, (Bean II lib)
- 'Crimson King'** (Name not confirmed) T1947, (Bean II lib)
- 'Crimson Red'** (Name not confirmed) (Cook 1965)
- + **'Crimson Rod'** (Name not confirmed) H1942, (Bean II lib)
- + **'Dartmouth'** Hort. Wilson1939, (Bean II lib)
- + **'David Nairn'** (Name not confirmed) D1946, T1947, (Bean II lib)
- 'Eastwoodhill Scarlet'** (Name not confirmed) (PPL)
- + **'Echtermeyer'** (*x purpurea 'Pendula'*) ('Excellenz Thiel' x *niedzwetzkyana*). Hort. H&S1947, (Bean II lib)
- + **'Eleyi'** (*niedzwetzkyana x spectabilis*). Hort. D1942,45,46, Wilson 1946,47. (Bean S lib)

- + *florentina* Italy. H&S1950, (Bean II lib)
- + *floribunda* Japan. D1937,45,46, (Bean II lib)
- floribunda* var. *atrosanguinea* (*x* *atrosanguinea*) (*halliana* x *sieboldii*). D1937, (Bean II lib)
- floribunda* ‘*Hillieri*’ (Name not confirmed) (Bean, EWH)
- ‘*Gibbs Golden Gem*’ H&S1948, (Bean II lib)
- + *glaucescens* N.America. H&S1948, (Bean II lib)
- ‘*Golden Hornett*’
(seedling of *zumi* ‘*Calocarpa*’ according to Hillier. descendent of *prunifolia rinki* according to Bean). Hort. H&S1950, (Bean II lib)
- ‘*Gorgeous*’ (*sieboldii* x *halliana*). Hort. (Cook 1965)
- halliana* ‘*Parkmanii*’ Japan, China. W1935,39, H1937, S1940, (Bean II lib)
- + *x hartwigii* (*baccata* x *halliana*). Hort. H&S1947, (Bean S lib)
- + ‘*Hillieri*’ (*scheideckeri* group). Hort. H&S1946, (Bean II lib)
- + *hupehensis* (*theifera*) China. Slocock 1938, (Bean S lib)
- + *ioensis* ‘*Plena*’ N.America. S1937, H1938, (Bean II lib)
- + ‘*John Downie*’ Hort. D1939, W1939, D1947, (Bean II lib)
- + *x kaido* Hort. D1937, (Bean II lib), see *madgeburgensis*, and *micromalus*.
- + *kansuensis* China. H&S1947, (Bean S lib)
- + ‘*Lady Northcliffe*’ (*baccata* group). Hort. H&S1948, (Bean II lib)
- + *lancifolia* N.America. S1939-41, (Bean S lib)
- + ‘*Lemoinei*’ (*purpurea* group). Hort. H1942, (Bean II lib)
- + *x madgeburgensis* (*kaido*.Dipp) (*pumila* x *spectabilis*). Hort. H&S1947, (Bean II lib)
- + ‘*Mammoth*’ (Name not confirmed) H&S1948, (Bean II lib)
- + *x micromalus* (*kaido*.Parde.) (*baccata* x *spectabilis*). Hort. D1947, H&S1948, (Bean II lib)
- + ‘*Montreal Beauty*’ (*pumila* group). Hort. W1957, (Bean II lib)
- + *niedzwezkyana* (*pumila* var. *niedzwezkyana*) Turkestan. W1935, (Bean II lib)
- prattii* China. H&S1947, (Bean S lib)
- + *prunifolia* Asia.
‘*Cheals Golden Drop*’ (Name not confirmed) (Cook 1965)
- + ‘*Fastigiata*’ H&S1948, (Bean II lib)
- ‘*Hornett*’ (Name not confirmed) (Cook 1965)
- + var. *rinki* (*M.ringo*) Hupeh. S1939, (Bean II lib)
- pumila* Armenia, Europe, Turkestan. (Cook 1965)
- + *x purpurea* (*atrosanguinea* x *niedzwezkyana*). Hort. W1937, D1937, (Bean S lib)
- + ‘*Red Tipped Crab*’ (*coronaria* ‘*Elk River*’ x *niedzwezkyana*). Hort. H&S1948, (Bean II lib)
- rehderiana* (Name not confirmed) H1948, (Bean S lib)
- ‘*Robert Nairn*’ (Name not confirmed) D1946, T1947, (Bean II lib)
- + *x robusta* (*baccata* x *prunifolia*). Hort. H&S1950, (Bean II lib)
- ‘*Red*’ (this must be ‘*Red Siberian*’) (Cook 1965)
- ‘*Yellow*’ (this must be ‘*Yellow Siberian*’) (Cook 1965)
- sargentii* Japan. S1941, Rest & BT, (Bean II lib)
- x scheideckeri* (*floribunda* x *prunifolia*). Hort. (Cook 1965)
- + *sieboldii* (*toringo*) Japan. S1941, (Bean S lib)
- + *sikkimensis* Himalaya. S1939,40, (Bean II lib)
- + ‘*Simcoe*’ (*baccata* x *niedzwezkyana*). Hort. H&S1947, (Bean II lib)
- + ‘*Sir Heaton Rhodes*’ (Name not confirmed) 1942, (Bean II lib)

- ‘**Son of Gorgeous**’ (Name not confirmed) (Cook 1965)
 + *x soulardii* (*pumila x ioensis*). N.America. S1940,H&S1947, (Bean II lib)
 + *spectabilis* China.
 ‘**Flore Albo**’ (Name not confirmed) H&S1948, (Bean II lib)
 + ‘**Riversii**’ H&S1946, (Bean II lib)
 + *x sublobata* (*prunifolia x sieboldii*). Hort. H&S1947, (Bean II lib)
toringoides China. Slocock1938, (Bean S lib)
 + *trilobata* Asia. S1939,41, (Bean II lib)
 + *tschonoskii* Japan. S1940,41, (Bean II lib)
 ‘**Veitchs Scarlet**’ (‘Red Pippins’ x *robusta* ‘Red Siberian’). Hort. H1937, (Bean II lib)
wilsonii (Name not confirmed) (Cook 1965)
 + ‘**Wisley**’ (*niedzwezkyana* seedling). Hort. H&S1947, (Bean II lib)
 ‘**Wrights Scarlet**’ (Name not confirmed) H1942, (Bean II lib)
 + *x zumi* (*baccata* var. *mandshurica x sieboldii*). Japan. S1939, (Bean II lib)
- Mandevilla: Apocynaceae (1+0)**
suaveolens (laxa) Argentina. (Cook 1965)
- Manettia: Rubiaceae (1+0)**
bicolor (inflata) Paraguay, Uruguay. (Cook 1965)
- Manglietia: Magnoliaceae (1+0)**
 + *hookeri* China, Tibet. H&S1950, (Bean S lib)
insignis Yunnan, Burma. H&S1950, (Bean S lib)
- Maytenus: Celastraceae**
 + *chilensis (boaria)* Chile. S1937, (Bean S lib)
- Melaleuca: Myrtaceae (5+0)**
hypericifolia Australia. H&S1948, (Bean II lib)
 + *linariifolia* Australia. D1939, (Bean II lib)
purpurifolia (Name not confirmed) (PPL)
radula Australia. D1946, (Bean II lib)
steedmanii Australia. D ?, (Bean II lib)
wilsonii Australia. (PPL)
- Meliosma: Sabiaceae (3+0)**
 + *cuneifolia (dileniifolia ssp. cuneifolia)* China. H&S1946, (Bean II lib)
pendens (dileniifolia ssp. flexuosa) China. H&S1948, (Bean S lib)
stewardii (myriantha ssp. stewardii) Japan. H&S1947, (Bean S lib)
 + *tenuis (dileniifolia ssp. tenuis)* Japan. H&S1950, (Bean S lib)
veitchiorum China. H&S1948, (Bean II lib)
- Menziesia: Ericaceae (3+0)**
ciliicalyx Japan. H&S1947, (Bean S lib)
ciliicalyx lasiophylla? Japan. H&S1950, (Bean S lib)
purpurea Japan. H&S1946,50, (Bean S lib)
- Metrosideros: Myrtaceae**
 + *tomentosa (excelsa)* New Zealand. (Cook 1965)
- Michelia: Magnoliaceae**
 + *figo* China. T1941, D1941,43, (Bean S lib)
- Mitraria: Gesneriaceae (1+0)**
coccinea Chile. D1944, (Bean S lib)

Montanoa: Asteraceae (1+0)*grandiflora* Mexico. HZ1949, (Bean II lib)**Morus: Moraceae (1+1)**

'Hicks' (Name not confirmed) D1941, (Bean II lib)

nigra Orient. D1941, (Bean II lib)**Murraya: Rutaceae (1+0)***exotica (paniculata)* Asia. HZ1949, (Bean II lib)**Mussaenda: Rubiaceae (2+0)***erythrophylla* W.Africa. HZ1949, (Bean II lib)*frondosa* E.Indies. HZ1949, (Bean II lib)**Mutisia: Asteraceae (5+0)***clematis* S.America. S1938, D1939,47, H&S1950, (Bean S lib)*decurrens* Chile. S1938, Hill1950, (Bean II lib)*ilicifolia* Chile. H&S1947, (Bean S lib)*oligodon* Chile. H&S1946,50, (Bean S lib)*retusa* Chile. H&S1946,50, (Bean S lib)**Myrica: Myricaceae (2+0)***carolinensis (M.cerifera and M.pensylvanicum in part)* N.America. H&S1948, (Bean II lib)+ *cerifera* N.America. H&S1947, (Bean II lib)+ *pensylvanica* N.America. RHS1944, (Bean II lib)*rubra* China, Japan, Korea. (Bean, EWH)**Myricaria: Tamaricaceae (1+0)***germanica* S.Europe, W.Asia. planted GD1960, (Bean EWH)**Myrtus: Myrtaceae (0+1)**+ *bullata (Lophomyrtus bullata)* New Zealand. 1934, (Bean S lib)*communis 'Microphylla'* Mediterranean. H&S1946, (Bean II lib)+ *obcordata (Lophomyrtus obcordata)* New Zealand. W1937, (Bean II lib)+ *ugni (Ugni molinae)* Chile. D1925, (Bean II lib)**Nandina: Berberidaceae (0+2)***domestica* China

'Folius Atropurpureus' (Name not confirmed) D1949, (Bean II lib)

'Gracilis' (Name not confirmed) H1937, (Bean II lib)

Neillia: Rosaceae (1+0)+ *longiracemosa (thibetica)* China. H&S1948, (Bean S lib)*opulifolia lutea* see *Physocarpus opulifolia lutea* N.America. W1937, (Bean II lib)*sinensis* China. (Bean, EWH)+ *thibetica* Himalaya. H1948, (Bean S lib)**Neolitsia: Lauraceae**+ *glauca (sericea)* Japan, Korea, China. H&S1948, (Bean II lib)**Nerium: Apocynaceae (0+8)***oleander* Mediterranean.

'Aureum' (Name not confirmed) (PPL)

'Delphines Crimson' (Name not confirmed) (PPL)

'Dr Golfin' (Cook 1965). IH1946, (Bean II lib).

'Glass Point' (Name not confirmed) D&D1945, (Bean II lib)

'Gloire de Monplaisser' (Name not confirmed) Hill1948, (Bean II lib).

‘**Luteum**’ (Name not confirmed) D&D1945, (Bean II lib)

‘**Luteum Plenum**’ (Cook 1965). Hill1948, (Bean II lib).

‘**Splendens**’ D&D1938, (Bean II lib)

Nestegis: **Oleaceae (1+0)**

lanceolata New Zealand. (Bean II lib)

Neviusia: **Rosaceae (1+0)**

alabamensis N.America. H&S1947, (Bean II lib)

Nolina: **Agavaceae (1+0)**

longifolia Mexico. (Bean II lib)

Notelaea: **Oleaceae**

excelsa (*Picconia excelsa*) see *Olea excelsa* Canary Island, Madeira. Hill1951, (Bean S lib)

Nothofagus: **Podocarpaceae (3+0)**

+ *antartica* Chile. H&S1948, (Bean II lib)

betuloides Chile. H1964, (Bean, EWH)

+ *cliffortioides* (*solandri* var. *cliffortioides*) New Zealand. 1934, (Bean II lib)

+ *cunninghamii* Tasmania. D1943, (Bean II lib)

+ *dombeyi* Chile. FRI1962, (Bean EWH)

+ *fusca* New Zealand. H1940, (Bean II lib)

+ *moorei* Australia. H&S1947, (Bean II lib)

+ *obliqua* Chile. H&S1947, (Bean II lib)

+ *procera* (*alpina*) Chile. H&S1947, (Bean S lib)

pumilio Chile. H&S1964 (Bean EWH)

uliginosa (*antartica* var. *uliginosa*) Chile. H&S1950, (Bean II lib)

Nothopanax: **Araliaceae**

arboreum see *Pseudopanax arboreum* New Zealand. D&D1948, (Bean S lib)

Notospartium: **Fabaceae - Papilionaceae (2+0)**

carmichaeliae New Zealand. (Cook 1965). H1935, (Bean II lib)

glabrescens New Zealand. (Cook 1965). S1939, (Bean II lib)

Nuttallia: **Rosaceae**

cerasiformis (*Oemleria cerasiformis*) see *Osmaronia cerasiformis*

Nyssa: **Nyssaceae (1+0)**

biflora (*sylvatica* var. *biflora*) N.America. (Cook 1965)

+ *sinensis* China. 1961, (Bean, EWH)

Olea: **Oleaceae (2+3)**

+ *europaea* Mediterranean. H&S1948, (Bean II lib)

chrysantha (Name not confirmed, *chrysophylla*?) H&S1950, (Bean II lib)

excelsa (*Notelaea excelsa*) Canary Island, Madeira. Hill1950, (Bean II lib)

lanceolata see *Nestegis lanceolata*

‘**Mangonilla**’ (Name not confirmed) D&D1946, (Bean II lib)

‘**Nevadillo Blanco**’ (Name not confirmed) D&D1946, (Bean II lib)

‘**Servilliana**’ D&D1946, (Bean II lib)

+ *verrucosa* S.Africa. (Bean II lib)

Olearia: **Asteraceae (3+4)**

avicenniifolia New Zealand. D1948, (Bean S lib)

chathamica New Zealand. D1934,47, (Bean S lib)

- gunniana (phlogopappa)* Tasmania.
 ‘Blue Gem’ (Name not confirmed) S1937, (Bean S lib)
 ‘Lavender Beauty’ (Name not confirmed) S1937, (Bean S lib)
 ‘Pink Delight’ (Name not confirmed) S1937, (Bean S lib)
 ‘Splendens’ S1937, (Bean S lib)
insignis (Pachystegia insignis) New Zealand. D1934, (Bean S lib)
 + *paniculata* New Zealand. D1948, (Bean S lib)
Orixa: Rutaceae (1+0)
japonica Japan. H&S1948, (Bean II lib)
Osmanthus: Oleaceae (2+0)
aquifolium (heterophyllus) Japan. H1937, (Bean II lib)
 + *delavayi* China. K1935, S1937, D1938, S1940,41, (Bean II lib)
 + *forrestii (yunnanensis)* China. H1938, (Bean S lib)
 + *fragrans* Himalaya, Japan, China. Horton 1919, HZ1949, (Bean II lib)
serrulatus China. H&S1946, (Bean S lib)
X Osmarea: Oleaceae
 + *burkwoodii* Hort. S1938,40, (Bean S lib)
Osmaronia: Rosaceae (1+0)
 + *cerasiformis (Nuttallia cerasiformis, Oemleria cerasiformis)* California. (PPL)
suavis (Name not confirmed) (Cook 1965)
Ostrya: Betulaceae (1+0)
 + *carpinifolia* Europe, Asia minor. planted 1960 GD, (Bean, EWH)
 + *japonica* Japan, China. H1948, (Bean II lib)
knowltonii N.America
 + *virginiana* N.America. 1957, circus, (Bean, EWH)
Oxydendrum: Ericaceae
 + *arboreum* N.America. W1937, S1938,37, (Bean II lib)
Ozothamnus: Asteraceae (1+0)
ledifolius Tasmania. H&S1948, (Bean S lib)
Paeonia: Ranunculaceae (2+0)
delavayi China. S1937, (Bean S lib)
 + *lutea* China. S1940, (Bean II lib)
pubens (mollis) Hort. S1944, (Bean II lib)
Paliurus: Rhamnaceae (1+0)
ramosissimus (aubletii) China. (Cook 1965)
 + *spina-christi (australis)* S.Europe, Orient. D1957, (Bean II lib)
Panax: Araliaceae (1+0)
trifolius N.America. D&D1943, (Bean S lib)
Panay: (2+0)
sambucifolium (Name not confirmed) (Cook 1965)
tripoleata (Name not confirmed) (Cook 1965)
Pandorea: Bignoniaceae (1+0)
pandorana Australia. (Cook 1965)
Parkinsonia: Fabaceae - Caesalpinaceae (1+0)
aculeata Tropical America. HZ1949, (Bean II lib)

Passiflora: Passifloraceae (3+2)

'Allardii' (*caerulea* 'Constance Elliot' x *racemosa*). Hort. H&S1950, (Bean II lib)

caerulea S.America. H&S1948, (Bean II lib)

cinnabarina Australia. D1946, (Bean II lib)

edulis Brazil. D1946, (Bean II lib)

'Eynsford Gem' Hort. D1946, (Bean II lib)

Paulownia: Bignoniaceae (1+0)

fortunei China, Japan. (RHS 3, EWH)

Pentapterygium: Ericaceae (1+0)

serpens Himalaya. D1942 died, (Bean S lib)

Peraphyllum: Rosaceae (1+0)

ramosissimum N.America. (RHS 3, EWH)

Pernettya: Ericaceae (3+2)

furens Chile. Hill1950,51, (Bean II lib)

mucronata Chile. (Cook 1965). D&D1935, (Bean II lib)

'Bells Seedling' Hill 1947, (Bean II lib)

'Davis Seedling' 1950,51, (Bean II lib)

tasmanica Tasmania. H&S1950, (Bean S lib)

Perovskia: Lamiaceae (1+0)

atriplicifolia Himalaya, Tibet. D1942, (Bean II lib)

Persoonia: Proteaceae (1+0)

pinifolia Australia. D1956, (RHS 3, EWH)

Petrophila: Proteaceae (1+0)

biloba Australia. (RHS 3, EWH)

Petteria: Fabaceae - Papilionaceae

+ *ramentacea* Caucasus. H&S1947,50, (Bean II lib)

Phebalium: Rutaceae (2+0)

billardieri (Name not confirmed) (Cook 1965)

squameum Australia. D&D1926-45, not found K5, K7

Phellodendron: Rutaceae (1+0)

+ *amurense* China. 1920, (Bean S lib)

+ *amurense* var. *lavellei* Japan. S1936, (Bean S lib)

+ *japonicum* (*amurense* var. *japonicum*) Japan. planted GD, (Bean II lib)

sachalinense (*amurense* var. *sachalinense*) Korea, China. Circus, (Bean II lib)

Philadelphus: Saxifragaceae (15+16)

'Argentine' (*virginalis* group). Hort. planted GD1960, (Bean EWH), Hill1950, (Bean II lib).

argyrocalyx (*ellipticus*) New Mexico. (Cook 1965). Hill1958, (RHS3).

'Avalanche' (*lemoinei* group). Hort. H&S1948, (Bean II lib)

'Beauclerk' ('Sybille' x 'Burfordensis'). Hort. planted Triangle, (Bean EWH)

+ **'Belle Etoile'** Hort. H1942, (Bean II lib)

'Banniere' Hort. (*cyosus* group). outside triangle, (Bean EWH). Hill 1950, (Bean II lib)

'Boule d'Argent' (*polyanthus* group). Hort. Hill1950, (Bean II lib)

'Burkwoodii' ('Etoile Rose' x *virginale*). Hort. Hill1936, (Bean II lib)

'Conquette' (*cyosus* group). Hort. above concrete wall, (Bean EWH)

'Coupe d'Argent' (*lemoinei* group). Hort. Hill1950, (Bean II lib)

coulteri Mexico. S1939, (Bean S lib)

- + *delavayi* China, Burma. Hughes 1947, (Bean II lib)
delavayi var. *calvescens* China. H&S1947, (Bean II lib)
 ‘Etoile Rose’ (purpureomaculatus group). Hort. (PPL)
 ‘Favourite’ (polyanthus group). Hort. Hill1946, (Bean II lib)
grandiflorus (*inodorus* var. *grandiflorus*) N.America. (Cook 1965)
incanus sargentianus (could this be *incanus* var. *subcanus*?) H&S1948, (Bean II lib)
x lemoinei (*coronarius x microphyllus*). Hort. (Cook 1965)
 ‘Cristus’ (Name not confirmed) D&D1934, (Bean II lib)
lewisii N.America. D&D1934, (Bean II lib)
microphyllus N.America. H&S1947, (Bean II lib)
 ‘Mont Blanc’ (polyanthus group). Hort. D&D1934, (Bean II lib)
multiflorum plenum (Name not confirmed) (Bean II lib)
x nivalis (*coronarius x pubescens*). Hort. D&D1934, (Bean II lib)
- + *pubescens* var. *intectus* (*intectus*) N.America. H&S1948, (Bean II lib)
 ‘Purpureomaculatus’ (*lemoinei x mexicanus* ‘Rose Syringa’). Hort. (Cook 1965). Nairn, (Bean 2 lib).
sargentianus (Name not confirmed) (PPL)
satsumi (*satsumanus*) Japan. D&D1934, (Bean II lib)
schrenkii Korea. S1939, (Bean S lib)
- + *sericanthus* China. H&S1948, (Bean II lib)
speciosus (*grandiflorus*) N.America. D&D1934, (Bean II lib)
 ‘Sutymannii’ (Name not confirmed) (Cook 1965). D&D1934, (Bean II lib).
 ‘Sybille’ (purpureomaculatus group). Hort. Hill1946, (Bean II lib)
 ‘Virginale’ (virginalis group). Hort. D&D1934, (Bean II lib)
wilsonii (*incanus* var. *subcanus*) China. D&D1934, (Bean II lib)
- X Philageria: Philesiaceae (1+0)*
veitchii Hort. H&S1948, (Bean S lib)
- Philesia: Philesiaceae (1+0)*
buxifolia (*magellanica*) Chile. H1946, (Bean II lib)
- Phillyrea: Oleaceae (2+0)*
decora Caucasus. H&S1946, (Bean II lib)
latifolia Mediterranean. H&S1946, (Bean II lib)
- Phoenix: Aracaceae*
 + *canariensis* Canaries. D1941, (Bean II lib)
- Phormium: Agavaceae (1+6)*
colensoi New Zealand. (Cook 1965)
cookianum New Zealand.
 ‘Tricolor’ (Bean S lib)
- + *tenax* New Zealand.
 ‘Bronze’ (Name not confirmed) (Cook 1965)
 ‘Dwarf Red’ (Name not confirmed) (Cook 1965)
 ‘Rosea Marginata’ (Name not confirmed) (Cook 1965)
 ‘Rosea Variegata’ (Name not confirmed) D&D1948, (Bean S lib)
 ‘Summerse’ (Name not confirmed) H1938, (Bean S lib)
- + ‘Variegata’ (Cook 1965)

Photinia: Rosaceae (3+0)

- + *davidsoniae* China. 1934,55, (Bean II lib)
- glomerata* China. H&S1950, (Bean S lib)
- integrifolia* Himalaya. H&S1947, (Bean S lib)
- prionophylla (Eriobotrya prinoidea)* China. RHSseed1944, (Bean S lib)
- + *subumbellata (parvifolia)* China. H&S1947, (Bean S lib)

Phygelius: Scrophulariaceae (1+0)

- capensis* S.Africa. Goodwin 1947, (Bean II lib)

Phyllocladus: Podocarpaceae (1+0)

- rhomboidalis (asplenifolius)* Tasmania. D1937, (Bean S lib)

Phyllodoce: Ericaceae (3+0)

- aleutica* N.E.Asia to Alaska. H&S1950, (Bean S lib)
- empetriformis* N.America. H&S1947, (Bean II lib)
- nipponica* Japan. H&S1947, (Bean II lib)

X Phyllothamnus: Ericaceae (1+0)

- erectus* Hort. H&S1950, (Bean II lib)

Physocarpus: Rosaceae (1+0)

- opulifolius* Japan. H&S1958, (Bean EWH)

- + **'Aurea'** H&S1958, (Bean EWH)

Picea: Pinaceae (5+8)

- + *abies (excelsa)* Europe. D1946, Wilson1946, (Bean II lib)
- 'Nana'** W1937, (Bean II lib)
- + **'Pendula'** W1937, (Bean II lib)
- 'Pygmaea'** H&S1950, (Bean S lib)
- + *albertiana (glauca var. albertiana)* N.America. H&S1948 5ft 1957, (Bean II lib)
- + *albertiana var. conica (glauca 'Conica')* N.America. H 1942,45, H&S1948,50, (Bean II lib)
- + *alcockiana (bicolor)* Japan. H&S1948, 3ft 1957, (Bean II lib)
- asperata* China. H&S1948, (Bean S lib)
- breweriana* N.America. H&S1948, 15ft 1957, (Bean II lib); not found L12
- + *complanata var. latisquamea (brachytyla f.latisquamea)* China. H&S1948, 5ft 1957, (Bean II lib)
- glauca var. densata* N.America. Clyde Robin 1962, (Bean EWH)
- + *koyamae* Japan. H&S1948, (Bean S lib)
- likiangensis* China. H&S1950, (Bean S lib)
- likiangensis var. purpurea* China. H&S1948, (Bean S lib)
- + *morinda (smithiana)* Himalaya. D, H, W, (Bean II lib)
- + *morindoides (spinulosa)* Himalaya. H&S1950, (Bean II lib)
- + *obovata* Europe, Siberia. H&S1948, 4ft 1957, (Bean II lib)
- + *omorika* Serbia. W1935,37, (Bean II lib)
- 'Pendula'** H & S1950, (Bean II lib)
- 'Pendula Glauca'** (Name not confirmed) H&S1948, (Bean II lib)
- + *orientalis* Caucasus, Asia minor. seed 1937, (Bean II lib)
- 'Aureospicata' ('Aurea')** H&S1948, (Bean II lib)
- + *pungens* N.America. D1937, Wilson1947, (Bean II lib)
- + **'Glauca'** 2nd bridge, (Bean EWH)
- 'Glauca Pendula'** H&S1950, (Bean II lib)
- 'Kosteriana Glauca'** (Bean II lib)

- 'Moerheimii'** Wilson1947, D1947, (Bean II lib)
- + ***rubra (rubens)*** N.America. 1947 ?, (Bean II lib)
- + ***schrenkiana*** Turkestan. H&S1948, (Bean II lib)
- + ***sitchensis*** N.America. H&S1948, (Bean II lib)
- + ***wilsonii*** China. (Bean S lib)
- Picrasma: Simaroubaceae***
- + ***quassioides*** E.Asia. H&S1948, (Bean II lib)
- Pieris: Ericaceae (5+4)***
- + **'Flame of the Forest' ('Forest Flame')** (*formosa* 'Wakehurst' x *japonica*). Hort. H&S1964, (Bean EWH)
- formosa*** Himalaya. D1943, S1941, (Bean II lib)
- + ***forrestii (formosa var. forrestii)*** Burma, China. D1943,46, (Bean S lib)
- 'Jerymyns'** H&S1964, (Bean EWH)
- 'Wakehurst'** H&S1950, (Bean S lib)
- japonica*** Japan. D1945, (Bean II lib)
- 'Pygmaea'** (Name not confirmed). (Cook 1965).
- 'Variegata'** (Cook 1965)
- mariana (Lyonia mariana)*** N.America. H&S1947, (Bean II lib)
- taiwanensis*** Formosa. Wilson1939, D1940, (Bean S lib)
- sp F8945** H&S1950, (Bean S lib)
- Pilgerodendron: Cupressaceae***
- uviferum*** see ***Libocedrus tetragona*** H&S1950, (Bean II lib)
- Pilostegia: Saxifragaceae (1+0)***
- viburnoides*** India, China, Taiwan. H&S1948, (Bean S lib)
- Pimelia: Thymeleaceae (3+0)***
- decussata (ferruginea)*** Australia. D1947, (Bean S lib)
- longifolia*** Australia. D1945, (Bean S lib)
- spectabilis*** Australia. D1947, (Bean S lib)
- Pinus: Pinaceae (8+2)***
- albicaulis*** N.America. H&S1948, (Bean II lib)
- + ***aristata*** N.America. 1964, (RHS3)
- + ***armandii*** China. S1940, (Bean II lib)
- attenuata (tuberculata)***
- + ***ayacahauite*** Mexico. H&S1948,50, (Bean II lib)
- + ***banksiana*** N.America. 1964, (RHS3).
- + ***canariensis*** Canaries. D1947, (Bean S lib)
- caribea*** N.America. G1937, hill top behind cabin, (Bean II lib)
- + ***cembra*** Europe. H&S1948, (Bean II lib)
- + ***cembroides*** Mexico to USA. (Bean II lib)
- + ***contorta*** Alaska to California. H&S1948, (Bean II lib)
- + ***coulteri*** Mexico. H&S1948,50, (Bean II lib)
- + ***echinata*** N.America. (RHS 3, EWH)
- + ***edulis (cembroides var. edulis)*** N.America. H&S1948, (Bean II lib)
- + ***excelsa (griffithii, wallichiana)*** Himalaya, Afghanistan. H&S1950, (Bean II lib)
- flexilis*** N.America. H&S1948, (Bean II lib)
- gerardiana*** Himalaya. H&S1950, (Bean II lib)

- + *hartwegii* (**montezume var. hartwegii**) Mexico. H&S1948, (Bean II lib)
x holdfordiana (*ayacahuite x wallichiana*). Hort. H&S1948, (Bean II lib)
- + *laricio*. Poir. (**nigra var. maritima**) Italy, Sicily, Corsica. H&S1948, (Bean II lib)
- + *laricio var. pallasiana* (Name not confirmed) H&S1948, (Bean II lib)
laricio var. leucodermis (**leucodermis, heldreichii var. leucodermis**)
 Italy, Balkans. H&S1948, (Bean II lib)
- mitis* N.America? H&S1950, (Bean II lib)
- + *montana* (**mugo**) Central Europe, Balkans. H&S1948, (Bean II lib)
- + *montana var. pumilio* Europe. H&S1948,50, (Bean II lib)
- + *montana var. uncinata* (**uncinata**) Pyrenees, Alps. H&S1948, (Bean II lib)
- + *montezume* Mexico. H&S 1950, (Bean II lib)
- + *monticola* N.America. H&S1948, (Bean II lib)
- + *muricata* N.America. 50 at new car shed, (Bean II lib)
- + *patula* Mexico. 1933,34,35,37,45, (Bean S lib)
- + *peuce* Albania, Greece. H&S1948,50, (Bean II lib)
- + *pinaster* Mediterranean. (Bean II lib)
- + *pinea* Mediterranean. (Bean II lib)
- + *resinosa* N.America. G1937, (Bean II lib)
- + *sabiniana* N.America. 1964, (RHS 3, EWH)
- sylvestris* '**Aurea**' Europe. H&S1947,50, (Bean II lib)
sylvestris '**Globosa**' (Name not confirmed) H&S1948, (Bean II lib)
- + *tabuliformis* (**sinensis**) China. H&S1948, (Bean S lib)
- + *taeda* N.America. 1964, (RHS 3, EWH)
- + *torreyana* California. 1964, (RHS 3, EWH)
- tuberuculata* (**attenuata**) N.America. H&S1948,50, (Bean II lib)
- + *virginiana* N.America. H&S1948,50, (Bean II lib)
- + *yunnanensis* (**tabuliformis var. yunnanensis**) China. H&S1948, (Bean II lib)
- Piptanthus: Fabaceae - Papilionaceae**
- + *nepalensis* (**laburnifolius**) Himalaya. Goodwin 1946, seed1946, (Bean II lib)
- Pistachia: Anacardiaceae (3+0)**
- atlantica* Caucasus to Pakistan. H&S1947, (Bean II lib)
- lentiscus* Mediterranean. H&S1950, (Bean II lib)
- terebinthus* Mediterranean. H&S1950, (Bean II lib)
- + *vera* Asia minor, Syria. H&S1947, (Bean II lib)
- Pithecellobium: Fabaceae - Mimosaceae**
- + *pruinatum* Australia. HZ1949, (Bean II lib)
- Pittosporum: Pittosporaceae (8+2)**
- bicolor* Australia. H&S1947, (Bean S lib)
- daphniphyloides* Taiwan. H&S1948, (Bean S lib)
- floribundum* Himalaya. S1940, (Bean II lib)
- heterophyllum* China. S1940, (Bean II lib)
- patulum* New Zealand. H&S1948, (Bean S lib)
- rhombifolium* Australia. seed1963, (RHS3).
- tenuifolium* '**Silver Queen**' (Cook 1965).
- tenuifolium* '**Variegatum**' New Zealand. (Cook 1965)
- tobira* Japan, China. (PPL)

undulatum Australia. too tender here, (Bean II lib)

Plagianthus: Malvaceae (2+0)

betulinus New Zealand. (Cook 1965)

divaricatus New Zealand. D&D1934, (Bean S lib)

Platanus: Platanaceae

+ *x acerifolia* (*orientalis x occidentalis*). Hort. H&S1947, (Bean II lib)

+ *orientalis* Europe, Asia minor. H&S1946, (Bean II,lib)

+ *orientalis var. cuneata (cuneata)* Europe. H&S1937,47, (Bean II lib)

+ *orientalis var. insularis (cretica)* Europe. H&S1937, (Bean II lib)

+ *racemosa* California. H&S1947, (Bean II lib)

Plumbago: Plumbaginaceae (1+0)

capensis (auriculata) S.Africa. (Cook 1965)

Plumeria: Apocynaceae (1+0)

acutifolia (rubra var. acutifolia) Mexico, S.America. HZ1949, (Bean II lib)

Podalyria: Fabaceae - Papilionaceae (4+0)

buxifolia S.Africa. D&D1947, (Bean II lib)

calyptrata S.Africa. (Catalogue 1980)

laxifolia S.Africa. (Cook 1965)

sericea S.Africa. (Cook 1965)

Podocarpus: Podocarpaceae (4+0)

alpinus Tasmania. H&S1947, (Bean II lib)

+ *andinus (Prumnopitys elegans)*

+ *chilinus (salignus)* Chile. H&S1947, Circus, (Bean II lib)

elatus Australia. HZ1949, (Bean II lib)

gracilior E.Africa. H&S1948, (Bean S lib)

+ *latifolius* S.Africa. H&S1948, (Bean S lib)

+ *macrophyllus* China, Japan. H&S1948, (Bean II lib)

nagi Japan. H&S1948, (Bean S lib)

Poinciana: Fabaceae - Caesalpinaceae (1+0)

regia Madagascar. 1957, (RHS3).

Polygala: Polygalaceae (4+0)

grandis (Name not confirmed) D1942, (Bean S lib)

myrtifolia var. grandiflora ('Dalmaisiana') S.Africa. (Cook 1965). H1937, (Bean II lib).

oppositifolia S.Africa. D1942, (Bean S lib)

virgata S.Africa. D1942, (Bean S lib)

Polygonum: Polygonaceae (1+0)

baldshuanicum Russia, Afghanistan, Pakistan. S1938,41, (Bean II lib)

Populus: Salicaceae (18+1)

+ *alba 'Pyramidalis' ('Bolleana')* Europe, Africa, Asia. Horton 1913, G1947, (Bean II lib)

+ *angulata (deltoides 'Carolin')* N.America. H&S1947, (Bean II lib)

balsamifera (tacamahacca) N.America. (Cook 1965). H&S1947, (Bean II lib)

x berolinensis (laurifolia x nigra 'Italica'). Hort. H&S1947, (Bean II lib)

canescens Europe. H&S1947, (Bean II lib)

caudina (nigra var. pubescens, nigra ssp. caudina) S.Europe, N.Africa. H&S1948, (Bean S lib)

eugenei (x canadensis 'Eugenei') N.America. G1947, (Bean II lib)

fremontii N.America. H&S1947, (Bean II lib)

- x generosa* (*deltoides* 'Cordata' x *trichocarpa*). Hort. G1947, (Bean II lib)
grandidentata N.America. (Cook 1965). D&D1960, (Bean EWH)
lasiocarpa var. *tibetica* (Name not confirmed) (Cook 1965)
lasiocarpa var. *violescens* (Name not confirmed) (Cook 1965)
laurifolia India, Siberia, Japan. H&S1947, (Bean II lib)
marilandica (*x canadensis* 'Marilandica') Hort. G1947, (Bean II lib)
maximowiczii China, Japan. H&S1947, (Bean S lib)
monolifera (*deltoides*)
 'Aurea' N.America. W1937, (Bean II lib)
nigra var. *betulifolia* France. S1947, (Bean II lib)
+ *nigra* 'Italica' Europe. S1947, (Bean II lib)
regenerata (*x canadensis* 'Regenerata') Hort. S1947, (Bean II lib)
robusta (*x canadensis* 'Robusta') Hort. G1947, (Bean S lib)
+ *serotina* (*x canadensis* 'Serotina') Hort. G1947, (Bean II lib)
+ *serotina* 'Aurea' (*x canadensis* 'Serotina Aurea') Hort. D1937, (Bean II lib)
+ *suaveolens* China. H&S1947, (Bean II lib)
tibetica (*szechuanica* var. *tibetica* ?) China. Circus, GD, (Bean EWH)
+ *tremula* Europe, Africa, Asia. H&S1948, (Bean II lib)
tremuloides N.America. Horton, (Bean II lib)
trichocarpa N.America. S1947, (Bean II lib)
violascens (*szechuanica* var. *tibetica*) China. H&S1960, planted GD, (Bean EWH)
+ *wilsonii* China. H&S1937, (Bean S lib)
Posoqueria: Rubiaceae (1+0)
multiflora Brazil. HZ1949, (Bean II lib)
Potentilla: Rosaceae (2+5)
fruticosa Europe.
 'Orbiscula' (Name not confirmed, *P.arbuscula*?) H&S1964, (Bean EWH)
 'Rigida' (Name not confirmed, *P.rigida*?) H&S1964, (Bean EWH)
 'Veitchii' (*fruticosa* var. *veitchii*, *davurica* var. *veitchii*) (Cook 1965)
 'Katherine Dykes' Hort. H&S1958, (Bean EWH)
 'Klondyke' Hort. D&D1961, (Bean EWH)
x sulphurescens (*arbuscula* x *davurica*). China. (Bean EWH)
wardii (Name not confirmed) (Cook 1965)
Prinsepia Rosaceae
+ *uniflora* China. S1937,39, (Bean S lib)
Prosopis: Fabaceae - Mimosaceae (1+0)
nigra (Name not confirmed) seed1948, (Bean S lib)
Prostanthera: Lamiaceae (2+2)
coccinea (Name not confirmed) D1940,41 died, (Bean S lib)
 'Edgintonii' (Name not confirmed) D1946, (Bean S lib)
incisa Australia. H1945, (Bean S lib)
 'Coccinea' (Name not confirmed) (PPL)
+ *ovalifolia* Australia. D1945, (Bean S lib)
+ *rotundifolia* Australia. H1937,45, D1942, T1947, (Bean S lib)

Protea: Proteaceae (13+3)

- cynaroides* S.Africa. (Bean S lib)
grandiceps S.Africa. (Bean S lib)
incompta (coronata) S.Africa. (Cook 1965)
lacticolor S.Africa. (Bean S lib)
latifolia (eximea) S.Africa. (Bean S lib)
latifolia 'Glauca' S.Africa. (Bean S lib)
longiflora (aurea) S.Africa. (Cook 1965)
longiflora rubra (Name not confirmed) (Cook 1965)
longifolia S.Africa. (PPL)
marginata (laurifolia) S.Africa. (Bean S lib)
mellifera S.Africa. (Bean S lib)
 '**Alba**' (Bean S lib)
neriifolia S.Africa. (Bean S lib)
pulchella S.Africa. (Bean S lib)
scolymocephala S.Africa. (Bean S lib)
susannae S.Africa. (Bean S lib)

Prumnopitys: Podocarpaceae

- elegans* see *Podocarpus andinus* Chile. D1937,45, H&S1948, (Bean II lib)

Prunus: Rosaceae (30+38)

- ambigua* (Name not confirmed) H&S1947, (Bean II lib)
+ *amygdalus (dulcis)* N.Africa.
+ '**IXL**' Wilson 1947, (Bean II lib)
+ '**Early Jordan**' (Name not confirmed) Wilson 1947, (Bean II lib)
+ '**Lady Lyle**' (Name not confirmed) W1937, (Bean II lib)
+ '**Monovale**' (Name not confirmed) Wilson 1947, (Bean II lib)
+ '**Paper Shell**' (Name not confirmed) Wilson 1947, (Bean II lib)
+ *apetala (tschonoskii)* Japan. S1940, (Bean S lib)
+ *armeniaca* C.Asia, China. A1939, (Bean II lib)
 var. ansu Japan. H&S1948, (Bean II lib)
 var. mandhsurica Korea. H&S1948, (Bean II lib)
+ *avium 'Plena'* Europe. Slocock 1938, (Bean II lib)
besseyi (pumila var. besseyi) N.America. S1937, (Bean II lib)
+ *x blireana* (*cerasifera* 'Atropurpurea' x *mume*). Hort. D1942,45,46, T1947, (Bean II lib)
 '**Moseri**' D1945, (Bean II lib)
+ *campanulata* Japan. S1939, D1940,43,45,47, (Bean S lib)
 '**Pendula**' (Name not confirmed) (Ingram)
+ '**Plena**' H&S1947,48, (Bean S lib)
+ *canescens* China. H&S1947, (Bean II lib), (Ingram)
+ *cerasifera* Asia minor.
+ '**Lindsayae**' H&S1950, (Bean II lib)
+ '**Nigra**' D1942,45, (Bean II lib)
+ '**Pissardii**' ('**Atropurpurea**') D1942, (Bean II lib)
+ '**Pissardii Diversifolia**' (*var. diversifolia*) D1937, (Bean II lib)
+ '**Vesuvius**' (Cook, 1965)

- cerasus* S.W.Asia. (Cook 1965)
- + *concinna* China. H&S1946, (Bean S lib), (Ingram)
- + *decora* (Name not confirmed) (Ingram)
- dehiscens (tangutica)* China. H&S1948,50, (Bean S lib)
- demissa (virginiana var. demissa)* N.America. H1947, (Bean II lib)
- erecta* (Name not confirmed, *serrulata f. erecta* = Amanogawa ?) (RHS 3, EWH)
- fasciculata* N.America. H&S1947, (Bean II lib)
- fruticosa* Europe. (Ingram)
- + *glandulosa* China.
- ‘Alba Plena’ (Cook 1965)
- ‘Rosea’ (Cook 1965)
- glandulosa salicifolia* (Name not confirmed) (Ingram)
- ‘Hiawatha’ (Name not confirmed) (PPL)
- + *incisa* Japan. S1938,40, (Bean S lib)
- integrifolia* California. H&S1947, (Bean II lib)
- japonica* China to Korea. D1939, (Bean II lib)
- ‘Flore Plena’ (Name not confirmed) Horton ?, (Bean II lib)
- + *x juddii (sargentiana x yedoensis)* Hort. H&S1948, (Bean II lib)
- + *kanzakura rubra (x kanzakura ‘Rubescens’)* (*campanulata x lannesiana var. speciosa*) Hort. H (12), (Bean II lib)
- + *laurocerasus* Europe, Asia minor. Horton 1911, (Bean II lib)
- longipes simonzii* (Name not confirmed) (RHS 3, EWH)
- + *lusitanica* Spain, Portugal. Horton 1914, (Bean II lib)
- magnifica* (Name not confirmed) 1937
- maritima* N.America. S1939,40, (Bean II lib)
- + *mume* Japan. W1937, (Bean II lib)
- ‘Charles Abraham’ (Name not confirmed) (PPL)
- + ‘Celestial Dawn’ D1945, (Bean II lib). D1937, (Bean II lib)
- + ‘Rosea Flore Plena’ D1945, (Bean II lib)
- ‘Splendens’ D1945, (Bean II lib)
- + ‘The Geisha’ D1937, (Bean II lib)
- nigra* N.America. H&S1947, (Bean II lib)
- + *nipponica* Japan. S1939,41, (Bean S lib), (Ingram)
- + ‘Okame’ (*x incam ‘Okame’*) (*campanulata x incisa*). Hort. H&S1950, (Bean II lib)
- + *padus* Europe, Asia, Japan. N1935, S1937, (Bean II lib)
- + ‘Albertii’ H&S1937,47, (Bean II lib)
- ‘Flore Plena’ (‘Plena’ ?) (Cook 1965)
- ‘Knap Hill’ (Name not confirmed) (Cook 1965)
- ‘Watereri’ Slocock 1938, (Bean II lib)
- + *persica* China.
- ‘Alba Plena’ (Cook 1965)
- ‘Carsons Red’ (Name not confirmed) (Cook 1965)
- ‘Clara Meyer’ D1945, (Bean II lib)
- ‘Harbinger’ (Name not confirmed) H1942, (Bean II lib)
- ‘Harbinger White’ (Name not confirmed) (Cook 1965)

- 'Iceberg' (Cook 1965)
 'Magnifica' W1937, (Bean II lib)
 'Rosea Plena' (Name not confirmed) (Cook 1965)
 'Sanguinea Flore Plena' D1946, (Bean II lib)
 'Sanguinea Splendens' (Name not confirmed) D1945, (Bean II lib)
 'Wendle Weeping' H&S1958, (Bean II lib)
- pilosiuscula* China. (Ingram)
pilosiuscula var. media China. S1940, (Ingram), (Bean S lib)
platycarpa (Name not confirmed) S1940, (Bean S lib)
platycarpa media? (Name not confirmed) S1940, (Bean S lib)
prostrata Balkans to Asia minor. H&S1947, (Bean II lib)
pseudocerasus China. (Cook 1965)
- 'Watereri' see *sieboldii* (PPL)
- + *puddum (cerasoides)* China. H&S1948, (Bean II lib)
 + *sargentii* Japan. S1940, (Bean II lib)
sargentii bestinthiflorum (Name not confirmed) H&S1947, (Bean II lib)
scoparia Iran. H&S1948, (Bean II lib)
- + *serotina* N.America. Slocock1938, (Bean II lib)
serrula f.splendens see *serrulata* 'Hisakura'
- + *serrula var. tibetica (serrula)* China. H&S1950, (Bean S lib), (Ingram)
serrulata China.
- 'Albo Rosea' (Name not confirmed) (Ingram)
- + 'Alisons Pink' (Name not confirmed) W1939, (Bean II lib)
 'Amano-gawa' ('Erecta', *serrulata f.erecta*) H1946, (Bean II lib). S1937, (Bean II lib)
- + 'Asano' (*serrulata f.geraldinae*) H&S1947, (Bean II lib)
 + 'Ashi-botan' (Name not confirmed) H1937, (Bean II lib)
 + 'Botrykawa' (Name not confirmed) D1937, (Bean II lib)
- 'Daikoku' (Cook 1965)
 'Fugenzo' see 'J.H.Veitch'
- + 'Hisakura' (*serrulata f.splendens*) D1937, Wilson 1947, (Bean II lib)
 + 'Hokusai' H&S1948, (Bean II lib)
 + 'J H Veitch' ('Fugenzo', 'Kofugen', 'Benifugen')
 H1937, D1945, Wilson1946, (Bean II lib)
- + 'Kanzan' (*serrulata f.purpurascens*) H&S1948, (Bean II lib)
 'Kazakura' (Name not confirmed) D1937, (Bean II lib)
- + 'Kofugen' ('Fugenzo') D1937, (Bean II lib)
- + *f.longipes* ('Shimidsu') H&S1948, (Bean II lib). Slocock1938, (Bean S lib)
- + 'Mt Fuji' (Not the same as 'Shirotae' according to Bean & Hillier)
 D1957, Wilson1947, (Bean II lib)
- 'New Red' (Name not confirmed) Wilson 1946, (Bean II lib)
- + 'Ojoichin' (*lannesiana* 'Ojoichin') D1937, (Bean II lib)
- 'Okiku' H&S1947, (Bean II lib)
- + 'O'Naden' (*lannesiana* 'Ohnaden') H1937, D1937, (Bean II lib)
- pendula lanceolata* (Name not confirmed). (Ingram)
- 'Splendens' (is this 'Hisakura' ?) H&S1950, (Bean S lib)
- + 'Tai Haku' H&S1948, (Bean II lib)

- + ‘**Temari**’ (*lannesiana* ‘**Temari**’) (Cook 1965)
 + ‘**Yukon**’ D1946, (Bean II lib)
 + *x sieboldii* (‘**Takasago**’, *pseudocerasus* ‘**Watereri**’, *serrulata f. sieboldii*)
 (*apetala x speciosa*). Hort. D1937, (Bean II lib)
 ‘**Pendula**’ (Name not confirmed) W1946, (Bean S lib)
 + ‘**Superba**’ (Name not confirmed) W1939, (Bean S lib)
 ‘**Watereri**’ (Name not confirmed) D1939, (Bean II lib)
 spinosa ‘**Plena**’ Europe, N.Africa, W.Asia. (Cook 1965)
 subhirtella Japan.
 + *var. ascendens* H&S1950, (Bean II lib)
 ‘**Ascendens Flore Plena**’ (Name not confirmed) H&S1948, (Bean II lib)
 + ‘**Autumnalis**’ S1938, (Bean II lib)
 + ‘**Fukubana**’ H&S1946, (Bean II lib)
 + ‘**Pendula**’ H1935, (Bean II lib)
 ‘**Pendula Rosea**’ H&S1950, H1937, (Bean II lib)
 + ‘**Pendula Rubra**’ H&S1946, (Bean II lib)
 tangutica (dehiscens) China. H&S1948, (Bean II lib)
 tenella Russia, Asia to Siberia. garden, (Bean EWH)
 + *tschonoskii (apetela)* (RHS 3, EWH)
 + *tomentosa* China, Japan. S1938,39, (Bean II lib)
 ‘**Rosea**’ (Name not confirmed) S1940, (Bean II lib)
 var. endotricha China. S1938, (Bean II lib)
 triloba China. Cook, (Bean II lib)
 ‘**Flore Plena**’ D1942, (Bean II lib)
 virginiana var. demissa N.America. (Ingram)
 + *x wrightii* Hort. H1945, (Bean II lib)
 + *x yedoensis (yoshino)* (*speciosa x subhirtella*). Japan. Japan 1920, S1939,41, (Bean S lib)
 7728 S1941, (Bean S lib)
 + ‘**Purpurens**’ (‘**Pendula**’) H&S1947,50, (Bean S lib). D1937, (Bean II lib)
- Pseudolarix: Pinaceae**
- + *amabilis* China. H&S1939,46,48, (Bean II lib)
- Pseudotsuga: Pinaceae (2+4)**
- japonica* Japan. H&S1947,50, (Bean II lib)
- + *macrocarpa* N.America. H&S1947,50, (Bean II lib)
- menziesii (taxifolia)* N.America.
 ‘**Fletcheri**’ (*fletcheri*) H&S1948, (Bean S lib)
 ‘**Glauca**’ H&S1950, (Bean II lib); gone H7
 ‘**Moreheimii**’ (*moreheimii*) H&S1948, (Bean S lib)
 ‘**Pendula**’ H&S1948, (Bean II lib)
 wilsoniana China. H&S1950, (Bean S lib)
- Psidium: Myrtaceae (1+0)**
- cattleianum* Brazil. RHS1962, (RHS3).
- Psoralea: Fabaceae - Papilionaceae (1+0)**
- pinnata* S.Africa. HZ1949, (Bean II lib)
- Pterocarya: Juglandaceae (1+0)**
- + *caucasica (fraxinifolia)* Caucasus. S1941, (Bean II lib)

- rhoifolia* Japan. H&S1947, (Bean II lib)
stenocarpa ? (Name not confirmed) M1939, (Bean II lib)
- Pterostyrax: Styracaceae (1+0)**
dissecta (Name not confirmed) W1937, (Bean II lib)
+ *hispidia* Japan. H&S1937, S1937, (Bean II lib)
- Pultenaea: Fabaceae - Papilionaceae (1+0)**
rosea Australia. D1942, (Bean II lib)
- Punica: Punicaceae (0+2)**
granatum Europe, Himalaya.
+ 'Albo Plena' ('Multiplex') H&S1948, (Bean II lib)
'Andre Leroy' HZ1949, (Bean II lib)
'Nana Gracillima' H&S1948, (Bean II lib)
- Pyracantha: Rosaceae (1+1)**
+ *angustifolia* China. H1935, (Bean II lib)
coccinea 'Lalandei' Italy, Asia minor. 1934, (Bean II lib)
rogersiana (*crenulata* var. *rogersiana*) China. (Cook 1965)
+ *yunnanensis* (*crenato-serrata*) China. (Cook 1965)
- Pyrus: Rosaceae (2+1)**
+ *alnifolia* (*X Sorbopyrus alnifolia*) Hort. H&S1948, (Bean II lib)
+ *auricularis* (*X Sorbopyrus auricularis*) Hort. H&S1947, (Bean II lib)
+ *folgneri* (*Sorbus folgneri*) China. H&S1947, (Bean II lib)
foliolosa (*Sorbus foliolosa*) Himalaya, Burma, China. H&S1947, (Bean II lib)
+ *pashia* China. S1949, (Bean II lib). RHS1962, (RHS3).
rehderiana (Name not confirmed, *Sorbus rehderiana*?) H&S1948, (Bean S lib)
salicifolia 'Pendula' Caucasus. H&S1937, (Bean II lib)
- Quamoclit: Convolvulaceae (1+0)**
lobata (*Mina lobata*, *Ipomaea versicolor*) Mexico. (RHS 4,EWH)
- Quercus: Fagaceae (15+5)**
+ *aegilops* (*macrolepis*) Europe, Asia. H&S1947, (Bean II lib). sedd1962, (RHS4).
alnifolia Cypress. D1958, (RHS 4,EWH)
+ *ambroziana* (*hispanica* 'Ambroziana') Spain, Portugal, Italy. planted DP, (Bean EWH)
+ *aquifolioides* (*semecarpifolia*) China. planted DP, (Bean EWH)
+ *arkansana* N.America. H1964, (RHS 4,EWH)
breweri (*garryana* var. *breweri*) California. H&S1964, (RHS 4,EWH)
castaneifolia Caucasus, Iran. H&S1946, (Bean II lib)
cerris 'Variegata' Europe, Asia minor. H&S1947, (Bean II lib)
chrysolepis var. *vacciniifolia* see *vacciniifolia* N.America. (Cook 1965)
+ *conferta* (*frainetto*) Balkans, Italy. H&S1939,50, (Bean II lib)
crispula see *mongolica* var. *grosseserrata* Japan. (RHS 4,EWH)
cuspidata see *Castanopsis cuspidata* Japan, Korea. H&S1947, (Bean II lib)
+ *dentata* Japan. H&S1947, (Bean II lib)
+ *douglasii* N.America. Hill1964, (RHS 4,EWH)
echinoides see *Lithocarpus echinoides* N.America. D&D1958, (RHS 4,EWH)
edithae (Name not confirmed) M1939, (Bean S lib)
emoryi N.America. (RHS 4,EWH)
engelmannii N.America. (RHS 4,EWH)

- frainetto* var. *shirainum* (Name not confirmed) (Cook 1965)
- glabra* see *Lithocarpus glabra* China, Japan. H&S1937,47, (Bean II lib)
- + *glandulifera* (*serrata*.Thunb.) Korea, China, Japan. Hill1964, seed1963, (RHS4).
- grosseserrata* (*mongolica* var. *grosseserrata*) Japan. H&S1947, (Bean II lib)
- hartwissiana* Bulgaria, Asia minor. H1964, (RHS 4,EWH)
- hondai* (Name not confirmed) Berry 1966, (Bean EWH)
- hypoleucoides* N.America. H1964, (RHS 4,EWH)
- + *ilex* Mediterranean. Horton, (Bean II lib)
- ‘**Latifolia**’ planted GD1960, (Bean EWH)
- + *ilicifolia* N.America. planted PP, (Bean EWH)
- + *incana*.Roxb. (*leucotricophora*.Camus.) China. H&S1947, (Bean S lib)
- + *ithaburensis* (*aegilops* var. *ithaburensis*) Asia. Hill1964, (RHS4).
- + *lamellosa* Himalaya. H&S1946, (Bean S lib)
- x leana* (*imbricaria x velutina*). N.America. H&S1946, (Bean II lib)
- + *libani* Syria, Asia minor. H&S1946, (Bean II lib)
- lusitanica* Webb, not Lam. Spain, Portugal. Mason 1939, (Bean II lib)
- + *lyrata* N.America. H&S1947, (Bean II lib)
- + *mirbeckii* (*canariensis*) Spain, Africa. H&S1939,47,50, (Bean II lib)
- + *mirbeckii* ‘**Latifolia**’ (*canariensis* ‘**Latifolia**’) 1950,51, (Bean II lib)
- + *myrsinifolia* (*vibrayeana*) Japan, China. H&S1947, PP, (Bean II lib)
- pachyphylla* see *Lithocarpus pachyphyllus* H&S1947, (Bean II lib)
- + *prinus* N.America. H&S1947, (Bean II lib)
- robur* Europe.
- + ‘**Concordia**’ H&S1950, (Bean II lib)
- ‘**Dissecta**’ (Name not confirmed) H&S, (Bean II lib)
- + ‘**Filicifolia**’ H&S1946,50, (Bean II lib)
- + ‘**Heterophylla**’ (‘**Fenessii**’) H&S1947, (Bean II lib)
- ‘**Purpurescens**’ H&S1946,50, (Bean II lib)
- + *rubra* N.America. H&S1946,48, (Bean II lib)
- ‘**Aurea**’ H&S1937,50 died, (Bean II lib)
- sadleriana* California. (Cook 1965)
- + *salicina* (*stenophylla*) Japan. Mason 1939, (Bean II lib)
- + *serrata*.S&Z. (*acutissima*) Japan, China. H&S1947, (Bean II lib)
- serrata* Thunb. see *glandulifera*
- + *sessiliflora* (*petraea*) Europe, Asia minor. S1938, (Bean II lib)
- + ‘**Mespilifolia**’ H&S1939,47, (Bean II lib)
- + ‘**Rubicunda**’ (‘**Purpurea**’) H&S1947, (Bean II lib)
- + *shumardii* var. *schneckii* (*shumardii*) N.America. H&S1964, (Bean EWH)
- + *suber* Europe, N.Africa. seed gisborne tree, (Bean II lib)
- vacciniifolia* (*chrysolepis* var. *vacciniifolia*) N.America. 1958, PP, (RHS 4,EWH)
- + *vibrayeana* (*myrsinifolia*) China, Japan. PP, (Bean II lib)
- Quisqualis: Combretaceae (1+0)**
- indicum* Burma to New Guinea. HZ1949, (Bean II lib)
- Raphiolepis: Rosaceae (1+0)**
- x delacourii* (*indica x umbellata*). Hort. H&S1946, (Bean II lib). D&D1959, (RHS4).

*Reevesia: Byttneriaceae (1+0)**thyrsoidea* China to Java. Hill1957, (RHS 4,EWH)*Rhabdothamnus: Gesneriaceae (1+0)**solandri* New Zealand. D&D1945, (Bean II lib)*Rhaphithamnus: Verbenaceae*+ *cyanocarpus (spinosus)* Chile. Circus, (RHS4).*Rhododendron: Ericaceae (191+19)*+ *aberconwayi* Yunnan. Massey 1962, (Bean EWH)*aeruginosum (campanulatum ssp. aeruginosum)* Sikkim, Bhutan. D&D1947, (Bean II lib)*albrechtii* Japan. McK1946, M1947, (Bean S lib)*annae* Yunnan, Burma. Hill 1964, (Bean EWH)*anthopogon* Himalaya, Kashmir. H&S1947, (Bean II lib)*apodectum (dicroanthum ssp. apodectum)* Yunnan, Burma. D1947, (Bean S lib)+ *arborescens* N.America. Hill1964, (RHS3).+ *arboreum* Kashmir, Nepal, Sikkim. D1945, (Bean II lib)‘**Bennetts variety**’ (Name not confirmed). Cabin Park, (PPL).+ ‘**Kermesium**’ (Name not confirmed) D&D1937, (Bean II lib)‘**Pink**’ (Name not confirmed). Cabin Park, (PPL).+ ‘**Rubrum**’ (Name not confirmed) W1937, (Bean II lib)*argyrophyllum* Szechuan. H&S1964, (Bean EWH, RH63). Hill1960, (RH56).‘**Roseum**’ (Name not confirmed). (Cook 1965)*arizelum* China, Burma, Tibet. Hill1963, (RH56).+ *augustinii (chasmanthoides)* China. D1947, M1947, (Bean II lib). Massey 1962, (Bean EWH)‘**Rothschild Best Blue**’ Hill1948, (Bean II lib)‘**Tower Court**’ (Name not confirmed). (Cook 1965)*aureum (chrysanthum)* Korea, Japan, China. beyond cabin, (Bean S lib)*auriculatum* Hupeh. D1935,41, (Bean II lib)*baileyi (thyodocum)* E.Himalaya. H&S1950, (Bean S lib). Hill1962, (Bean EWH). Hill1964, (RH56).+ *barbatum* Himalaya. D1935,37, H&S1947, (Bean II lib)+ ‘**Meteor**’ (Name not confirmed). (Cook 1965)**Pink form** (Name not confirmed). (Cook 1965)*basilicum* China. (Cook 1965)*bauhiniiflorum (triflorum var. bauhiniiflorum)* Manipur. (Bean EWH). M1960, (RH56).*beanianum* Burma. Hill1948,50, (Bean S lib). Hill1963, (RH56).*beesianum (collectum, emaculatum)* Yunnan, Szechuan, Himalaya. H&S1950, (Bean S lib)*broughtoni aureum* (Name not confirmed) cabin, (Bean EWH)*bullatum (edgworthii)* Yunnan, Bhutan, Tibet, Burma.

D1935, (Bean S lib). M1964, (RH63). Russell1950, (RH47).

caeruleum (rigidum) Yunnan. H&S1950, (Bean S lib)*calendulaceum* N.America. S1935, (Bean II lib). Hill1964, (RHS4). M1949, (RH47).*callimorphum* China. Russell 1950, (RH47).*calophyllum* (Name not confirmed). (could this be *calophytum*?). (Cook 1965)*calostrotum* Burma. M1947, H&S1947,50, (Bean S lib). Hill1964, (Bean EWH)‘**Red Form**’ (‘**Gigha**’) Hill 1964, (Bean EWH)*camelliaeflorum* (Name not confirmed). M1964, (RH63).

- campanulatum* Kashmir, Bhutan. D1947, (Bean II lib)
 ‘Knap Hill’ Hill1950, (Bean II lib)
- + *campylocarpum* Nepal, Sikkim, Assam, Burma, Tibet.
 H&S1948, Russell1949, (Bean S lib) D&D1945, Massey1947, (Bean II lib)
 ‘Earl Morley’ (Name not confirmed) D&D1945, (Bean II lib)
- campylogynum* Burma. Hill1946, (RH56). H1950, (RH47).
var. cremastum Hill1964, (RH63).
var. myrtilloides Burma. Hill1964, (RH63).
- camtschaticum* Alaska, Russia, Japan. H&S1950, (Bean S lib)
- canadense* N.America. Hill1964, (RHS4).
- cantabile (russatum)* Yunnan, Szechuan. D&D1947, Massey1947, Hill1950, (Bean S lib)
- catacosmum* (Name not confirmed) M1947, H&S1950, (Bean II lib)
- cephalanthum* Szechuan, Yunnan, Tibet, Burma.
 Russell1948, H&S1948,50, (Bean S lib). Hill1948 (Bean II lib). H1950, (RH47).
- cephalanthum var. crebreflorum (crebreflorum)* Burma, Assam. (Bean S lib). H&S1948, (Bean S lib)
- chaetomallum* Tibet, China. Russell 1947, (RH47).
- chamaethomsonii (repens var. chamaethomsonii)*
 Yunnan, Tibet. Hill1964, (Bean EWH). Hill1946, (RH56).
- charitopes* Burma. H&S1948, (Bean S lib). Hill1964, (Bean EWH)
- chartophyllum (yunnanense)* H&S1948, (Bean S lib)
- + *chasmanthum (augustinii ssp. chasmanthum)*
 Yunnan, Tibet. M1947, H&S1947, (Bean S lib). Massey1962, (Bean EWH)
- chasmanthoides (augustinii)* China. H&S1948, M1947, (Bean S lib)
- chryseum (rupicola var. chryseum)* (Bean says *chryseum*=*muliense*) H&S1964, (Bean EWH)
- ciliatum* Nepal, Sikkim. H&S1950, (Bean II lib). Russell1950, M1947, (RH47).
- ciliicalyx* China. M1963, (RH56).
- cinnabarinum* Nepal. McK1946, M1947, (Bean II lib).
var. blandfordiiflorum Nepal. BB1961, (Bean EWH)
var. roylei (roylei) Nepal. D&D1944, (Bean II lib). Hill1964, (Bean EWH)
- concatenans* China. H&S1950, (Bean II lib). Hill1964, (Bean EWH)
- coriaceum* Yunnan. Stead1945, (Bean S lib)
- cosmetum (saluenense var. chameunum)* Yunnan. H&S1964, (Bean EWH)
- cowanium* Hill1964, (RH56).
- crassum* China, Upper Burma. (Cook 1965)
- cuneatum (ravum)* Yunnan. H&S1950, (Bean S lib)
- dalhousiae* Nepal, Bhutan, Sikkim. D&D1947, (Bean S lib). Massey1962, (Bean EWH)
- + *davidsonianum* Szechuan, Yunnan. D1935, M1947, (Bean S lib). H1950, Russell1950, (RH47).
- + *decorum* China. M1947, (Bean II lib). D1935,37, (Bean II lib)
- degronianum* Japan. H1950, (RH47).
- + *delavayi (arboreum ssp. delavayi)* Yunnan. M1947, McK1946, (Bean S,lib)
- + *diaprepes* Yunnan. D1945, M1947, (Bean S lib)
- dicroanthum* Yunnan. H&S1964, (Bean EWH)
- + *didymum (sanguineum ssp. didymum)* China. H&S1948, (Bean S lib). Hill1964, (Bean EWH)
- + *discolor* China. (Cook 1965). AB1961, (RH56).
- + ‘Kirkii’ (Name not confirmed). Cabin Park, (PPL).
- drumonium* Yunnan. J1964, (RH63).
- edgarianum* Szechuan, Yunnan, Tibet. H&S1964, (Bean EWH). Russell 1950, (RH47).

- edgeworthii* (*bullatum*) Himalaya. P1964, (RH56). Hill1964, (RH63).
Pink Form (Name not confirmed). Bod 1964, (RH63).
- + *elliottii* India. (Cook 1965)
KW20303 Circus, (PPL).
eriogynum China. Russell 1950, (RH47).
eritimum (*anthosphaerum*). D&D1944, (RY38).
euchaïtes (*neriiflorum* ssp. *euchaïtes*) Massey1947, McK1946, (RY38). Russell 1947, (RH47).
eximium (*falconeri* ssp. *eximium*) India. H&S1948, (Bean II lib)
exquisitum (*oreotrepes* 'Exquisitum') Yunnan, Szechuan, Tibet. H&S1947, (Bean S lib)
falconeri Nepal to Bhutan. D1935, (Bean II lib). D1937, (Bean II lib)
fargesii (*oreodoxa* var. *fargesii*) Hupeh, Szechuan. H&S1948, (Bean II lib). Massey1962, (Bean EWH)
fastigatum Yunnan. H&S1947, (Bean II lib). 1961, (Bean EWH)
ferrugineum European alps, Pyrenees. H&S1950, (Bean II lib). Hill1964, (Bean EWH). H1950, (RH47).
var. *album* Hill1964, (RH56).
var. *majus* (Name not confirmed) Hill1950, (Bean II lib)
fictolacteam (*rex* ssp. *fictolacteam*) Yunnan, Szechuan. Massey 1962, (Bean EWH)
finbriatum (*hippophaeoides*). Russell 1950, (RH47).
fittianum ('Fittianum') Hort. H&S1950, (Bean S lib). Hill1964, (Bean EWH)
flavidum (*primulinum*) Szechuan. H&S1947,50, (Bean II lib). Hill1964, (Bean EWH). Russell 1950, (RH47).
- + *floccigerum* Yunnan. M1962, (Bean EWH)
floribundum China. M1949, (RH47).
formosum (*gibsonii*) Assam. H1947, (Bean S lib). D1947, (RY38).
- + *fortunei* China. (Cook 1965). M1965, (RH56). D&D1945, (RY38). Russell 1950, (RH47).
'Magnifica' (Name not confirmed). (Cook 1965). Harrison1962, (RH56).
- + **Red** (Name not confirmed). (Cook 1965). Harrison1962, (RH56).
fulgens Himalaya. D&D1935,37, (Bean II lib)
giganteum Yunnan. M1962, (Bean EWH). M1964, (RH63).
glaucum (*glaucophyllum* ?) E.Himalaya. H&S1947, (Bean S lib).
McK1946, M1947, Hill1950, (Bean II lib). M1964, (RH63).
glischrum Himlaya. (Cook 1965)
- + *grande* Nepal, Bhutan. D1935, (Bean S lib)
- + *griersonianum* Yunnan. D1935, (Bean S lib)
- + *griffithianum* (*aucklandii*) Nepal, Assam. D1935,37, (Bean II lib)
- + **Rubrum** (Name not confirmed). (Cook 1965)
haematodes China. Russell 1947, (RH47).
hanceanum China. Bod1964, (RH56).
hanceanum var. *nanum* Szechuan. H&S1950, (Bean II lib). Bod1964, (RH63).
- + *heliolepis* Yunnan, Burma. H&S1950, (Bean S lib). D1946, (RY29).
hemitrichotum Szechuan. H&S1950, (Bean S lib)
hippophaeoides Yunnan, Szechuan. H&S1947, (Bean S lib). D&D1943,44, (RY38).
hirsutum European Alps, Yugoslavia. H1947, (Bean II lib)
hodgsonii Nepal, Bhutan. H&S1947, (Bean II lib). Hill1964, (Bean EWH)
hookeri Bhutan and eastward. H&S1948, (Bean S lib). AB1961, (RH56).
hormophorum Yunnan, Szechuan. Hill1950, (Bean II lib)
hyperythrum Formosa. M1947, (Bean S lib)
hypoglaucum Szechuan, Hupeh. D1947, (Bean S lib)

- hypolepidotum* China, Tibet. Russell 1950, (RH47).
- impeditum (litangense)* China. Wilson 1946, Massey 1947, Hill 1947, (Bean II lib)
- imperator (uniflorum var. imperator)* Burma. H&S 1947, 50, (Bean S lib)
- inequale* (Name not confirmed). (Cook 1965)
- KW20301** Cabin Park, (PPL).
- insigne* Szechuan. H&S 1947, 50, (Bean S lib)
- + *intricatum* Szechuan. Hill 1947, Wilson 1950, Hill 1950, (Bean II lib). Hill 1964, (Bean EWH)
- irroratum* Yunnan. 1935, (Bean S lib)
- + *johnstoneanum* India, Assam, Manipur. (Cook 1965). M 1963, (RH56). Russell 1950, (RH47).
- keiskei* Japan. H&S 1950, (Bean II lib)
- keleticum (calostrotum ssp. keleticum)* Tibet, H&S 1947, 50, (Bean II lib). Hill 1964, (RH56).
- keysii* Himalaya, Bhutan. H&S 1947, 50, (Bean II lib)
- kiusianum* Japan. Bod 1963, (RH56).
- lanatum* Himalaya, Sikkim. B 1964, (RH56).
- lapponicum* Scandinavia, N.America. D 1941, 42, 47, (Bean II lib)
- ledifolium* D 1941, 42, H 1937, (Bean II lib)
- lepidotum* Himalaya, Nepal, China. Bod 1963, (RH56). J 1964, (RH63).
- leucaspis* Himalaya. H&S 1947, 50, (Bean S lib). Hill 1963, (RH56).
- lindleyi* Nepal, Manipur. Massey 1962, (Bean EWH). M 1964, 65, (RH63).
- litangense (impeditum)* J 1964, (RH56).
- litiense (wardii Litiense group)* Yunnan. M 1947, D 1947, (Bean S lib). M 1963, 65, (RH56).
- longistylum* Szechuan. 1941, cabin, (Bean S lib). D&D (RY38).
- lutescens* Szechuan, Yunnan. McK 1946, M 1947, (Bean II lib). P 1964, (RH56).
- + *luteum* Europe, Caucasus. (Cook 1965)
- + *macabeanum* India, Manipur, Assam. (Cook 1965). Harrison 1962, (RH56). D&D 1945, (RY38).
- + *maddenii* Himalaya. (Cook 1965)
- makinoi* Japan. H&S 1947, (Bean S lib)
- mallotum* Burma. M 1947, (Bean S lib)
- meddianum* China, Upper Burma. M 1963, (RH56).
- megacalyx* China, Burma. Stead 1945, (Bean S lib)
- + *megeratum* Himalaya, Burma. H&S 1964, (Bean EWH)
- melinanthum (mekongense var. melinanthum)* Burma, Yunnan, Tibet. H&S 1950, (Bean S lib)
- micranthum* China, Korea. D 1940, (Bean II lib). Hill 1964, (RH54).
- microleucum (orthocladum var. microleucum)* Yunnan. H&S 1950, (Bean S lib). Hill 1964, (Bean EWH)
- minus* N.America. Harrison, (RH47).
- moupinense* Szechuan. H&S 1947, (Bean II lib)
- mucronulatum* China, Russia, Korea, Japan. Wilson 1946, M 1947, (Bean S lib)
- myrtilloides (campylogynum Myrtilloides group)* Burma. H&S 1948, (Bean S lib)
- neriiflorum* Yunnan, Bhutan. D 1947, M 1947, McK 1946, (Bean S lib)
- neriiflorum ssp. euchaëtes* Yunnan, Tibet, Burma. M 1947, McK 1946, (Bean S lib)
- nitens (calostrotum ssp. riparium Nitens group)* Burma. H&S 1950, (Bean II lib). Hill 1964, (Bean EWH)
- niveum* Sikkim. H&S 1950, (Bean II lib)
- nudiflorum* N.America. Hill 1964, (RH54).
- + *nuttallii* Assam, Tibet, Burma. D 1941, (Bean S lib)
- nuttallii var. stellatum* Tibet. F 1946, (Bean S lib)
- obtusum* (Bean S lib)

- oblongifolium* N.America. Hill1964, (RH56,RHS4).
- + *occidentale* N.America. D1937,42, (Bean II lib)
- oleifolium (virgatum ssp. oleifolium)* Yunnan, Tibet. H&S1947, (Bean S lib, RH47)
- orbiculare* China. P1964, (RH56). Bod1964, (RH63). Hill1964, (RHS4).
- oreotrephes* China, Tibet. (Cook 1965). J1964, (RH63).
- orthocladum* Yunnan, Szechuan. H&S1948, (Bean S lib)
- patulum* Burma. H&S1950, (Bean II lib)
- pemakoense* Tibet. Hill1947, (Bean II lib). J1964, (RH63). Russell 1950, (RH47).
- pentaphyllum* Japan. H&S1947, (Bean S lib)
- planetum* China. (Cook 1965). M1962, (RH56).
- pocophorum* Tibet. H&S1950, (Bean II lib)
- + *polyandrum* (Name not confirmed). Russell 1950, (RH47).
- + *ponticum* Spain, Portugal, Asia minor. (Cook 1965)
- praecox* (Name not confirmed). (Cook 1965)
- prostigatum* (Name not confirmed) H&S1947, (Bean S lib)
- prostratum* Szechuan, Yunnan. H&S1947, (Bean S lib). J1964, (RH63).
- prunifolium (tsangpoense var. prunifolium)* N.America. H&S1947, (Bean S lib).
Hill1964, (RH56). Hill1964, (RHS4).
- pseudochrysanthum* Taiwan. P1964, (RH56). Bod1964, (RH63).
- pubescens* Yunnan. H&S1950, (Bean II lib)
- pulchrum* (Evergreen azalea). Hill1960, (RH47).
- pumilum* Sikkim. H&S1950, (Bean S lib)
- punctatum (minus)* N.America. H1947, (Bean II lib)
- quinquefolium* Japan. Hill1964, (RHS4).
- + *racemosum* Yunnan, Szechuan. H1935, D1935, (Bean II lib)
'Forrest form' Hill1948, (Bean II lib)
- radicans (calostrotum ssp. keleticum Radicans group)*
Tibet. H&S1947,50 (Bean S lib). Hill1964, (Bean EWH)
- radinum* China. Russell 1950, (RH47).
- ravum (cuneatum)* Yunnan, Szechuan. H&S1950, (Bean S lib)
- repens (forrestii Repens group)* Tibet, Yunnan, Burma. H&S1948,50, (Bean S lib)
- rex* China. (Cook 1965)
KW pink 4504 (Cook 1965)
- rhabdotum* Bhutan, Assam. M1947, (Bean II lib)
- rockii KW158* (Name not confirmed). (Cook 1965)
- rockii KW184* (Name not confirmed). (Cook 1965)
- rubiginosum* Szechuan, Yunnan. Stead1945, (Bean II lib). AB1961, (RH56).
- russatum (cantabile)* Yunnan, Szechuan. McK1946, M1947, H&S1947, (Bean S lib). Massey1962, (Bean EWH)
- saluenense* Tibet, Yunnan, Burma. H&S1947,50, (Bean S lib)
- sanguineum* Yunnan, Tibet. H&S1948, (Bean S lib). Hill1964, (RH63).
- sargentianum* Szechuan. H&S1948,50, (Bean S lib). Hill1964, (Bean EWH)
- scabrifolium* Yunnan. H&S1950, (Bean S lib). M1956, (RH56).
- scabrum 'Red Emperor'* (Cook 1965)
- + *schlippenbachii* Korea, Russia, China. S1935, H1942, (Bean II lib)
- scintillans* Yunnan, Szechuan. H&S1947,50, M1946, (Bean S lib). Hill1964, (Bean EWH)
- scyphocalyx (dichroanthum ssp. scyphocalyx)* Yunnan, Burma. H&S1950, (Bean II lib)

- selense* China. (Cook 1965). AB1961, (RH56).
- sidereum* Bod1963, (RH56).
- simsii* Yunnan, Hong Kong, Burma, Thailand, Taiwan. D&D1942, (Bean S lib)
- sinogrande* China, Burma, Tibet. (Cook 1965). Hill1963, (RH56).
- + *smirnowii* Asiatic Turkey. D1935, (Bean II lib)
- souliei* Szechuan. M1947, (Bean II lib)
- sperabile* Burma. M1962, (Bean EWH). D&D1945, (RY38).
- ‘**Weihsi**’ Douglas Park, (PPL).
- sterophyllum* (Name not confirmed) H&S1950, (Bean II lib)
- stewartianum* Yunnan. H&S1950, (Bean S lib)
- strigillosum* Szechuan. H&S1950, (Bean S lib). M1963, (RH56).
- + *sutchuenense* China. D&D1945, (RY38).
- sutchuenense* var. *geraldii* Hupeh, Szechuan. Hill1947, (Bean II lib)
- taronense* (Name not confirmed). Bod1964, (RH63).
- temoense* (Name not confirmed). Russell 1947, (RH47).
- tephropeplum* China, Burma, E.Himalaya. H&S1947, (Bean S lib). M1965, (RH56).
- thomsonii* Himalaya, Nepal. D1937, (Bean II lib). M1965, (RH63).
- tsangpoense* (*charitopes* ssp. *tsangpoense*) Tibet. H&S1950, (Bean S lib)
- tsangpoense* var. *pruniflorum* (*pruniflorum*) India, Burma. Hill1950, (Bean S lib)
- tsariense* Bod1964, (RH63).
- tschonoskii* (Name not confirmed). Hill1960, (RH47).
- ungernii* Asiatic Turkey, Russia. H&S1950, (Bean II lib)
- uniflorum* Tibet, Burma. H&S1950 not true ? (Bean II lib)
- valentinianum* Yunnan. H&S1948, (Bean S lib)
- vaccinoides* Tibet, Sikkim, Assam, Burma. H&S1964, (Bean EWH)
- vaseyi* N.America. (Cook 1965). D&D1945, (RY38).
- venator* Tibet. Russell 1947, (RH47).
- vernicosum* Szechuan, Yunnan. 1935, (Bean S lib)
- violaceum* (*nivale* ssp. *boreale*) China, Tibet. J1964, (RH63).
- virgatum* Nepal, Sikkim, Nepal. S1935, (Bean II lib)
- viscosum* N.America. Hill1964, (RHS4).
- + *wallichii* Nepal, Assam. M1962, (Bean EWH)
- wardii* (*croceum*) Szechuan, Yunnan, Tibet. M1947, H&S1947,50, (Bean S lib)
- wasonii* China. P1964, (RH56). Bod1964, (RH63).
- wightii* Sikkim, Nepal, Burma. AB1961, (RH56).
- williamsianum* Szechuan. D1947, H&S1950, (Bean S lib). Bod1963, Hill1963, (RH56).
- Best pink form** (Name not confirmed). (Cook 1965). Bod1964, Hill1964, (RH63).
- wilsoniae* Central China. H1947, (Bean II lib)
- xanthocodon* (*cinnabarinum* ssp. *xanthocodon*) Tibet. H&S1950, (Bean S lib)
- yedoense* Korea. D&D1942, (Bean S lib)
- yedoense* var. *poukhanense* Korea. 1937,42, (Bean S lib)
- yunnanense* Yunnan, Szechuan, Tibet, Burma. M1947, (Bean II lib). Hill1964, (RH56).
- var. *praecox* Hill1964, (Bean EWH)
- + *zeylanicum* (*arboreum* ssp. *zeylanicum*). Ceylon. (Cook 1965). D&D1962, (RH56).
- Rhododendron hybrids (0+256)**
- ‘**Abessa**’ (‘Elizabeth’ x ‘Laura Aberconway’). P1964, (RR1958). Bod1964, (RR58).

- + 'Akatsuki' (*simsii* var. *eriocarpum* x *kaempferi*). Hill1960, (RR1958).
 + 'Aladdin' (*auriculatum* x *griersonianum*). Massey196X, (RR1958). Russell 1947, (RH47).
 'Albatross' (*discolor* x 'Loderi'). (Cook 1965). H1963, (RH56)
 'Album Elegans' (*catawbiense* hyd). Cabin Park, (PPL).
 'Album Grandiflorum' (*catawbiense* hyd). Cabin Park, (PPL).
 'Alcesta' (*burmanicum* x *lutescens*). P1964, (RR1958). Bod1964, (RR58).
 'Alexander Dancer' (*catawbiense* hyd). Horton 1918, Cabin Park, (PPL).
 'Alison Johnstone' (*concatenans* x *yunnanense*). (Cook 1965)
 'Alix' (*barbatum* x *hookeri*). M1964, (RR58).
 + 'Amy' (*griffithianum* hyd). H1942, (RY29).
 + 'Angelo' (*discolor* x *griffithianum*). Massey, (RR1958). Hill1964, (RH56).
 'Anita' (*campylocarpum* x *griersonianum*). Hill1964, (RH56).
 'Anna Rose Whitney' ('Countess of Derby' x *griersonianum*). Massey, (RR1958). M1965, (RH64).
 'Apology' D&D1960, (RR1958)
arboreum x 'Pink Pearl' (Cook 1965)
 'Ardis' (*arboreum* var. *wearii* x *forrestii* var. *repens*). P1964, (RR1958). Bod1964, (RR58).
 'Ariel' (*discolor* x 'Memoir'). Hill1964, (RR1958)
 'Armistice Day' (*griffithianum* hyd x 'Maxwell T.Masters'). Cabin Park, (PPL).
 + 'Arthur Gilbert' (Name not confirmed). Hill1964, (RH56).
 'Asagi' (*kaempferi* x *simsii* var. *eriocarpum*). Hill1960, (RR1958)
 'Ascot Brilliant' (*thomsonii* hyd). (Cook 1965). D1947, (RY38).
 'Aspansia Ruby' ('Astarte' x *haematodes*). D1964, (RR1958). Bod1964, (RR58).
 'Atrosanguineum' (*catawbiense* hyd). Cabin Park, (PPL).
 + 'Augfast' (*augustinii* x *fastigiatum*). Hill1962, (RR1958). Bod1963, (RH56). Hill1947, (RH47).
 'Auguste van Geert' (*ponticum* hyd). (Cook 1965). Hill1947, (RH47).
 'Aurora' ('Kewense' x *thomsonii*). Hill1964, (RH56).
 + 'Avalanche' (*calophytum* x 'Loderi'). Hill1963, (RR1958, RH56)
 + 'Bagshot Ruby' (*thomsonii* hyd). D1945, (RY38).
 'Barbara' (*campylocarpum* var. *elatum* x 'Loderi'). M1964, (RR58).
 'Barbara Jackman' (Name not confirmed). Douglas Park, (RR1958)
 'Barclayi' ('Glory of Penjerrick' x *thomsonii*). Cabin Park, (PPL).
 + 'Barclayi Avice' (Name not confirmed). 1960, (RR1958). H1942, G1943, (RY29).
 + 'Barclayi Helen Fox' ('Glory of Penjerrick' x *thomsonii*). Douglas Park, (PPL).
 + 'Barnet Glory' H1942, (RY29).
 'B.de Bruin' (*catawbiense* hyd). Cabin Park, (PPL).
 'Beau Brummell' (*eriogynum* x 'Essex Scarlet'). Massey 1962, (RR1958). M1965, (RH64).
 'Bernard Crisp' (hardy hybrid x 'Pink Pearl'). (Cook 1965)
 'Betty Wormald' ('George Hardy' x red garden hyd). (Cook 1965). D1945, (RY38). G1943, (RY29).
 'Bibiani' (*arboreum* x 'Mosers Maroon'). M1965, (RH64).
 'Bilranum' (Name not confirmed). (Cook 1965)
 'Black Beauty' (Cook 1965). H1932, (RY29).
 'Blue Diamond' (*augustinii* x *intrifast*). Crossfield 1957, (Bean S lib). Hill1963, (RH56). Hill1947, (RH47).
 + 'Blue Peter' D1945, G1944, (RY38).
 'Blue Tit' (*augustinii* x lavender form of *impeditum*). Hill1947, (RH47).
 + 'Boddaertianum' (*arboreum* x *campanulatum*). Hill1964, (RH56, RR1958). Hill1946, (RR58).

- 'Bodnant Yellow'** (*cinnabarinum* yellow form x 'Royal Flush'). P1964, (RR1958). Bod1964, (RR58).
'Bo-Peep' (*lutescens* x *moupinense*). Hill1963, (RH56).
'Boule de Neige' (*caucasicum* x hardy *catawbiense* hyd). Horton 1918, Cabin Park, (PPL).
+ **'Bow Bells'** ('Corona' x *williamsianum*). Massey 1962, (RR1958)
+ **'Britannia'** ('Queen Wilhelmina' x 'Stanley Davis'). D&D1947, (RH47).
+ **'Brocade'** ('Vervaeiana' x *williamsianum*). Hill1964, (RH56).
+ **'Bulstrode Park'** (*griffithianum* hyd x 'Sefton'). D&D1947, (RH47). G1943, (RY29).
'Buttercup' (*campylocarpum* x 'A.W.Hardy'). (Cook 1965)
'Butterfly' (*campylocarpum* x 'Mrs Milner'). (Cook 1965). D1945, (RY38).
'Byzantium' (Name not confirmed). Cabin Park, (PPL).
'Calrose' (*calophytum* x *griersonianum*). Hill1964, (RR1958)
+ **'Calstocker'** (*calophytum* x 'Dr Stocker'). Harrison1962, (RR1958).
'Canary' ((*campylocarpum* x *discolor*) x Loderi). (Cook 1965)
'Caractacus' (*catawbiense* hyd). Hill1947, (RH47).
+ **'Carita Inchmery'** (*campylocarpum* x 'Naomi'). Harrison1962, (RR1958)
'Carmen' (*didymum* x *forrestii* var. *repens*). (Cook 1965). Hill1963, (RH56).
+ **'Chancellor'** (Waterers, before 1860). D&D1962, (RH56,RR1958)
'Chanticleer' (*erigynum* x *thomsonii*). P1964, (RR1958). Bod1964, (RR58).
'Charles Dickens' (*catawbiense* hyd). Horton 1918, Cabin Park, (PPL).
+ **'Charles Smith'** (Name not confirmed). McK1946, (RY38).
'Charm' (*forrestii* var. *repens* x 'Shilsoni'). Bod1964, (RR58).
+ **'Chaste'** (*campylocarpum* x 'Queen of the May'). Hill1964, (RR1958)
+ **'China'** (*fortunei* x *wightii*). Hill1963, (RH56).
'Choremia' (*arboreum* x *haematodes*). Bod, (RR1958)
+ **'Christmas Cheer'** (*caucasicum* hyd). (Cook 1965). H1962, (RR1958). D&D1945, (RY38).
+ **'Chrysomanicum'** (*burmanicum* x *chrysodoron*). (Cook 1965). Hill1964, Bod1963, (RR58).
'Cilpinense' (*ciliatum* x *moupinense*). (Cook 1965)
'Coalition' H1942, (RY29).
+ **'Colonel Rogers'** (*falconeri* x *niveum*). 1960, (RR1958).
'Concessum' (Cook 1965)
'Conroy' (*cinnabarinum* var. *roylei* x *concatenans*). P1964, (RR1958). Bod1964, (RR58).
'Corona' (Cook 1965). Hill1964, (RR58).
+ **'Countess of Athlone'** (*catawbiense* 'Grandiflorum' x 'Geoffrey Millais').
Hill1964, (RH56). D&D1947, (RH47). D&D1945, (RY38).
'Countess of Haddington' (*ciliatum* x *dalhousiae*). H1962, (RR1958). D&D1937, (Bean II lib)
+ **'Countess of Sefton'** (*edgworthii* x 'Multiflorum'). D1947, (RY38).
'Cunninghamii splendens' (Name not confirmed). (Cook 1965)
'Cynthia' (*catawbiense* x *griffithianum*). Cabin Park, (PPL).
'Dainty' ('Elizabeth' x 'May Day'). (Cook 1965). Massey 1962, (RR1958).
'Dairymaid' (*campylocarpum* hyd). (Cook 1965). Hill1947, (RH47). H1942, (RY29).
'Dalhousiae Victorianum' Hill1947, (RH47).
'Damaris' (*campylocarpum* x 'Dr Stocker'). (Cook 1965). Hill1963, (RH56).
'Daphne Millais' (*griffithianum* hyd). (Cook 1965)
+ **'Daubuzzi'** (*griffithianum* hyd). H1942, (RY29).
'David' ('Hugh Koster' x *neriiifolium*). (Cook 1965). Massey, (RR1958). M1965, (RH64).

- 'Dawn'** (*griffithianum* hyd). Cabin Park, (PPL).
'Dawns Delight' (*griffithianum* hyd). (Cook 1965)
+ **'Day Dream'** (*griersonianum* x 'Lady Bessborough'). Massey1960, (RR1958).
'Discolor Slocock' (Name not confirmed). (Cook 1965)
'Diva' (*griersonianum* x 'Ladybird'). 1964, (RR1958).
'Doncaster' (*arboreum* hyd). Hill1947, (RH47).
+ **'Dorothea'** (*decorum* x *griffithianum*). 1960, (RR1958).
'Dr.J.M.Aikman' (Name not confirmed). Cabin Park, (PPL).
'Dr Stocker' (*caucasicum* x *griffithianum*). (Cook 1965). D1945, (RY38).
'Dr W.F.Wery' ('Queen Wilhelmina' x 'Stanley Davis'). (Cook 1965)
'Duchess of Portland' (*barbatum* x 'Handsworth Early White'). G1943, (RY29).
+ **'Earl of Athlone'** ('Queen Wilhelmina' x 'Stanley Davis'). H1942, (RY29).
'Edgar Stead' ('Ilam Alarm' x 'Shilsonianii'). (Cook 1965)
'Edith' (*discolor* hyd). Cabin Park, (PPL).
'Edusa' (*campylocarpum* x 'Penjerrick'). P1964, (RR1958). Bod1964, (RR58).
'Edith Carey' (Name not confirmed). G1943, (RY29).
'Edith Mackworth Praed' ('Doncaster' hyd). (Cook 1965)
+ **'Eileen'** H1942, (RY29).
'Eleanore' (*augustinii* x *desquamatum*). Hill1964, (RH56,RR58).
'Elizabeth' x 'Jenny' (Cook 1965)
'Elizabeth' x 'Helen Fox' (Cook 1965)
'Elisabeth Hobbie' ('Essex Scarlet' x *forrestii* var. *repens*). M1964, (RR58).
'Elsie Phipps' ('Penjerrick' x *souliei*). P1964, (RR1958). Bod1964, (RR58).
+ **'Elspeth'** (*campylocarpum* x hardy hybrid). Hill1947, (RH47).
'Elspeth Slocock' ('Elspeth') (Cook 1965). H1942, (RY29).
'Embley Crimson' (Name not confirmed). Hill1964, (RH56,RR1958).
'Erebus' ('Fabia' x *griersonianum*). P1964, (RR1958). Bod1964, (RR58).
'Erebus' x 'Tally Ho' (Cook 1965)
+ **'Ernest Gill'** (*arboreum* x *fortunei*). D&D1945, (RY38).
'Essex Scarlet' Cabin Park, (PPL).
'Ethel' ('F.C.Puddle' x *forrestii* var. *repens*). Bod, (RH56). Bod1963, Hill1964, (RR58).
'Exbury Naomi' ('Aurora' x *fortunei*). (Cook 1965)
'Fabia' (*dichroanthum* x *griersonianum*). (Cook 1965). Russell 1947, (RH47).
'Fabia Tangerine' (*dichroanthum* x *griersonianum*). Bod1963, (RR58).
'Faggeters Favourite' (*fortunei* hyd). (Cook 1965). G1943, (RY29).
'Fame' ('Fabia' x 'Metis'). P1964, (RR1958). Bod1964, (RR58).
+ **'Fastuosum Flore Plena'** (*catawbiense* x *ponticum*). Cabin Park, (PPL).
'F.C.Puddle' (*griersonianum* x *neriiflorum*). (Cook 1965)
'F.D.Godman' (*catawbiense* hyd). Horton 1918, Cabin Park, (PPL).
+ **'Firetail'** ('Britannia' x *erigynum*). Massey, (RR1958). Hill1964, (RH56).
+ **'Florence'** Douglas Park, (PPL).
'Francis Hanger' (*dichroanthum* x 'Isabella'). Harrison 1962, (RR1958)
'Francis B.Hayes' (Cook 1965)
'Fred Waterer' (*catawbiense* hyd). Hill1947, (RH47).
'Fusilier' (*elliottii* x *griersonianum*). (Cook 1965). P1964, (RR1958). Hill1964, (RH56). Bod1964, (RR58).

- 'G.A.Sims' (Cook 1965)
 'Gauntlettii' (*griffithianum* hyd). (Cook 1965)
 'G.B.Simpson' (Cook 1965)
 + 'General Sir John du Cane' (*discolor* x *thomsonii*). Hill1964, (RH56,RR58).
 'Gertrud Schale' (*forrestii* var. *repens* x 'Prometheus'). M1964, (RR58).
 'Gills Gloriosa' (*griffithianum* x 'Pink Pearl'). (Cook 1965)
 'Gills Goliath' (*griffithianum* hyd). (Cook 1965). H1943, (RY29).
 'Gills Triumph' (*arboreum* x *griffithianum*). (Cook 1965)
 'Gladys' (*campylocarpum* x *fortunei*). (Cook 1965). H1962, (RR1958).
 'Gloria' (Name not confirmed). (Cook 1965)
 + 'Glory of Bagshot' (*griffithianum* hyd). D1945, (RY38). H1942, (RY29).
 'Glory of Leonardslee' (*griffithianum* hyd). (Cook 1965)
 + 'Glory of Penjerrick' (*arboreum* x *griffithianum*). H1962, (RR1958).
 'Goblin Pink' ('Break of Day' x *griersonianum*). M1964, (RR58).
 'Golden Horn' (*dichroanthum* x *elliottii*). Gardens (PPL).
 'Goldsworth Crimson' (*griffithianum* x hardy hyd). (Cook 1965)
 'Goldsworth Pink' (*griffithianum* hyd). Cabin Park, (PPL).
 'Goldsworth Yellow' (*campylocarpum* x *caucasicum*). (Cook 1965). D1945, (RY38).
 'Grenadine' (*grenadine* x 'Pauline'). M1965, (RH64).
 'G.S.Rand' (Name not confirmed). Horton 1918, Cabin Park, (PPL).
 'Halcyon' Gardens, (PPL).
 'Halopeanum' (*griffithianum* x *maximum*). (Cook 1965)
 'Harrisii' (*arboreum* x *thomsonii*). (Cook 1965).
 'Hawk' ('Lady Bessborough' x *wardii*). Hill1964, (RH56, RR58).
 'Helen Fox' (Cook 1965)
 + 'Helene Schiffner' M1965, (RH64). H1942, (RY29).
 'Helen Waterer' (Cook 1965)
 'Hiraethlyn' (*griffithianum* x *haematodes*). P1964, (RR1958). Bod 1964, (RR58).
 + 'Horsham' (*griffithianum* hyd x 'Monsieur Thiers'). 1960, (RR1958). H1942, G1943, (RY29).
 'Humming Bird' (*haematodes* x *williamsianum*). Bod, Hill1964, (RH56).
 + 'Ibex' (*griersonianum* x *pocophorum*). Russell 1947, (RH47).
 'Idealist' ('Naomi' x *wardii*). (Cook 1965). Harrison1962, (RR1958).
 'Ightham' (Bodnant form of *augustinii* x *fastigiatum*). Bod1963, (RR58).
 'Ilam Apricot' (*dichroanthum* hyd x ('Pink Pearl' x *zeylanicum*)). (Cook 1965)
 'Ilam Cornubia' ('Shilsonii' x *zeylanicum*). (Cook 1965)
 'Ilam Red Glow' (Cook 1965)
 'Impi' (*didymum* x 'Mosers Maroon'). M1965, (RH64).
 'Inamorata' (*discolor* x *wardii*). (Cook 1965). Hill1963, (RH56).
 'Ingramii' Cabin Park, (PPL).
 'Intrifast' (*fastigiatum* x *intricatum*). Hill1964, (RR58).
 'Irene Stead' (Name not confirmed). (Cook 1965)
 'Isabella' (*auriculatum* x *griffithianum*). (Cook 1965)
 'Ivanhoe' ('Chanticleer' x *griersonianum*). (Cook 1965)
 + 'Iverys Scarlet' D&D1945, (RY38).
 'Jaipur' (*forrestii* var. *repens* x *meddianum*). P1964, (RR1958). Bod1964, (RR58).

- ‘**Jalisco Exbury**’ (‘Dido’ x ‘Lady Bessborough’). (Cook 1965)
 ‘**Jamaica**’ (‘Break of Day’ x *eriogynum*). Hill1964, (RR1958).
 ‘**James Bateman**’ Horton 1918, Cabin Park, (PPL).
 ‘**James Marshall Brooks**’ Horton 1918, (PPL).
 + ‘**Jean**’ (*decorum* x *griersonianum*). D&D1962, (RR1958).
 ‘**J.G. Millais**’ (‘Ascot Brilliant’ x ‘Pink Pearl’). (Cook 1965). D1945, (RY38).
 ‘**J.H. van Nes**’ (*griffithianum* hyd x ‘Monsieur Thiers’). H1942, (RY29).
 ‘**Jock**’ (*griersonianum* x *williamsianum*). Hill1964, (RR58).
 ‘**John Walter**’ (*arboreum* x *catawbiense*). (Cook 1965)
 ‘**John Waterer**’ (*catawbiense* hyd). Cabin Park, (PPL).
 ‘**Jutland**’ (‘Bellerophon’ x *elliottii*). Massey1965, (RR1958).
 + ‘**Kaka**’ (Name not confirmed). Massey1962, (RR1958).
 ‘**Kalmia**’ (Name not confirmed). H1959, (RR1958).
 ‘**Karkov**’ (*griersonianum* x ‘Red Admiral’). (Cook 1965)
 ‘**Kate Waterer**’ Horton 1918, (PPL).
 ‘**Keay Slocock**’ (*campylocarpum* x hardy hyd). H1942, (RY29).
 ‘**Kettledrum**’ (*catawbiense* hyd). Horton 1918, (PPL).
 ‘**Kewense**’ (Name not confirmed) 1935, (Bean II lib)
 ‘**Kiev**’ (‘Barclayi’ x *elliottii*). (Cook 1965). Hill1963, (RH56, RR1958).
 + ‘**Kluis Sensation**’ (‘Britannia’ x seedling). Hill1964, (RH56).
 + ‘**Kluis Triumph**’ (*griffithianum* hyd). Hill1963, (RH56).
 ‘**Lady Armstrong**’ (*catawbiense* hyd). Horton 1918, (PPL).
 + ‘**Lady Bessborough**’ (*campylocarpum* var. *elatum* x *discolor*). Russell 1947, (RH47).
 ‘**Lady Bessborough Roberte**’ (Cook 1965)
 + ‘**Lady Chamberlain**’ (*cinnabarinum* var. *roylei* x ‘Royal Flush’).
 Massey1959, (RR1958). Hill1947, (RH47). Hill1964, (RH56).
 ‘**Lady Clementina Mitford**’ (*maximum* hyd). (Cook 1965)
 ‘**Lady de Rothschild**’ (*griffithianum* x ‘Sappho’). (Cook 1965)
 + ‘**Lady Galway**’ D1945, (RY38).
 + ‘**Lady Longman**’ H1942, (RY29).
 ‘**Ladybird**’ (‘Corona’ x *discolor*). (Cook 1965). Hill1964, (RH56).
 + ‘**Lavender Girl**’ (*fortunei* x ‘Lady Grey Egerton’). D&D1962, (RR1958). D1945, (RY38).
 ‘**Leda**’ (*apodectum* x *griersonianum*). M1965, (RH64).
 + ‘**Lodauric**’ (*auriculatum* x ‘Loderi’). Hill1964, (RH56).
 ‘**Loderi Buckingham Palace**’ (Name not confirmed). M1965, (RH64).
 ‘**Loderi Patience**’ (*fortunei* x *griffithianum*). (Cook 1965)
 ‘**Loderi Sir Edmund**’ (*fortunei* x *griffithianum*). (Cook 1965). Harrison1962, (RR1958).
 + ‘**Loders White**’ (*arboreum* var. *album* x *griffithianum*). D1945, (RY38).
 ‘**Loders White**’ x ‘**Tally Ho**’ (Cook 1965)
 ‘**Lord Roberts**’ (Cook 1965)
 + ‘**Louis Pasteur**’ (‘Mrs Tritton’ x ‘Viscount Powerscourt’). H1942, (RY29).
 + ‘**Lucky Strike**’ (‘Countess of Derby’ x *griersonianum*). Massey196?, (RR1958). M1965, (RH64).
 + ‘**Luscombeanum**’ (*fortunei* x *thomsonii*). Cabin Park, (PPL).
 ‘**Luscombes Scarlet**’ (*fortunei* x *thomsonii*). (Cook 1965). D&D1945, (RY38).
 ‘**Macrostemon**’ (*obtusum* var.). Hill1960, (RR1958).

- '**Madame Carvalho**' (*catawbiense* hyd). (Cook 1965). Hill1947, (RH47).
'**Madame Cavalier**' (Name not confirmed). (Cook 1965)
'**Madame Fr.J.Chauvin**' (*fortunei* hyd). D&D1945, (RY38).
'**Marcia**' (*campylocarpum* x 'Gladys'). (Cook 1965)
'**Margaret Bean**' (*campylocarpum* x 'Esmerelda'). Hill1947, (RH47). H1942, (RY29).
+ 'Margaret Dunn' (*discolor* x 'Fabia'). Hill1963, (RH56).
'**Mariloo B.**' (Cook 1965)
'**Marquis of Lothian**' (Name not confirmed). (Cook 1965)
'**Marshall**' (Name not confirmed). 1964, (RH56).
'**Martin Hope Sutton**' Horton 1918, (PPL).
+ 'Mary Blane' D&D, (RR1958,RR58).
'**Master Dick**' (*griersonianum* x 'The Don'). Hill1964, (RR1958).
'**May Day**' (*greirsonianum* x *haematodes*). (Cook 1965). Hill1964, (RH56).
'**Medusa**' (*griersonianum* x *scyphocalyx*). (Cook 1965)
'**Michael Waterer**' (*ponticum* hyd). (Cook 1965). Hill1947, (RH47).
'**Miss Jekyll**' Horton 1918, (PPL).
+ 'Mohamet' (*dichroanthum* x 'Tally Ho'). Hill1964, (RH56).
'**Moonstone**' (*campylocarpum* x *williamsianum*). (Cook 1965)
+ 'Mrs Charles E.Pearson' (*catawbiense* 'Grandiflorum' x 'Coombe Royal'). D&D1945, (RY38).
+ 'Mrs Charles Irwin Evans' (Name not confirmed). G1944, (RY29).
+ 'Mrs C.B.van Nes' ('Florence Smith' x 'Princess Juliana'). D1947, (RY38).
'**Mrs Compton McKenzie**' (Name not confirmed). H1943, (RY29).
'**Mrs E.C.Stirling**' (*griffithianum* hyd). Cabin Park, (PPL).
'**Mrs George Paul**' (*griffithianum* hyd). Cabin Park, (PPL).
+ 'Mrs G.W.Leak' ('Cheavlier Felix de Sauvage' x 'Coombe Royal'). D&D1938, H1942, (RY29).
'**Mrs Frank Mangles**' (Name not confirmed). Cabin Park, (PPL).
'**Mrs Furnival**' (*caucasicum* hyd x *griffithianum* hyd). (Cook 1965). D&D1945, (RY38).
+ 'Mrs Henry Agnew' (*arboreum* var. *album* x *grande*). Cabin Park, (PPL).
'**Mrs Henry Shilson**' (*arboreum* hyd). Hill1947, (RH47).
+ 'Mrs J.C.Williams' Hill1963, (RH56).
'**Mrs John Clutton**' (*maximum* hyd). Hill1947, (RH47).
'**Mrs John Kelk**' (Cook 1965)
'**Mrs John Penn**' Douglas Park, (PPL).
'**Mrs John Waterer**' Horton 1918, (PPL).
'**Mrs J.P.Laide**' (Name not confirmed). Cabin Park, (PPL).
'**Mrs L.A. Dunnett**' (hybrid of 'Mrs George Hardy'). (Cook 1965). H1942, (RY29).
'**Mrs Lindsay Smith**' ('Duchess of Edinburgh' x 'George Hardy'). Cabin Park, (PPL).
'**Mrs Lionel de Rothschild**' Hill1947, (RH47).
'**Mrs Mary Ashley**' (*campylocarpum* hyd). (Cook 1965)
+ 'Mrs P.D.Williams' H1942, (RY29).
'**Mrs Philip Martineau**' H1942, (RY29).
'**Mrs Tom Agnew**' Hill1947, (RH47).
'**Mrs William Agnew**' Hill1947, (RH47).
'**Mrs W.C. Slocock**' (*campylocarpum* hyd). (Cook 1965). Hill1963, (RH56).
'**Mrs W.R.Dykes**' (Cook 1965). H1942, (RY29).

- 'Myagino' (Name not confirmed). H1959, (RR1958).
 + 'Myrtifolium' (*hirsutum* x *minus*). J1964, (RR58).
 + 'Nannette' H1942, (RY29).
 + 'Naomi' ('Aurora' x *fortunei*). Hill1960, (RR1958).
 + 'Naomi Nautilus' ('Aurora' x *fortunei*). 1962, (RR1958).
 'Nereid' Hill1947, (RH47).
 + 'Nobleanum' (*arboreum* x *caucasicum*). Horton, (Bean II lib). D&D1945, (RY38).
 + 'Norman Shaw' ('B.deBruin' x *discolor*). Hill1964, (RH56, RR1958).
 'Old Port' (*catawbiense* hyd). (Cook 1965)
 'Pelopidas' (*catawbiense* hyd). Horton 1918, (PPL).
 'Peter Koster' ('Doncaster' hyd x 'George Hardy'). (Cook 1965)
 'Phoebus' ('F.C.Puddle' x *haematodes*). Bod1964, (RR58)
 + 'Pilgrim' (*fortunei* x 'Gills Triumph'). Harrison1962, (RR1958).
 'Pink Delight' (*arboreum* hyd). (Cook 1965). H1942, (RY29).
 'Pink Drift' (*calostrotum* x *scintillans*). Hill1964, (RR1958, RH56).
 'Pink Perfection' ('Duchess of Endinburgh' x 'Princess Alexandra'). (Cook 1965)
 'Polar Bear' (*auriculatum* x *diaprepes*). (Cook 1965)
 'Portia' (*euchaites* x *strigillosum*). P1964, (RR1958). Bod1964, (RR58).
 'Praecox' (*ciliatum* x *dauricum*). J1964, (RR58).
 + 'Princess Alice' (*ciliatum* x *edgeworthii*). D1947, (RY38).
 'Princess Elizabeth' D&D1945, (RY38).
 'Prostigiatum' (*fastigiatum* x *prostratum*). J1964, (RR58).
 'Pulcherrimum' (*arboreum* x *caucasicum*). (Cook 1965). Hill1964, (RR58).
 + 'Purple Splendor' ('Hexe' x *poukhanense*). D&D1945, (RY38).
 'Purpureum Elegans' (*catawbiense* hyd). (Cook 1965)
 'Purpureum Grandiflorum' (*catawbiense* hyd). (Cook 1965)
 + 'Queen Wilhelmina' (could be either) D&D1959, (RR1958). Hill1947, (RH47).
 'Racil' (*ciliatum* x *racemosum*). Hill1963, (RH56).
 'Ramillies' ('Ethel' x 'Redwing'). R1964, (RR1958).
 'Raul' (Name not confirmed). (Cook 1965)
 'Raoul Millais' (*griffithianum* hyd). (Cook 1965)
 + 'Red Admiral' (*arboreum* x *thomsonii*). Massey1962, (RR1958).
 + 'Red Glow' ('Halopeanum' x *thomsonii*). M1965, (RH64).
 'Red Riding Hood' ('Arosanguineum' x *griffithianum*). (Cook 1965)
 'Red Wing' ('Barclayi' x *shilsonii*). P1964, (RR1958). Bod1964, (RR58).
 'Remus' (*beanianum* x *forrestii* var. *repens*). Massey1965, (RR1958, RH64).
 + 'Robert W. Wallace' (*griffithianum* hyd). H1942, (RY29).
 + 'Romany Chai' (*griersonianum* x 'Mosers Maroon'). Russell 1947, (RH47).
 + 'Romany Chal' (*griersonianum* x 'Mosers Maroon'). Hill1947, (RH47). M1965, (RH64).
 + 'Rosabel' (*griersonianum* x 'Pink Shell'). Hill1948, (Bean II lib). Hill1963, (RH56).
 + 'Royal Flush' (*cinnabarinum* x *maddenii*). M1965, (RH64).
 + 'Rubina' (*didymum* x 'Tally Ho'). Hill1963, (RH56).
 'Ruby Ruffles' (Name not confirmed). Cabin Park, (PPL).
 'Salmonea' (*Mucronatum* azalea). H1960, (RR1958).
 'Sapphire' ('Blue Tit' x *impeditum*). (Cook 1965). Hill1963, (RH56). J1964, (RR58).

- + **'Sappho'** D1945, (RY38).
- 'Scarlet King Kaka'** (Name not confirmed). (Cook 1965)
- + **'Seta'** (*moupinense* x *spinuliferum*). R1964, (RR1958). Bod1964, (RR58).
- 'Siren'** ('Choremia' x *griersonianum*). Bod1958, (RR1958).
- + **'Sir Frederick Moore'** (*discolor* x 'St Keverne'). Hill1963, (RH56).
- + **'Sir Robert Peel'** Hill1947, (RH47).
- 'Sir William Lawrence'** Hill1960, (RR1958).
- 'Sirius'** (*crassum* x *cinnabarinum* var. *roylei magnificum*). M1965, (RH64).
- 'Solent Queen'** (*discolor* x *griffithianum*). (Cook 1965)
- 'Souvenir W.C.Sloccock'** (*campylocarpum* hyd). (Cook 1965). Hill1947, (RH47).
- + **'Steads Hardy Red'** (Name not confirmed). Massey1962, (RR1958).
- 'Suave'** (Name not confirmed). D1947, (RY38).
- 'Susan'** (*campanulatum* x *fortunei*). (Cook 1965). Hill1962, (RR58).
- 'Tali Queen'** (Name not confirmed). Douglas Park, (PPL).
- 'Tally Ho'** (*eriogynum* x *griersonianum*). (Cook 1965). H1942, (RY29).
- 'Tally Ho' x griersonianum** (Cook 1965)
- 'Tebotan'** (form of *pulchrum*). D&D1959, (RR1958).
- 'Temple Belle'** (*orbiculare* x *williamsianum*). Hill1964, (RH56,RR58).
- 'Thomwilliams'** (*thomsonii* x *williamsianum*). J1964, (RR58).
- 'Titian'** Horton 1918, (PPL).
- + **'Townhill Albatross'** (*discolor* x 'Loderi King George'). Hill1964, (RH56).
- 'Townhill Orange'** (Name not confirmed). (Cook 1965)
- 'Treasure'** (*forrestii* var. *repens* x *williamsianum*). Hill1964, (RR1958, RH56).
- 'Trewithen Orange'** (*concatenans* x 'Full House'). (Cook 1965)
- 'Tupare'** (Name not confirmed). (Cook 1965)
- + **'Unique'** (*campylocarpum* hyd). D1934, (RY38). H1942, G1943, (RY29).
- + **'Unknown Warrior'** ('Queen Wilhelmina' x 'Stanley Davis'). H1943, (RY29).
- 'Van Dyck'** (Cook 1965)
- 'Vanessa'** (*griersonianum* x 'Soulbut'). (Cook 1965). Hill1963, (RH56). Bod1963, (RR58).
- + **'Vanessa Pastel'** (*griersonianum* x 'Soulbut'). Hill1964, (RH56). Bod1964, (RR58).
- 'Varna'** ('Carmen' x *williamsianum*). Bod1963, (RR58).
- 'Vega'** ('Fabia' x *haematodes*). Bod 1964, (RR58).
- 'Venustum' ('Nobleanum Venustum')**. (*arboreum* x *caucasicum*). D&D1945, (RY38).
- + **'Victorianum'** (*dalhousiae* x *nutallii*). D&D1962, (RR1958). Hill1964, (RR58).
- 'Viscountess Elveden'** (Cook 1965)
- + **'White Pearl'** D&D1945, (RY38).
- 'William Downing'** (Cook 1965)
- 'William Shilson'** (Name not confirmed). (Cook 1965)
- 'Winifred White'** Hill 1947, (RH47). G1943, (RY29).
- + **'Winsome'** (*griersonianum* x 'Humming Bird'). Massey1965, (RR1958,RH64).
- 'Yeoman'** ('Choremia' x *forrestii* var. *repens*). P1964, (RR1958). Bod1964, (RR58).
- 'Yunncinn'** (*cinnabarinum* x *yunnanense*). Bod1963, (RR1958).
- 'Yvonne'** ('Aurora' x *griffithianum*). Hill1964, (RR1958).

Azalea

Azalea listings have been derived from Douglas Cooks catalogue of 1965, plus his notebooks on the collection. The azalea list generated from these sources is corroborated by markings in his copy of the International Rhododendron Register 1958. Unfortunately said markings do not give sources of plant material.

Azalea (0+386)

- 'Ada' (Name not confirmed). (Cook 1965).
- 'Ada Brunieres' (Knap Hill). (Cook 1965).
- 'Addy Wery' (Kurume). 1959, (RR1958).
- 'Adolphe de Haens' (Name not confirmed). (Cook 1965).
- 'Aida' (Rustica). (Cook 1965).
- 'Akebone' (Kurume) (Name not confirmed). (Cook 1965).
- 'Albert Elisabeth' (Indian). D&D1959, (RR1958)
- 'Alden' (Name not confirmed). (Cook 1965).
- 'Alice de Steurs' (Mollis). (Cook 1965).
- 'Alphonse Laval' (Mollis). (Cook 1965).
- 'Altaclarensis' (Ghent). (Cook 1965).
- 'Altair' (Glen Dale). (PPL).
- 'Ambush' (Name not confirmed). (PPL).
- 'Amoena' (Kurume). Glen Douglas 1960, (RR1958)
- 'Annabell' (Knap Hill). (PPL).
- 'Anny' (Kaempferi). Hill1960, (RR1958)
- 'Anthony Koster' (Mollis). (Cook 1965).
- 'Apelles' (Rustica). Lilypool, (RR1958)
- 'Ariel' (Ghent). (Cook 1965).
- 'Artistic' (Name not confirmed). (Cook 1965).
- 'Asagi' (Wada). (Cook 1965).
- 'Asakanonare' (Wada). Hill1960, (RR1958)
- 'Avenir' (Indian). H1959, (RR1958)
- 'Avocet' (Knap Hill). Douglas Park, (RR1958)
- 'Aurora' (Knap Hill). (Cook 1965).
- 'Aurora de Rooighem' (Ghent). (Cook 1965).
- 'Autumn Colour' (Name not confirmed). (Cook 1965).
- 'Babeuff' (Mollis) (Cook 1965).
- 'Baby White Ruffles' (Name not confirmed). (Cook 1965).
- 'Ballerina' (Knap Hill). (Cook 1965).
- 'Balzac' (Knap Hill). (Cook 1965).
- 'Barbara Jenkinson' (Knap Hill). (Cook 1965).
- 'Basilisk' (Knap Hill). Douglas Park, (RR1958)
- 'Bazaar' (Knap Hill). (PPL).
- 'Beaute Celeste' (Ghent). (Cook 1965).
- 'Bengal Fire' (Oldham azalea). Hill1960, (RR1958).
- 'Benigiri' (Kurume). (Cook 1965).
- 'Berryrose' (Knap Hill). (Cook 1965).
- 'Best White' (Name not confirmed). (Cook 1965).

- 'Betsy de Bruin'** (Mollis). (Cook 1965).
'Betty Kelly' (Name not confirmed). (PPL).
'Betty Law' (Name not confirmed). (Cook 1965).
'Bijou de Gentbrugge' (Ghent). (Cook 1965).
'Bill' (Name not confirmed). (Cook 1965).
'Blaauws Pink' (Kurume). D&D1959, (RR1958)
'Bouquet de Flore' (Ghent). (Cook 1965).
'Brazil' (Knap Hill). (Cook 1965).
'Brides Bouquet' (Name not confirmed). (PPL)
'Bright Forecast' (Knap Hill). (Cook 1965).
'Bright Straw' (Knap Hill). (Cook 1965).
'Brilliant' (Indian). (PPL).
'Brimstone' (Knap Hill). (Cook 1965).
'Broughtonii Aureum' (Azaleodendron; *A. maximum* x *R. ponticum*). (Cook 1965)
'Buccaneer' (Glen Dale). D&D1939, (RR1958)
'Bullfinch' (Knap Hill). D&D, (RR1958)
'Bungo-nishiki' (Wada). (Cook 1965).
'Buzzard' (Knap Hill). (Cook 1965).
'Canasta' (Knap Hill). (PPL).
'Carminata Splendens' (Amoenum). Hill1960, (RR1958)
'C.B.van Nes' (Mollis). (Cook 1965).
'Cecile' (Knap Hill). (Cook 1965).
'Chaffinch' (Knap Hill). (Cook 1965).
'Charles de Buck' (Indian). (Cook 1965).
'Charles Rogier' (Ghent). (Cook 1965).
'Cheka' (Name not confirmed). (PPL).
'Chevalier de Reali' (Mollis). (PPL).
'Chicago' (Mollis). (Cook 1965).
'Chichibu' (Wada). (Cook 1965).
'Christopher Wren' ('Goldball') (Endtz). (Cook 1965).
'Chromatella' (Ghent). (PPL).
'Clara Butt' (Mollis). (Cook 1965).
'Clarice' (Name not confirmed). (Cook 1965).
'Clive' (Name not confirmed). (Cook 1965).
'Cocarde Orange' (Indian). (Cook 1965).
'Coccinea Speciosa' (Ghent). (Cook 1965).
'Comte de Gomer' (Mollis). (Cook 1965).
'Comte de Papadopoli' (Mollis). (Cook 1965).
'Constance' (Rutherford). H1959, (RR1958)
'Consul Pecher' (Mollis). (PPL).
'Corneille' (Ghent). (PPL).
'Corringe' (Knap Hill). (Cook 1965).
'Czepello' (Name not confirmed). (PPL).
'Daphne' (Indian). (Cook 1965).
'Daviesi' (Ghent). (Cook 1965)

- 'Day Break'** (Kurume). 1959, (RR1958).
- 'Debutante'** (could be either Kurume or Knap Hill). (PPL).
- 'Delectissima'** (Occidentale). Hill1960, (RR1958).
- 'Desert Pink'** (Knap Hill). (PPL).
- 'Diabolo'** (Knap Hill). (PPL).
- 'Dick'** (Name not confirmed). (Cook 1965).
- 'Directeur Moerlands'** (Mollis). (Cook 1965).
- 'Dr. Chas Baumann'** (Ghent). (Cook 1965).
- 'Dr M.Oosthoek'** (Mollis). (Cook 1965).
- 'Dr Reichenbach'** (Mollis). (Cook 1965).
- 'Dr Streiter'** (Ghent). (PPL).
- 'Duc de Nassau'** (Indian). (Cook 1965).
- 'Eddy'** (Oldhamii, Azalea). Hill, (RR1958).
- 'Eleanor Thelman'** (Name not confirmed). (PPL).
- 'Electa'** (Ghent). (Cook 1965).
- 'Elisabeth'** (Mollis). (Cook 1965).
- 'Emile Liebig'** (Mollis). (PPL).
- 'Empress of India'** (Indian). H1959, (RR1958).
- 'Eri'** ('Eric Schaeme') (Indian). (Cook 1965).
- 'Esmeralda'** (Kurume). H1959, (RR1958).
- 'Eva Goude'** (Knap Hill). (Cook 1965).
- 'Excelsior'** (Indian). (Cook 1965).
- 'Exquisita'** (Occidentale). Hill1960, (RR1958).
- 'Fancy Free'** (Knap Hill). (Cook 1965).
- 'Fanny'** ('Pucella') (Ghent). (Cook 1965).
- 'Favor Major'** (Knap Hill). (Cook 1965).
- 'Fawley'** (Knap Hill). (Cook 1965).
- 'Fenelon'** (Glen Dale). (PPL).
- 'Fielders White'** (*mucronatum* form). (Cook 1965).
- 'Fireball'** (Knap Hill). (Cook 1965).
- 'Firebird'** (Kurume). (Cook 1965).
- 'Firecrest'** (Knap Hill). (Cook 1965).
- 'Firefly'** (Knap Hill). (Cook 1965).
- 'Firelight'** (Rutherford azalea). H1959, (RR1958).
- 'Flame'** (could be either Indian or Kurume). (PPL).
- 'Flaming June'** (Knap Hill). (Cook 1965).
- 'Flarpath'** (Name not confirmed). (Cook 1965).
- 'Floradora'** (Mollis). (Cook 1965).
- 'Florence Pilkington'** (Knap Hill). (Cook 1965).
- 'Frans van der Bom'** (Mollis). (PPL).
- 'Frills'** (Knap Hill). (Cook 1965).
- 'Fude-tsuka'** (Kurume). (PPL).
- 'Fujimanyo'** (*mucronatum*). (PPL).
- 'Gallipoli'** (Knap Hill). (Cook 1965).
- 'Gannet'** (Knap Hill). (Cook 1965).

- 'Geant des Batailles' (Ghent). (Cook 1965).
- 'General Goffinet' (Mollis). (Cook 1965).
- 'General Trauff' (Ghent). (Cook 1965).
- 'General Wavell' (*macranthum*). (Cook 1965).
- 'George Reynolds' (Knap Hill). (Cook 1965).
- 'Gibraltar' (Knap Hill). (Cook 1965).
- 'Ginger' (Knap Hill). (Cook 1965).
- 'Gloria Mundi' (Ghent). (Cook 1965).
- 'Gloire de Belzique' (NNC) CaP, (PPL)
- 'Gloriosa' (Indian). D&D1959, (RR1958).
- 'Glory of Boskoop' (Mollis). (Cook 1965).
- 'Glory of Sunninghill' (Indian). (Cook 1965).
- 'Goldcrest' (Knap Hill). (Cook 1965).
- 'Gold Dust' (Knap Hill). (Cook 1965).
- 'Goldfinch' (Knap Hill). (Cook 1965).
- 'Golden Dream' (Knap Hill). (Cook 1965).
- 'Golden Eye' (Knap Hill). (Cook 1965).
- 'Golden Girl' (Knap Hill). (Cook 1965).
- 'Golden Glory' (Ghent). (PPL).
- 'Golden Oriole' (Knap Hill). (Cook 1965).
- 'Golden Yellow' (Name not confirmed). (PPL).
- 'Goodsons Brick' (Name not confirmed). (Cook 1965).
- 'Goodsons Red' (Name not confirmed). (Cook 1965).
- 'Graciosa' (Ghent). (Cook 1965).
- 'Graham' (Name not confirmed). (Cook 1965).
- 'Gumpo' D&D1959, (RR1958)
- 'Gumpo Salmon' (Name not confirmed) D&D1959, (RR1958).
- 'Gumpo Pink' D&D1959, (RR1958).
- 'Gumpo Pale Pink' (Name not confirmed). D&D1959, (RR1958).
- 'Gwyneth' (Knap Hill). (Cook 1965).
- 'Gwynnid Lloyd' (Knap Hill). (PPL).
- 'Harrisons special' (Name not confirmed). (PPL).
- 'Harvest Moon' (Knap Hill). (Cook 1965).
- 'Hatsugiri' (Kurume). (Cook 1965).
- 'Henri Conscience' (Mollis). (Cook 1965).
- 'Hiawatha' (Knap Hill). (Cook 1965).
- 'Hiewa' (Name not confirmed). (PPL).
- 'Higoromo' (Wada). Hill1960, (RR1958).
- 'Hinodegiri' (Kurume). (Cook 1965).
- 'Hinomayo' (Kurume). Hill1960, (RR1958).
- 'Hino-tsukasa' (Satsuki) (PPL).
- 'Homebush' (Knap Hill). (Cook 1965).
- 'Honeysuckle' (Knap Hill). (Cook 1965).
- 'Hoo' (Kurume). 1959, (RR1958).
- 'Hortulanus H.Witte' (Mollis). (Cook 1965).

- 'Hotspur'** (Knap Hill). (Cook 1965).
'Hotspur Red' (Knap Hill). (Cook 1965).
'Hotspur Yellow' (Knap Hill). (Cook 1965).
'Hugho Koster' (Mollis). (Cook 1965).
'Ignea Nova' (Ghent). (Cook 1965).
'Il Tasso' (Rustica). (Cook 1965).
'Imperatrix' (Ghent). (PPL).
'Indivisa Daphine' (Name not confirmed) (PPL).
'Irene Koster' (Ghent) (Cook 1965).
'Jannet' (Name not confirmed). (Cook 1965).
'J.C.van Tol' (Mollis). (Cook 1965).
'Jenkinsii' (Name not confirmed). Cabin Park, (PPL).
'Jessie' (Knap Hill ?). (Cook 1965).
'J.Jennings' (Knap Hill). (Cook 1965).
'Jock Coutts' (Knap Hill). (Cook 1965).
'John Haerens Crimson' (Indian). H1959, (RR1958).
'Joseph Baumann' (Ghent). (Cook 1965).
'Josephine Klinger' (Ghent). (Cook 1965).
'Jubilee' (Indian). (Cook 1965).
'Juliana' (Indian). D&D1959, (RR1958).
'Julius Roehrs' (Indian). H1959, (RR1958).
'Kalmia' (Name not confirmed). (Cook 1965).
'Kate' (Name not confirmed). (Cook 1965).
'Kathleen' (Kaempferi). Hill1960, (RR1958).
'Kersbergen hybrid' (Name not confirmed). (Cook 1965).
'Kestrel' (Knap Hill). (Cook 1965).
'Kipps' (Knap Hill). (PPL).
'Knap Hill Apricot' (Knap Hill). (Cook 1965).
'Knap Hill Cream' (Name not confirmed). (Cook 1965).
'Knap Hill Orange' (Knap Hill). (Cook 1965).
'Knap Hill Red' (Knap Hill). (Cook 1965).
'Knap Hill White' (Knap Hill). (Cook 1965).
'Knap Hill Yellow' (Knap Hill). (Cook 1965).
'Knighthood' (Knap Hill). (Cook 1965).
'Kirin' (Kurume). H1959, (RR1958).
'Kokin-shita' (*macrantha*). (Cook 1965).
'Koningin Sophia' (Mollis). (Cook 1965).
'Koran-yuki' (Kurume). (Cook 1965).
'Koster Brilliant Red' (Mollis). (Cook 1965).
'Krakatoa' (Knap Hill). (Cook 1965).
'Kumo-no-uye' (Kurume). H1959, (RR1958).
'Kurume Pink' see **'Esmeralda'**
'Lady Rosebery' (Knap Hill). (Cook 1965).
'Lapwing' (Knap Hill). (Cook 1965).
'Lemonara' (Mollis). (Cook 1965).

- 'Leopold I'** (Indian). (Cook 1965).
'Liberty' (Mollis). (Cook 1965).
'Linnet' (Knap Hill). (Cook 1965).
'Madame Arthur de Warelles' (Mollis). (PPL).
'Madame Aug. Haerens' (Indian). D&D1959, (RR1958).
'Madame Cyrille van Gele' (Indian). H1959, (RR1958).
'Madame de Hahn' (Name not confirmed). (PPL).
'Madeline' (Knap Hill). (Cook 1965).
'Magnifica' (Ghent). Hill1960, (RR1958).
'Man-yoki' (Kurume). (Cook 1965).
'Margaret Magnet' (Name not confirmed). (Cook 1965).
'Marie Verschaffelt' (Ghent). (Cook 1965).
'Marina' (Knap Hill). (Cook 1965).
'Marion Merriman' (Knap Hill). (PPL).
'Marmion' (Mollis). (Cook 1965).
'Mary Claire' (Knap Hill). (Cook 1965).
'Mazurka' (Knap Hill). (Cook 1965).
'Mephistopheles' (Indian). (Cook 1965).
'Merlin' (Knap Hill). (Cook 1965).
'Middle East' (Knap Hill). (PPL).
'Mignon' (Ghent). (Cook 1965).
'Mikado' (Kaempferi). Hill1960, (RR1958).
'Mikawa-murasaki' (Kurume). (Cook 1965).
'Miss Moffet' (Name not confirmed) (Cook 1965).
'Missimo' (Name not confirmed). (Cook 1965).
'M.Koster' (Mollis). (Cook 1965).
'Modele' (Indian). D&D1959, (RR1958).
'Moscow' (Ingram). (Cook 1965).
'Mrs A.E.Endtz.' (Mollis). (Cook 1965).
'Mrs Anthony Waterer' (Knap Hill). (Cook 1965).
'Mrs C.C.Page' (Mollis). (Cook 1965).
'Mrs G.Page' (Name not confirmed). (Cook 1965).
'Mrs Gomer Waterer' (Knap Hill). (Cook 1965).
'Mrs Wright' (Indian). D&D1959, (RR1958).
'Multiflora' (could be either Mollis or Indian). (PPL).
'Multituli' (Name not confirmed). (Cook 1965).
'Muriel Watson Jones' (Knap Hill). (Cook 1965).
'Murray' (Name not confirmed). (Cook 1965).
'Myagino' (Name not confirmed). (Cook 1965).
'Nancy Buchanan' (Knap Hill). (Cook 1965).
'Nancy Waterer' (Ghent). (Cook 1965).
'Naomi' (Oldham). Hill1960, (RR1958).
'Narcissiflora' (Ghent). (Cook 1965).
'Nicholaas Beets' (Mollis) (Cook 1965).
'Nicholas Schaurow' (Indian). (Cook 1965).

- 'Night Light'** (Knap Hill) (Cook 1965).
'Niobe' (Indian). H1960, (RR1958).
'Norma' (double Ghent according to Cook). (Cook 1965).
'Norma' (Rustica) (PPL).
'Oberst von Kutzinsky' (Indian). (Cook 1965).
'Okatsuki' (Name not confirmed) (Cook 1965).
'Old Gold' (Knap Hill). (Cook 1965).
'Oranea' (Mollis). (Cook 1965).
'Orangeade' (Cook 1965).
'Orange Beauty' (Kaempferi). Hill1960, (RR1958).
'Orange Prince' (Name not confirmed). H1959, (RR1958).
'Orient' (Knap Hill) (Cook 1965).
'Oxydol' (Knap Hill). (Cook 1965).
'Palest Primrose' (Name not confirmed). (Cook 1965).
'Palestrina' (Vuykiana). Hill1960, (RR1958).
'Pallas' (Ghent). (Cook 1965).
'Pavane' (Knap Hill). (Cook 1965).
'Pax' (Indian). H1959, (RR1958).
'Penguin' (Knap Hill). (Cook 1965).
'Peregrine' (Knap Hill). (Cook 1965).
'Persil' (Knap Hill). 1964, (RR1958).
'Peter Proctor' (Name not confirmed). (Cook 1965).
'Phebe' (Rustica). (Cook 1965).
'Phidias' (Rustica). (Cook 1965).
'Phoebus' (Indian). D&D1959, (RR1958).
'Pink Beauty' (could be either Kurume, Mollis or Knap Hill). (PPL).
'Pink Delight' (Wada). Hill1960, (RR1958).
'Pink Perfection' (Coolidge). D&D1959, (RR1958).
'Pink Treasure' (Kaempferi). Hill1960, (RR1958).
'Poem' (Name not confirmed). (Cook 1965).
'Pompador' (Name not confirmed). (Cook 1965).
'Praxitele' (Rustica). (Cook 1965).
'President' (Indian). (Cook 1965).
'President Comte Oswald de Kerckhove' (Indian). (Cook 1965).
'Prince Henri de Pays-Bas' (Ghent). (Cook 1965).
'Princess Irene' (**'Princess Beatrix'**) (Vuykiana). Hill1960, (RR1958).
'Princess Juliana' (Vuykiana). Hill1960, (RR1958).
'Princess Royal' (Knap Hill). (Cook 1965).
'Pucella' see **'Fanny'**
'Purple Splendour' (Gable) (Cook 1965).
'Queen of England' (Ghent). (Cook 1965).
'Queen Wilhelmina' (Mollis). (Cook 1965).
'Raphael de Smet' (Ghent). (Cook 1965).
'Rasho-mon' (Kurume). (Cook 1965).
'Red Delight' (Name not confirmed). (PPL).

- 'Red Indian'** (Knap Hill). (Cook 1965).
'Redshank' (Knap Hill). (Cook 1965).
'Reini' (Indian). (Cook 1965).
'Rogue' (Glen Dale). (Cook 1965).
'Roi de Holland' (Indian). (PPL).
'Rosabella' (Kurume). (Cook 1965).
'Rosea' (Ghent). Hill1960, (RR1958).
'Rosea Elegans' (Indian). Hill1947, (RH47).
'Rose de Hollande' (Ghent). (Cook 1965).
'Rosebud' (Gable). D&D, (RR1958).
'Rosebud' (Kurume). D&D, (RR1958).
'Rosella' (Knap Hill). (Cook 1965).
'Rose Queen' (Rutherford). H1959, (RR1958).
'Royal Lodge' (Knap Hill). (Cook 1965).
'Rubis de Herrell' (Name not confirmed). (PPL).
'Rubis de Meirelbeke' (Indian). H1959, (RR1958).
'Ruddy Duck' (Knap Hill). (Cook 1965).
'Rudyard Kipling' (Mollis). (Cook 1965).
'Rumba' (Knap Hill). (Cook 1965).
'Ruth Davis' (Knap Hill). (Cook 1965).
'Sahara' (Name not confirmed). (PPL).
'Salmon' (Indian). (PPL).
'Salmon Orange' (Knap Hill). (Cook 1965).
'Salmon Prince' (Kurume). (Cook 1965).
'Salmon Queen' (Mollis). (Cook 1965).
'Salmon Red' (Name not confirmed). (Cook 1965).
'Sand Dune' (Knap Hill). (Cook 1965).
'Sandpiper' (Knap Hill). (Cook 1965).
'Saskia' (Name not confirmed). (PPL).
'Satan' (Knap Hill). (Cook 1965).
'Satsuki No.77087' (*macrantha*) (RR58).
'Scarlet O'Hara' (Knap Hill). (PPL).
'Scarlet Pimpernel' (Knap Hill). (Cook 1965).
'Scarlet Prince' (Kurume). (Cook 1965).
'Sculptor' (Name not confirmed). (Cook 1965).
'Sebastopol' (Mollis). (Cook 1965).
'Sensation' (azalea?). (Cook 1965).
'Seville' (Knap Hill). Hill1964, (RR1958).
'Sherwood Red' (Kurume). D&D1959, (RR1958).
'Shiro-manyo-tsutsuji' (*mucronatum f. narcissiflorum*). (PPL, RR58).
'Sir Charles Napier' (Indian). (Cook 1965).
'Snowdrift' (Mollis). (Cook 1965).
'Soft Lips' (Knap Hill). (Cook 1965).
'Sonia' (Knap Hill). (Cook 1965).
'Southgate Wonder' (Mollis). (Cook 1965).

- ‘**Souvenir de Gentbrugge**’ (Name not confirmed). (Cook 1965).
 ‘**Souvenir du Prince Albert**’ (Indian). (Cook 1965).
 ‘**Spoonbill**’ (Knap Hill). (Cook 1965).
 ‘**Strawberry Ice**’ (Knap Hill). (Cook 1965).
 ‘**Sugered Almond**’ (Knap Hill). (Cook 1965).
 ‘**Sunset Boulevarde**’ (Knap Hill). (PPL).
 ‘**Sunset Pink**’ (Knap Hill). (PPL).
 ‘**Superba**’ (Ghent) Hill1960, (RR1958).
 ‘**Sylphides**’ (Knap Hill). (Cook 1965).
 ‘**Tangiers**’ (Knap Hill). (Cook 1965).
 ‘**Tebotan**’ (*pulchrum* form). (Cook 1965).
 ‘**Temperance**’ (Indian). D&D1959, (RR1958).
 ‘**Tessa**’ (Knap Hill). (Cook 1965).
 ‘**Theo Captain**’ (Indian). D&D1959, (RR1958).
 ‘**Toucan**’ (Knap Hill). (Cook 1965).
 ‘**Touchstone**’ (Glen Dale azalea). Hill1964, (RR1958, RH56).
 ‘**Townhill Orange**’ (Name not confirmed). (Cook 1965).
 ‘**Triomphe de Grande**’ (NNC) CaP (PPL)
 ‘**Triomphe de l’Exposition**’ (Indian). (PPL).
 ‘**Tropic Glare**’ (Name not confirmed). (Cook 1965).
 ‘**Troupial**’ (Knap Hill). (Cook 1965).
 ‘**Tunis**’ (Knap Hill). (Cook 1965).
 ‘**Unique**’ (Ghent). (Cook 1965).
 ‘**Vera**’ (Name not confirmed). (Cook 1965).
 ‘**Vervaeiana**’ (Indian). (Cook 1965).
 ‘**Violacea Multiflora**’ (Indian). (Cook 1965).
 ‘**Violet Gordon**’ (Knap Hill). (Cook 1965).
 ‘**Virginalis**’ (Indian). CaP, (PPL).
 ‘**W.Edgar**’ (Name not confirmed). (PPL).
 ‘**W.E.Gumbleton**’ (Mollis). (Cook 1965).
 ‘**Westminster**’ (Occidentale). Hill1964, (RR1958).
 ‘**White Ruffles**’ (Name not confirmed). (Cook 1965).
 ‘**Whitethroat**’ (Knap Hill). (Cook 1965).
 ‘**Willem III**’ (Ghent). (Cook 1965).
 ‘**Wryneck**’ (Knap Hill). (Cook 1965).
 ‘**Yaegiri**’ (Kurume). (Cook 1965).

Rhodothamnus: Ericaceae (1+0)

chamaecistus The Alps. H&S1947, (Bean II lib)

Rhodotypos: Rosaceae

+ *kerrioides (scandens)* Japan, China. Goodwin 1946, (Bean II lib). RHS1962, (RHS4).

Rhus: Anacardiaceae (3+1)

candensis (aromatica) N.America. H&S1946, (Bean II lib)

+ *cotinoides* see *Cotinus obovatus* N.America. H&S1937, S1938,39, (Bean II lib)

+ *cotinus* see *Cotinus coggygria* Europe, Himalaya, China. D1934,35, (Bean II lib)

+ *glabra* ‘*Laciniata*’ Hill1958, (RHS4).

- + *lancea* S.Africa. (RHS 4,EWH)
- osbeckii* (*chinensis*) China. H&S1937, (Bean II lib)
- succedanea* China. frost killed, H1925, Wilson1939, (Bean S lib)
- + *trichocarpa* Japan, china. H&S1947, GD lookout, (Bean II lib)
- typhina* ‘**Laciniata**’ N.America. (Bean II lib)

Ribes: Saxifragaceae (7+1)

- americanum* N.America. H&S1947, (Bean II lib)
- + *aureum* N.America, Mexico. D1947, (Bean II lib)
- farreri* (Name not confirmed) W1937, (Bean II lib)
- fasciculatum* Japan, Korea. H&S1947, (Bean II lib)
- + *xgordonianum* (*odoratum x sanguineum*). Hort. D1930, (Bean II lib)
- laurifolium* China. (Bean, EWH)
- rubrum* (*spicatum*) Europe. (RHS 4,EWH)
- sanguineum* ‘**King Edward VII**’ N.America. (Cook 1965)
- speciosum* California. S1935, W1935, S1937, (Bean II lib)
- vicari* (Name not confirmed) H&S1948, (Bean II lib)

Robinia: Fabaceae - Papilionaceae (4+0)

- hispidia* N.America. W1935, (Bean II lib)
- kelseyi* N.America. W1935, (Bean II lib)
- luxurians* N.America. H&S1947, (Bean II lib)
- xanthina* (Name not confirmed) H&S1950, (Bean II lib)

Rondeletia: Rubiaceae (2+0)

- amoena* Mexico, Guatamala. (Cook 1965)
- strigosa* Guatamala. HZ1949, (Bean II lib)

Rosa: Rosaceae (12+3)

- banksiae* China. D1942, (Bean II lib)
- caudata* China. S1939, (Bean S lib)
- cinnamomea* (*majalis*) Europe, Asia. S1938, (Bean II lib)
- davidii* China. S1939, (Bean S lib)
- helenae* China. H&S1948, (Bean II lib)
- ‘**Highdownensis**’ Hort. S1937, (Bean II lib)
- macrophylla* ‘**Flore Plena**’ (Cultivar not confirmed) Himalaya. S1940, (Bean II lib)
- microphylla* ‘**Flore Plena**’ (*roxburghii* ‘**Flore Plena**’) China. S1939, (Bean II lib)
- moschata* Asia. S1937, (Bean II lib)
- multibracteata* China. IS1941, (Bean S lib)
- pomifera* (*villosa*) Europe. S1940, (Bean II lib)
- rubrifolia* (*glauca*) Pyrenees, Yugoslavia. S1935, (Bean II lib)
- sweginzowii* China. IS1937, (Bean S lib)
- webbiana* Himalaya, Turkestan. S1938, (Bean II lib)
- xanthina* China, Korea. S1937, (Bean S lib)

Rosmarinus: Lamiaceae (0+7)

- officinalis* Asia minor.
- ‘**Albiflorus**’ (RHS 4,EWH)
- ‘**Benenden Blue**’ (Cook 1965). 1962, (Bean EWH)
- + ‘**Corsican Blue**’ H&S1950, (Bean II lib)
- ‘**Fastigiatus**’ (‘**Miss Jessups Upright**’) (Cook 1965). Hill1946, (Bean II lib)

- 'Humilis' ('Prostratus')** (Cook 1965)
'Prostratus' D&D1928, (Bean II lib)
'Severn Sea' (Cook 1965). 1962, (Bean EWH)
'Tuscan Blue' H&S1950, (Bean II lib)
'White Albus' (Name not confirmed) (Cook 1965)

Royena: Ebenaceae (1+0)

lucida S.Africa. (RHS 4,EWH)

Rubus: Rosaceae (3+0)

deliciosus N.America. S1935, (Bean II lib)

lasiostylus China. H&S1947, (Bean II lib)

trilobus Mexico. H&S1950, (Bean II lib)

Ruellia: Acanthaceae (1+0)

macrantha Brazil. H1947, (Bean II lib)

Ruscus: Liliaceae (2+0)

aculeatus Europe, France, Iran. Wilson 1939, (Bean II lib)

racemosus (Danae racemosus) Syria, Iran. (RHS 4,EWH)

Russelia: Scrophulariaceae (2+0)

sarmentosa Cuba, Mexico, Columbia. HZ1949, (Bean II lib)

juncea (equisitiformis) Mexico. (Bean II lib)

Salix: Salicaceae (28+5)

acutifolia Russia to E.Asia. H&S1950, (Bean II lib)

alba 'Argentea' (alba f.sericea) Europe, Asia. H&S1947, (Bean II lib)

alba 'Britzensis' (Cook 1965)

alba 'Chrysostela' (Cook 1965)

bactrina (Name not confirmed) H&S1948, (Bean II lib)

balsamifera (pyrifolia) N.America. (Cook 1965). Berry 1960, (Bean EWH)

+ *daphnoides* Europe, Himalaya. Slocock 1938, (Bean II lib)

daphnoides 'Aglaia' H&S1947, (Bean II lib)

expandra (Name not confirmed) Slocock 1938, (Bean II lib)

fargesii China. H&S1946, (Bean S lib)

fragilis Europe, Orient. S1947, (Bean II lib)

gatungensis (Name not confirmed) H&S1948, (Bean II lib)

gigantea (Name not confirmed) G1947, (Bean II lib)

x grahamii (aurita x herbacea x repens). Scotland. H&S1946, (Bean S lib)

hexandra (x ehrhartiana) (alba x pentandra). Europe. H&S1948, (Bean II lib)

hypoleuca China. H&S1948, (Bean II lib)

irrorata N.America. H&S1947, (Bean II lib)

lanata Artic and subartic Europe and Asia. H&S1948, (Bean II lib)

+ *magnifica* China. S1937, (Bean II lib)

+ *matsudana 'Tortuosa'* China. Goodwin 1946, (Bean S lib)

medemii (aegyptiaca) Armenia, Iran. H&S1947, (Bean II lib)

x meyeriana (fragilis x pentandra). Europe. H&S1947, (Bean II lib)

nigra N.America. Slocock 1938, (Bean II lib)

nigricans (myrsinifolia) Europe, Asia minor, Siberia. Berry 1960, (Bean EWH)

nigricans fosteriana (Name not confirmed) Berry 1960, (Bean EWH)

- opaca (sachalinensis)* Japan. Berry 1960, (Bean EWH)
papedera (Name not confirmed) (Cook 1965)
purpurea (Name not confirmed) (Cook 1965)
ptheri (Name not confirmed) (Cook 1965)
piperi N.America. Berry 1960, (Bean EWH)
purpurea 'Nana' Europe, N.Africa. (Bean II lib)
rosmarinifolia (repens var. rosmarinifolia) Europe. Slocock 1938, (Bean II lib)
x salamonii (x sepulcralis 'Salamonii') France. Slocock 1938, G1947, (Bean II lib)
silesiaca Carpathian and Balkan mtns. (Cook 1965). Berry 1960, (Bean EWH)
sitchensis N.America, Alaska. (Cook 1965)
viminialis Asia, Himalaya. G1947, (Bean II lib)

Salvia: Lamiaceae (3+0)

- + *grahamii (microphylla)* Mexico. H1946, (Bean S lib)
rutilans Mexico. H&S1947, (Bean II lib)
x superba Hort. RHS1962, (RHS 4,EWH)
violacea (Name not confirmed) D1946, (Bean II lib)

Sambucus: Caprifoliaceae (0+4)

- canadensis 'Aurea Variegata'*
nigra Europe, N.Africa, W.Asia.
 'Aurea' Goodwin 1946, (Bean II lib)
 'Aurea Variegata' ('Luteovariegata') H&S1937, (Bean II lib)
racemosa 'Serratifolia Aurea' ('Plumosa Aurea') England, Scotland.
 H&S1937, (Bean II lib)

Sapium: Euphorbiaceae

- + *japonicum* China, Japan, Korea. H&S1947, circus, (Bean II lib)
+ *sebiferum* China. H&S1948, (Bean II lib)

Sarcococca: Buxaceae (1+0)

- chinensis (ruscifolia var. chinensis)* China. 939-42, (Bean II lib)

Sassafras: Lauraceae

- + *officinale (albidum)* N.America. S1938,40,41, (Bean II lib)

Saxegothea: Podocarpaceae (1+0)

- conspicua* Chile. H&S1947, (Bean II lib)

Schima: Theaceae (3+0)

- argentea* China. H&S1946, (Bean S lib)
+ *khasiana* Assam, Burma, Yunnan. H1947, (Bean S lib)
 noronhae Java, S.E.Asia. H&S1948, (Bean S lib)
 pinnatifolia (Name not confirmed) (Cook 1965)
+ *wallichii (superba)* India to Taiwan. (RHS 4,EWH)

Schinus: Anacardiaceae (2+0)

- chinensis* (Name not confirmed) IS1939, (Bean II lib)
dependens (polygamus) S.America. (RHS 4,EWH)
+ *molle* S.America. Horton 1918, Gisborne 1947, (Bean II lib)
+ *terebinthifolius* Chile. Wilson 1939, HZ1949, (Bean II lib)

Schisandra: Shisandraceae (1+0)

- chinensis rubra* (Name not confirmed) S1939, (Bean II lib)
+ *chinensis var. rubriflora (rubrifolia, grandiflora var. rubrifolia)* China. H&S1937,47, (Bean S lib)

Schizophragma: Saxifragaceae (1+0)*hydrangeoides* Japan, Korea. S, (Bean II lib)+ *integrifolium* China. H&S1947, (Bean II lib)**Schotia: Fabaceae - Caesalpinaceae (2+0)***brachypetala* S.Africa. 1962, (RHS 4,EWH)*speciosa* S.Africa. seed 1963, (RHS4).**Sciadopitys: Taxodiaceae**+ *verticillata* Japan. D1945,46, Wilson1947, (Bean II lib)**Scolopia: Flacourtiaceae (1+0)***brownii* Australia. HZ1949, (Bean II lib)**Sequoia: Taxodiaceae (0+1)***sempervirens* 'Albo-spica' (*sempervirens* 'Adpressa') N.America. H&S1948, (Bean II lib)**Sequoiadendron: Taxodiaceae (0+1)***giganteum* 'Pendula' N.America. H&S1950, (Bean II lib)**Shortia: Diapensiaceae (0+1)***uniflora* 'Grandiflora' Japan. Hill1948, (Bean II lib)**Sinofranchetia: Lardizabalaceae (1+0)***chinensis* China. H&S1948, (Bean II lib)**Sinowilsonia: Hamamelidaceae (1+0)***henryi* China. H&S1950, (Bean II lib)**Skimmia: Rutaceae (1+1)***japonica* Japan. (Cook 1965)'Variegata' (*reevesiana* 'Variegata') (Cook 1965)**Smodingium: Anacardiaceae (1+0)***argutum* S.Africa. (Cook 1965)**Solanum: Solanaceae (4+1)***crispum* Chile. H&S1957, (Bean II lib)*crispum* 'Autumnale' ('Glasnevin') H&S1937, (Bean II lib)*jasminoïdes* Brazil. (Cook 1965)+ *rantonnetii* Argentina. D1941, (Bean II lib)*valdiviense* Chile. H&S1959, (Bean EWH)*wendlandii* Costa Rica. (Cook 1965)**Sollya: Pittosporaceae**+ *heterophylla* (*fusiformis*) Australia. D1947, (Bean S lib)**Sophora: Fabaceae - Papilionaceae (2+2)***dauidii* China. S1940, cabin car shed, (Bean II lib)+ *japonica* China. Korea. D1945, (Bean II lib), (RHS,EWH)*secundiflora* N. America. H&S1947, (Bean II lib)*tetraptera* 'Grandiflora' New Zealand. H1939, (Bean II lib)*tetraptera* 'Pendula' (Cultivar not confirmed) 1934, (Bean II lib)+ *treadwellii* (*microphylla* var. *longicarnata*) New Zealand. (Cook 1965)*viciifolia* (*dauidii*) D1935,37, H&S1937, (Bean II lib)**Sorbaria: Rosaceae (1+0)***arborea* (*Spiraea arborea*). China.**X Sorbaronia: Rosaceae (2+0)***alpina* Hort. H&S1948, (Bean II lib)

- fallax* Hort. H&S1948, (Bean II lib)
- Sorbus: Roasceae (20+5)**
- americana* N.America. H&S1947, (Bean II lib)
- ‘**Pendula**’ (Name not confirmed) (Cook 1965)
- + *arbutifolia* (*Aronia arbutifolia*) N.America. H1934, HZ1949 (Bean II lib)
- ‘**Erecta**’ H&S1947, (Bean II lib)
- + *aria* Europe. D1942, (Bean II lib)
- + ‘**Chrysophylla**’ N1934, (Bean II lib)
- + ‘**Majestica**’ (‘**Decaisneana**’) H&S1947, (Bean II lib)
- arranensis* (*subarranensis*, *intermedia* var. *arranensis*) Britain. H&S1948, (Bean II lib)
- aucuparia* ‘**Vilmorini**’ (Name not confirmed) (PPL)
- auricularis* (Name not confirmed) (Cook 1965)
- cashmiriana* Kashmir. H&S1948, (Bean II lib). H1957, (RHS4).
- chamaemespilus* Europe. H&S1947, (Bean II lib)
- + *commixta* Korea, Japan. H&S1947, (Bean S lib). H1957, (RHS4).
- + *cuspidata* (*vestita*) Himalaya. H1957, (RHS4).
- ‘**Sessilifolia**’ Nepal. H&S1947, (Bean II lib)
- + *discolor* Hedl. China. W1935, H1938, (Bean S lib)
- discolor* Hort. see *commixta*
- + *domestica* Europe, Asia minor, Africa. H&S1948, (Bean S lib)
- + *epidendron* China, Burma. H&S1948, (Bean II lib)
- + *esserteauiana* China. H&S1948, (Bean S lib). H1957, (RHS4).
- foliolosa* see *Pyrus foliolosa* (Cook 1965)
- + *glabrata* (*aucuparia* var. *glabrata*) Scandinavia, Baltic. H&S1948, (Bean II lib)
- + *gracilis* Japan. H&S1948, (Bean II lib)
- harrowiana* China. H&S1948, (Bean S lib)
- x hostii* (*chamaemespilus x mougeotii*). Austria. H1957, (RHS4).
- + *hupehensis* China. S1937,39, H&S1937, (Bean S lib)
- ‘**Fructo Alba**’ (Cultivar not confirmed) H&S1948, (Bean S lib)
- ‘**Rosea**’ H&S1950, (Bean S lib)
- + *hybrida* L. Europe, Finland, Norway. H&S1947, (Bean II lib). H1957, (RHS4).
- intermedia* var. *minima* (*minima*) Britain. H&S1948, (Bean II lib). H&S1948, (Bean S lib)
- + *japonica* var. *calocarpa* Japan. (Cook 1965). H1957, (RHS4).
- latifolia* var. *arranensis* (Name not confirmed) 1957, (Bean EWH)
- + *matsumurana* Japan. H&S1948, (Bean S lib)
- + *megalocarpa* China. H&S1948, (Bean S lib)
- megalophylla* (Name not confirmed) Hill1948, (Bean S lib)
- minima* see *intermedia* var. *minima*
- aff. Mollis*. (Name not confirmed) (Cook 1965). Hill1957, (Bean EWH)
- + *mougeotii* France, Austria. H&S1948, (Bean S lib)
- moravaica lacinata* (Name not confirmed) H&S1950, (Bean S lib)
- + *pluripinnata* China. H1957, (RHS4).
- + *pohuashanensis* China. H&S1948, (Bean S lib)
- prattii* var. *subarachnoidea* (*prattii*) China. H1957, (RHS4).
- + *reducta* China, Burma. H1957, (RHS4).
- + *rufoferruginea* (*commixta* var. *rufoferruginea*) Japan. H1957, (RHS4).

- + *sargentiana* China. H&S1937, (Bean S lib)
tianschanica Turkestan. H1957, (RHS4).
torminalis Asia minor, N.Africa. H&S1947, (Bean II lib)
umbellata var. cretica (graeca) Greece, Syria, Asia minor. planted GD1960. 1957, (RHS4).
x vagensis (*aria x torminalis*). Britain. planted GD1960. H1957, (RHS4).
- + *vilmorinii* China. H&S1947, (Bean II lib). H1957, (RHS4).
zahlbruckneri China. H&S1948, (Bean II lib)
sp Rock 23657 (Cook 1965)
- Sphacele: Lamiaceae (1+0)**
chamaedryoides (campanulata) Chile. Hill 1948, (Bean II lib)
- Spiraea: Rosaceae (5+0)**
aitchisonii see *Sorbaria aitchisonii* Afghanistan, Kashmir. H&S1937, (Bean II lib)
arborea see *Sorbaria arborea* China. S1937, (Bean S lib)
+ *x arguta* (*multiflora x thunbergii*). Hort. D1935, (Bean II lib)
canescens Himalaya. seed 1948, (Bean II lib)
discolor see *Holodiscus discolor* N.America. H&S1948, (Bean II lib)
douglasii N.America. W1935, (Bean II lib)
+ *x gieseleriana* (*cana x hypericifolia*). Hort. Slocock 1938, (Bean II, lib)
japonica Japan. (RHS 4, EWH)
lindleyana see *Sorbaria tomentosa* Himalaya. D1935, (Bean II lib)
pubescens China. (RHS 4, EWH)
trichocarpa Korea. IS1938, (Bean S lib)
+ *veitchii* China. D1935, seed 1948, (Bean II lib)
- Stachyurus: Hamamelidaceae**
+ *chinensis* China. H&S1937, (Bean II lib)
+ *himalaicus* China. H&S1948, (Bean II lib)
+ *praecox* Japan. S1937, 39, (Bean II lib). 1959, (RHS4).
- Staphylea: Staphyleaceae**
+ *bumalda* Japan. Goodwin 1948, Massey 1948 (Bean II lib)
+ *colchica* Caucasus. S1937, (Bean II lib)
+ *holocarpa var. rosea* China. S1957, (Bean II lib)
- Stauntonia: Lardizabalaceae**
+ *hexaphylla* Japan, Korea. D1945, (Bean II lib)
- Stenocarpus: Proteaceae (1+0)**
sinuatus Australia. HZ1949, (Bean II lib)
- Stephanandra: Rosaceae (1+0)**
tanakae Japan. H&S1947, (Bean II lib)
- Stephanotis: Asclepiadaceae (1+0)**
floribunda Madagascar. HZ1949, (Bean II lib)
- Sterculia: Sterculiaceae**
acerifolia see *Brachychiton acerifolia* Australia. Wilson 1947 D1946 (Bean II lib)
diversifolia see *Brachychiton diversifolia* Australia. D1946, (Bean II lib)
platanifolia see *Firmiana platanifolia* Japan. (RHS 4, EWH)
- Stewartia: Theaceae (1+0)**
+ *koreana (pseudocamellia var. koreana)* Korea. H&S1937, 47, S1937, 38, (Bean S lib)
+ *malacodendron* N.America. H&S1947, (Bean II lib)

- + *monadelpha* Japan. H1937, (Bean S lib)
- ovata (pentagyna)* N.America. (Bean, EWH). 1933, (Bean II lib)
- + *pseudocamellia* Japan. S1937,38,39, (Bean II lib)
- + *serrata* Japan. H1937&46, (Bean S lib)
- + *sinensis (gemmata)* China. D1937,39,46, H1934,37, (Bean II lib). H1962, (RHS 4,EWH)

Stranvaesia: Rosaceae (0+1)

- + *davidiana* China. 1935, (Bean S lib)
- 'Fructo Lutea'** RHS seed1944, (Bean S lib)

Styrax: Styracaceae (6+0)

- americana* N.America. D1935,37, (Bean II lib)
- hookeri* (Name not confirmed) H&S1948, (Bean II lib)
- + *japonica* China, Japan. S1937, D1937,41, (Bean II lib)
- + *obassia* Japan. D1935, S1938,39,41, (Bean II lib)
- officinalis* N.America. S1941, (Bean II lib)
- salvescens* (Name not confirmed) 1957, (Hortus 2)
- shiraiana* Japan. H&S1950, (Bean S lib)
- wilsonii* China. H&S1937, S1940, (Bean II lib)

Swainsonia: Fabaceae - Papilionaceae (1+0)

- splendens* (Name not confirmed) Wilson1946, (Bean S lib)

Symphoricarpos: Carpiifoliaceae (2+0)

- albus* N.America. (PPL)
- orbiculatus* N.America. (Cook 1965)

Symplocos: Symplocaceae

- + *crataegoides (paniculata)* Japan, China. H&S1947, (Bean II lib)
- + *theifera (theifolia ?)* Himalaya. H, (RHS 4,EWH)

Syncarpia: Myrtaceae (1+0)

- laurifolia (glomulifera)* Australia. HZ1949, (Bean II lib)

Syringa: Oleaceae (17+46)

- amurensis (reticulata var. mandshurica)* N.China. Massey1948, (Bean II lib)
- x chinensis (lacinata x vulgaris)*. Hort. H&S1964, (Bean EWH)
- 'Metensis'** Hill1964, (Bean EWH)
- var. rubra ('Saugeana')** Hill1964, (Bean EWH)
- cuminifera* (Name not confirmed) planted GD, (Bean EWH)
- dilatata (oblata var. dilatata)* Korea. H1939, (Bean II lib)
- emodi* Himalaya. H&S1948, (Bean II lib)
- + *x hyacinthiflora (oblata x vulgaris)*. Hort. Webb 1935, (Bean II lib)
- + **'Buffon'** D1938, (Bean II lib)
- 'Catinat'** Webb1935, (Bean II lib)
- 'Clarks Giant'** (PPL)
- 'Claud Bernard'** Webb 1935, (Bean II lib)
- + **'Lamartine'** Webb 1935, D1938, (Bean II lib)
- x josiflexa 'Bellicent'* Hort. (PPL)
- + *josikaea* Hungary. Slocock1938, (Bean II lib)
- julianae* China. H&S1964, (Bean EWH)
- luminifera* (Name not confirmed) H&S1958, (Bean EWH)
- komarowii (sargentiana)* China. S1937, (Bean S lib). D1938, (Bean S lib)

- + *microphylla* China. S1937, (Bean S lib)
oblata China. H&S1950, (Bean II lib)
oblata var. dilatata (dilatata)
palibiniana (meyeri 'Palabin', velutina) China, Korea. H&S1950, (Bean S lib)
x persica (lacinata x vulgaris). Hort. Garden, (Bean EWH)
 'Alba' (Cook 1965)
- + *pinnatifolia* China. (Bean II lib)
potaninii China. H&S1947, (Bean S lib). Hill1958, (RHS4).
x prestoniae (reflexa x villosa). Hort.
 'Isabella' (PPL)
reflexa China. IS1939, (Bean S lib)
sargentiana (komarowii)
sweginzowii China. IS1939, (Bean S lib)
tomentella (wilsonii) China. S1935, (Bean S lib)
velutina (palibiniana) China. S1937, (Bean S lib)
- + *villosa* China. S1937, (Bean II lib)
 'Alba' H&S1948, (Bean II lib)
- + *vulgaris* Europe.
 'Alba Grandiflora' (Name not confirmed) Webb 1935, (Bean II lib)
 'Alphonse Lavallee' Webb 1935, D1938, (Bean II lib)
 'Arthur William Paul' (Name not confirmed) Webb 1935, (Bean II lib)
 'Baron de Rothschild' (Name not confirmed) (PPL)
 'Bele de Nancy' D1938, (Bean II lib)
 'Bertha Damon' (Name not confirmed) D1938, (Bean II lib)
 'Congo' Webb 1935, (Bean II lib)
 'Charles Joly' Webb 1935, (Bean II lib)
 'Charles Sargent' (Name not confirmed) Webb 1935, D1938, (Bean II lib)
 'Charles X' D1938, (Bean II lib)
 'Condorcet' Webb 1935, D1938, (Bean II lib)
 'Fertile du Poiton' (Name not confirmed) D1938, (Bean II lib)
 'Firmament' (PPL)
 'George Bellair' (Name not confirmed) Webb 1935, D1938, (Bean II lib)
 'Henri Floreal' (Name not confirmed) (PPL)
 'Jan van Tol' D1938, (Bean II lib)
 'Jacques Callott' Webb 1935, (Bean II lib)
 'Kate' (Name not confirmed) (PPL)
 'Leon Gambetta' Webb 1935, (Bean II lib)
 'Madame Antoine Buchner' Webb 1935, (Bean II lib)
 'Madame E Balted' (Name not confirmed) Webb 1935, (Bean II lib)
 'M D Dombaise' (Name not confirmed) Webb 1935, (Bean II lib)
 'Michael Buchner' Webb 1935, D 1938, (Bean II lib)
 'Michael Cannes' (Name not confirmed) D1938, (Bean II lib)
 'Miss Ellen Willmott' Webb 1935, D1938, (Bean II lib)
 'Monument Carnot' (Name not confirmed) D1938, (Bean II lib)
 'Negro' (Name not confirmed) D1938, (Bean II lib)

- '**Oliver de Serres**' D1938, (Bean II lib)
- '**President Fallieres**' Webb 1935, (Bean II lib)
- '**President Grevy**' Webb1935, (Bean II lib)
- '**President Poincaire**' Webb1935, (Bean II lib)
- '**Sargent**' (Name not confirmed) D1938, (Bean II lib)
- '**Scipeon Cochet**' (Name not confirmed) D1938, (Bean II lib)
- '**Souvenir de C.Toussaint**' (Name not confirmed) Webb1935, (Bean II lib)
- '**Souvenir de Louis Spath**' D1938, (Bean II lib)
- '**Toussaint L'Ouverture**' Webb 1935, (Bean II lib)
- '**Touso**' (Name not confirmed) D1938, (Bean II lib)
- + '**Victor Lemoine**' D1938, (Bean II lib)
- + '**Volcan**' D1938, (Bean II lib)
- '**White Hyacinth**' (PPL)
- '**W Robinson**' (Name not confirmed) Webb 1935, (Bean II lib)

wolfii Korea, Manchuria. IS 1939, (Bean S lib)

wilsonii (tomentella) China. W1939, (Bean S lib)

Taiwania: Taxodiaceae (1+0)

flousiana China. not found I3

Tamarix: Tamaricaceae (2+1)

gallica Mediterranean. D1935, (Bean II lib)

juniperina '**Plumosa**' (*chinensis* '**Plumosa**') China. (Cook 1965)

pentandra Europe, Asia. D1935, (Bean II lib)

Taxodium: Taxodiaceae (3+0)

ascendens N.America. (Cook 1965)

distichum var. pendulum (ascendens f.nutans) N.America. GD1960, (Bean EWH)

mucronatum Mexico. (Cook 1965)

Taxus: Taxaceae (1+2)

+ *baccata* Europe, Asia minor. D1937,45,47, (Bean II lib)

+ '**Erecta**' D1935,37, (Bean II lib)

+ '**Erecta Aurea**' D1945, (Bean II lib)

+ '**Fastigiata**' D1937,46,47, (Bean II lib)

+ '**Fastigiata Aurea**' D1937,45, (Bean II lib)

'**Semperaurea**' Hill1948, (Bean II lib)

'**Variegata**' ('**Argentea**') H&S1948, (Bean II lib)

+ *cuspidata* Japan. D1937,45,47, (Bean II lib)

+ *x media* '**Hicksii**' (*cuspidata x baccata*). Hort. H&S1948, (Bean II lib)

overeyndon (Name not confirmed) D&D1945, (Bean II lib)

Tecoma: Bignoniaceae

+ *grandiflora (Campsis grandiflora)* China. Horton 1918, (Bean II lib)

Telopea: Proteaceae (3+0)

oreades Australia. H1937, S1937, D1937,46,47,48, (Bean S lib)

speciosissima Australia. H1937, S1937, D1941,42,43,45, (Bean S lib)

truncata Australia. H1937, S1937, (Bean S lib)

Ternstroemia: Theaceae

+ *japonica (gymnanthera)* India, Japan. H1946, (Bean II lib)

Tetracentron: Tetracentraceae+ *sinense* China. H&S1947, (Bean II lib)**Tetraclinus: Cupressaceae***articulata* (*Callitris quadrivalvis*) Spain, N.Africa. H&S1947, (Bean II lib)**Teucrium: Lamiaceae (2+0)***chamaedrys* Europe. RHS1962, (RHS4). not found+ *fruticans* Europe, Africa. (Catalogue 1980)*pyrenaicum* Pyrenees. H&S1948, (Bean S lib)**Thryptomene: Myrtaceae (1+0)***saxicola* Australia. RAD1959, (RHS4).**Thuja: Cupressaceae (0+10)***occidentalis* N. America.

‘Ericoides’ D1943,45 (Bean II lib)

‘Hovey’ D1937 (Bean II lib)

+ ‘Little Gem’ D1945 (Bean II lib)

‘Lutea’ D1937 (Bean II lib)

‘Pendula’ H&S1948 (Bean II lib)

+ ‘Rheingold’ D1937,45,46 (Bean II lib)

‘Spaethii’ D1937 (Bean II lib)

orientalis China, Japan.

‘Elegantissima’ D1932 (Bean II lib)

‘Ericoides’ (*occidentalis* cvr ?) D1945,46 (Bean II lib)

‘Globosa’ (Name not confirmed) (Cook 1965)

‘Hillieri’ D1937 (Bean II lib)

‘Meldensis’ H&S1948 (Bean II lib)

+ *plicata* N.America. D1935,45, (Bean II lib)

‘Pyramidalis’ (‘Fastigiata’ ?) H1945, H&S1947, (Bean II lib)

+ ‘Zebrina’ H&S1948, (Bean II lib)

Thujopsis: Cupressaceae+ *dolobrata* Japan. D1937, (Bean II lib)

+ ‘Nana’ D1945, (Bean II lib)

+ ‘Variegata’ D1937, (Bean II lib)

Thunbergia: Acanthaceae (5+0)*alba* (Name not confirmed) HZ1949, (Bean II lib)*coccinea* India, Burma. (Cook 1965)*grandiflora* India. HZ1949, (Bean II lib)*gregorii* Tropical Africa. (Cook 1965)*laurifolia* India. HZ1949, (Bean II lib)**Tibouchina: Melastomataceae (3+1)***microphylla* S.America. HZ1949, (Bean II lib)*rosea* Indonesia. HZ1949, (Bean II lib)*scandens* S.America. D1949, (Bean II lib)+ *semidecandra* ‘Edwardsii’ (Cultivar not confirmed) S.America. D1934, (Bean II lib)*urvilleana* (*semidecandra*.Hort, not DC.) Brazil.

‘Grandiflora’ D1934, (Bean II lib)

Tilia: Tiliaceae (5+2)

- americana* 'Fastigiata' N.America. circus 1957, (Bean, EWH)
chinensis China. (RHS 4,EWH)
chinensis Rock15042 1957, GD, (RHS 4,EWH), (Bean, EWH)
+ *cordata* Europe. D1935, (Bean II lib)
hers sp 1183 1957, GD, (RHS 4,EWH), (Bean, EWH)
mandshurica Asia. H&S1955 dead P3
miqueliana China. H&S1950, (Bean II lib)
+ *x molkei* (*americana x petiolaris*). Hort. H&S1950, (Bean II lib)
+ *neglecta* N.America. H&S1948, (Bean II lib)
+ *petiolaris (americana 'Pendula')* Europe. H&S1947, (Bean II lib)
+ *platyphyllos* Europe. D1935,46, (Bean II lib)
+ 'Asplenifolia' ('Laciniata') (Bean, EWH)
+ *tomentosa* Europe. D1935, Slocock, (Bean II lib)
tuan China. H&S 1950, (Bean II lib)

Tricuspidaria: Tiliaceae

- + *dependens (Crinodendron d.)* Chile. Slocock1938, (Bean II lib)
+ *lanceolata (Crinodendron L.)* Chile. Slocock1938, Ford 1946, S1935, all died (Bean II lib)

Tripterygium: Celastraceae

- + *forrestii (wilfordii)*.Hook.f.) Yunnan. H&S1947, (Bean S lib)
+ *regelii (wilfordii)* Reg., not Hook.) Japan, Korea. H&S1948, (Bean II lib)

Tristania: Myrtaceae (1+0)

- conferta* Australia. HZ1949, (Bean II lib)
+ *laurina* Australia. HZ1949, (Bean II lib)

Trochodendron: Trochodendraceae

- + *aralioides* Korea. H&S1947, (Bean II lib)

Tropaeolum: Tropaeolaceae (1+0)

speciosum (Catalogue 1980), not found I8

Tsuga: Pinaceae (6+0)

- + *albertiana (heterophylla)* N.America. H&S1947, (Bean II lib)
+ *brunoniana (dumosa)* Himalaya. H&S1948, (Bean II lib)
+ *canadensis* N.America. H&S1947, ride, (Bean II lib)
caroliniana N.America. H&S1948, (Bean II lib)
+ *chinensis* China. H&S1947,48, (Bean II lib)
diversifolia Japan. H&S1948, circus, (Bean II lib)
formosana Taiwan. H&S1948, circus, (Bean II lib)
pattoniana (mertensiana) N.America. H&S1947, (Bean II lib)
sieboldii Japan. H&S1948, circus, (Bean II lib)
yunnanensis China. H&S1946, (Bean S lib)

Ulex: Fabaceae - Papilionaceae (0+1)

europaeus 'Flore Plena' Europe. HZ1949, (Bean II lib)

Ulmus: Ulmaceae (0+4)

- carpinifolia 'Pendula' (nitens 'Pendula')* Europe. (Cook 1965)
+ 'Louis van Houtte' H1937, (Bean II lib)
nitens 'Pendula' (carpinifolia 'Pendula' ?) H&S1947,50, (Bean II lib)
stricta 'Wheatleyi' (Name not confirmed) H&S1937, (Bean II lib)

stricta 'Aurea' (Name not confirmed) Slocock 1938, (Bean II lib)

vegeta (*x hollandica* 'Vegeta') Horton 1918, (Bean II lib)

Ungandia: Hippocastanaceae (1+0)

speciosa Texas. PS(seed 1700m W Texas), not found H8

Vaccinium: Ericaceae (9+4)

arctostaphylos Caucasus. H&S1946, (Bean II lib)

+ *corymbosum* N.America. S1935,37,39, (Bean II lib)

'Jersey' H&S1948, (Bean II lib)

'Pioneer' (Name not confirmed) H&S1948, (Bean II lib)

'Pallidum' (Name not confirmed) H&S, (Bean EWH)

'Rubel' H&S, (Bean EWH)

delavayi China. H&S1946, (Bean S lib)

glauco-album Himalaya. H&S1947, (Bean II lib)

ovalifolium Canada. H&S1946, (Bean S lib)

ovatum N.America. H&S1939,47, (Bean II lib)

padifolium Madeira. H&S1947, (Bean II lib)

pallidum N.America. H&S1948, (Bean II lib)

pensylvanicum (*angustifolium* var. *laevifolium*) N.America. H&S1947, (Bean II lib)

virgatum N.America. H&S1948, (Bean II lib)

Verbena: Verbenaceae (1+0)

tridens Patagonia. H&S1946, (Bean S lib)

Veronica (Hebe): Scrophulariaceae

see Hebe

Viburnum: Caprifoliaceae (20+6)

alnifolium N.America. H&S1946, (Bean II lib)

atrosanguinea (Name not confirmed) H&S1948, (Bean II lib)

betulifolium China. S1938, (Bean II lib)

+ *x bodnantense* (*fragrans x grandiflorum*). Hort. H&S1948, (Bean II lib)

buddleifolium China. H1934, (Bean II lib)

+ *x burkwoodii* (*utile x carlesii*). Hort. 1933,1937, D1939, (Bean S lib)

'Park Farm Hybrid' H&S1948, (Bean II lib)

x carcephalum (*carlesii x macrocephalum f.keteleeri*). Hort. H&S1947, (Bean II lib)

+ *carlesii* Korea. S1937, D1946, (Bean II lib)

cassinoides N.America. S1935, (Bean II lib)

chenaultii (*x burkwoodii* 'Chenaultii') Hort. (Cook 1965)

davidii China. H1934, (Bean II lib)

+ *dentatum* (*pubescens* var. *canbyi*) N.America. 1933, (Bean II lib)

dilatatum Japan. (Cook 1965)

+ *erubescens* var. *gracilipes* China. H&S1948, (Bean II lib)

+ *foetens* Asia. H&S1948, (Bean S lib)

fragrans 'Compactum' ('Nanum') China. S1937, (Bean S lib)

furcatum Japan. H&S1946, (Bean S lib)

grandiflorum Himalaya. H&S1946,48, (Bean S lib)

henryi China. H&S1947, (Bean II lib)

hupehense China. S1940, H&S1947, (Bean II lib)

ichangense China. H&S1948, (Bean II lib)

- xjuddii* (*carlesii* x *bitchuense*) Hort. H&S1947, (Bean II lib)
- + *lobophyllum* China. S1940, Massey1948, H&S1950, (Bean II lib)
- nudum* N.America. 1933, (Bean II lib)
- odoratissimum* India to Japan. 1933, (Bean II lib)
- opulus* 'Sterile' Europe. Wilson 1946, (Bean II lib)
- + *plicatum* f. *tomentosum* Asia. new drive, (Bean II lib)
- plicatum* *grandiflorum* (*clone of plicatum* f. *plicatum*) D1937, (Bean II lib)
- + *plicatum* 'Mariesii' D1937, (Bean II lib)
- + *propinquum* Asia. 1933, 1950, (Bean II lib)
- rhytidiophyllum* 'Aldenhamensis' China. S1939, (Bean II lib)
- + *rhytidiophyllum* 'Rosea' H&S1948, (Bean II lib)
- rhytidiophyllum* 'Wakehurst Form' (Cultivar not confirmed) (Cook 1965)
- schneiderianum* (*calvum*) China. H&S1948, (Bean II lib)
- + *sieboldii* China. H1964, (Bean, EWH)
- suspensum* Japan. 1925,33, (Bean S lib)
- theiferum* (*setigerum*) China. Slocock1938, (Bean II lib)
- Villaresia: Icacinaceae (1+0)**
- mucronata* Chile. H&S1947, (Bean S lib), (RHS,EWH)
- Vuinaria: Fabaceae - Papilionaceae (1+0)**
- denudata* Australia. D1937, (Bean S lib)
- Vinca: Apocynaceae (1+4)**
- major* Europe, N.Africa. (Cook 1965)
- 'Variegata' (Cook 1965)
- minor* Europe, W.Asia.
- 'Alba' (Cook 1965)
- 'Atropurpurea' (Cook 1965)
- 'Azurea' ('Azurea Flore Plena' ?, Name not confirmed) (Cook 1965)
- Virgilia: Fabaceae - Papilionaceae (1+0)**
- + *capensis* S.Africa. D1945, (Bean S lib)
- oroboides* S.Africa. (Cook 1965). D&D1946,47, (Bean S lib)
- Vitex: Verbenaceae (1+0)**
- + *agnus-castus* Europe, Asia minor. H&S1947, HZ1949, (Bean II lib)
- incisa* (*negundo* 'Heterophylla') China. H&S1947, (Bean II lib)
- Vitis: Vitaceae (2+2)**
- aconitifolia* see *Ampelopsis aconitifolia*.
- + *amurensis* Korea, China, Japan. H&S1947 netting, top of orch road. (Bean II lib)
- armata* (*dauidii*) China. H&S1948, (Bean II lib)
- brevipedunculata* see *Ampelopsis b.*
- + *coignetiae* Japan, Korea. D1945, (Bean II lib)
- cordifolia* *dauidii* (Name not confirmed) (Bean II lib)
- dauidii* see *armata*
- flexuosa* 'Wilsonii' (*flexuosa* var. *parviflora*) Himalaya, China. H&S1947, (Bean II lib)
- heterophylla* see *Ampelopsis brevipedunculata*
- himalayana* (*Parthenocissus himalayana*) Himalaya. H&S1947, (Bean II lib)
- megalophylla* see *Ampelopsis megalophylla*.
- orientalis* see *Ampelopsis orientalis*.

- + **'Pulchra'** Hort. H&S1946, near deodar on orchard fence, (Bean S lib)
- + ***striata* (*Cissus striata*)** Chile, Brazil. H&S1948, (Bean II lib)
- vinifera* 'Purpurea'** Caucasus. S1939, (Bean II lib)
- Weigelia: Caprifoliaceae (3+6)***
- coraensis* (*grandiflora*)** Japan. Circus. (Bean, EWH).
- 'Feerie'** Hort. S1937, (Bean I lib).
- + ***florida*** Japan, Korea, China, Manchuria. H&S1955, (Bean I lib).
- 'Candida'** H1940, (Bean I lib).
- 'Folius Purpureus'** D1937, H&S1955, (Bean I lib).
- 'Grandiflora'** H1940.
- + **'Variegata'** D1936, H&S1955, (Bean I lib).
- 'Venusta'** H&S1947, (Bean I lib).
- + **'Grace Warden'** Hort. H1946, (Bean I lib).
- hortensis*** Japan. H&S1955, (Bean I lib).
- 'Ideal'** Hort. S1937, (Bean I lib).
- middendorffiana*** China, Japan. H&S1955, (Bean I lib).
- + **'Styriaca'** Hort. H&S1946,55, (Bean I lib).
- Weinmannia: Cunoniaceae (3+0)***
- purpurea*** (Name not confirmed) D&D1946, (Bean S lib)
- Stewart Island form*** (Name not confirmed) New Zealand. D&D1949, (Bean S lib)
- trichosperma*** Chile. Hill1946 (Bean S lib)
- Widdringtonia: Cupressaceae (1+0)***
- schwarzii*** S.Africa. (Cook 1965)
- Wisteria: Fabaceae - Papilionaceae (0+3)***
- + ***chinensis* (*sinensis*)** China. D1941, (Bean II lib)
- chinensis* Pink** (Cultivar not confirmed) D1939, (Bean II lib)
- floribunda* 'Kyushaku'** D1940, (Bean II lib)
- + ***floribunda* 'Rosea'** Japan. (Cook 1965)
- floribunda* 'Violacea Plena'** (Cook 1965)
- Xanthocerus: Sapindaceae (1+0)***
- sorbifolium*** China. S1937,41, (Bean II lib)
- Xylosma: Flacourtiaceae (1+0)***
- racemosa* var. *pubescens* (*japonica* var. *pubescens*)**
Japan, China, Taiwan. H&S1947, (Bean II lib)
- Zanthoxylum: Rutaceae (1+0)***
- + ***americanum*** N.America. H&S1950, (Bean II lib)
- + ***bungei* (*simulans*)** China. H&S1948,50, (Bean II lib)
- piperatum*** China, Japan, Korea. H&S1937, (Bean S lib)
- + ***planispinum*** Japan, Korea, Taiwan, China. H&S1948, (Bean II lib)
- Zelkova: Ulmaceae (1+0)***
- + ***acuminata* (*serrata*)** Japan. D1940, H&S1955, (Bean II lib)
- sinica*** China. H1937, H&S1955, (Bean S lib)
- Zenobia: Ericaceae (2+0)***
- speciosa*** N.America. S1937, (Bean II lib)
- pulverulenta*** N.America. D1948, (Bean II lib)
- Ziziphys: Rhamnaceae (1+0)***
- sativa* (*jujuba*)** Italy, (Bean EWH)

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Glen Douglas archive, Cooks corner archive, Douglas Park archive, Circus archive,

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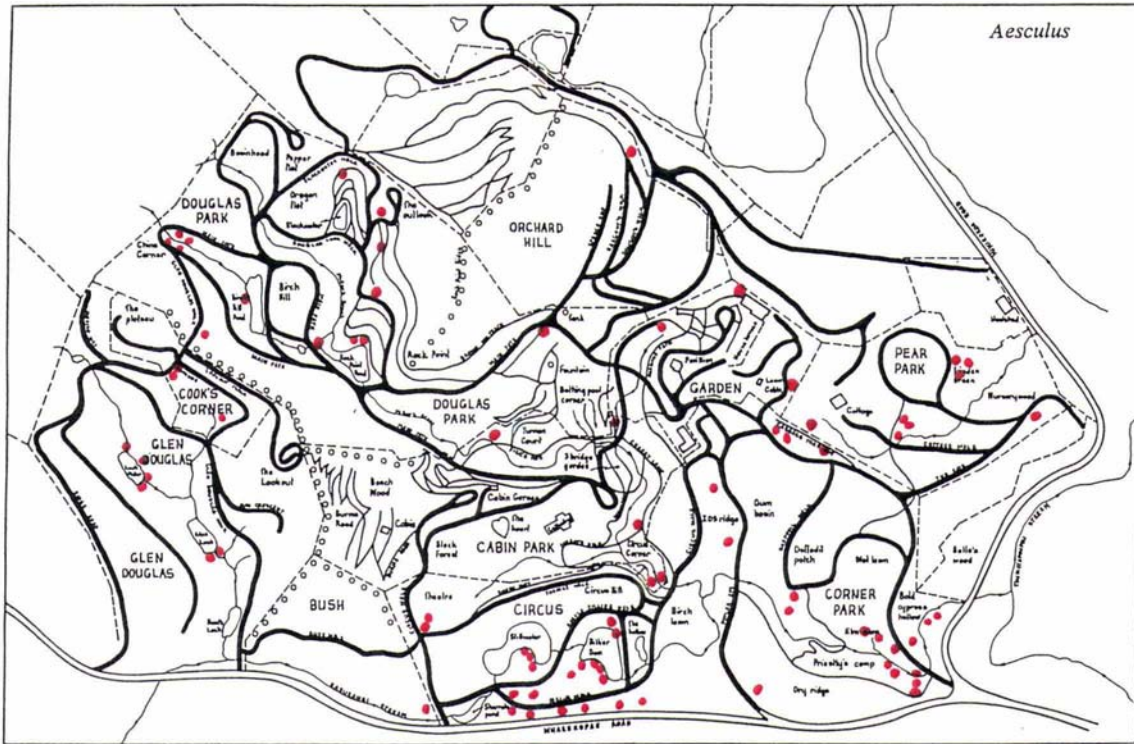
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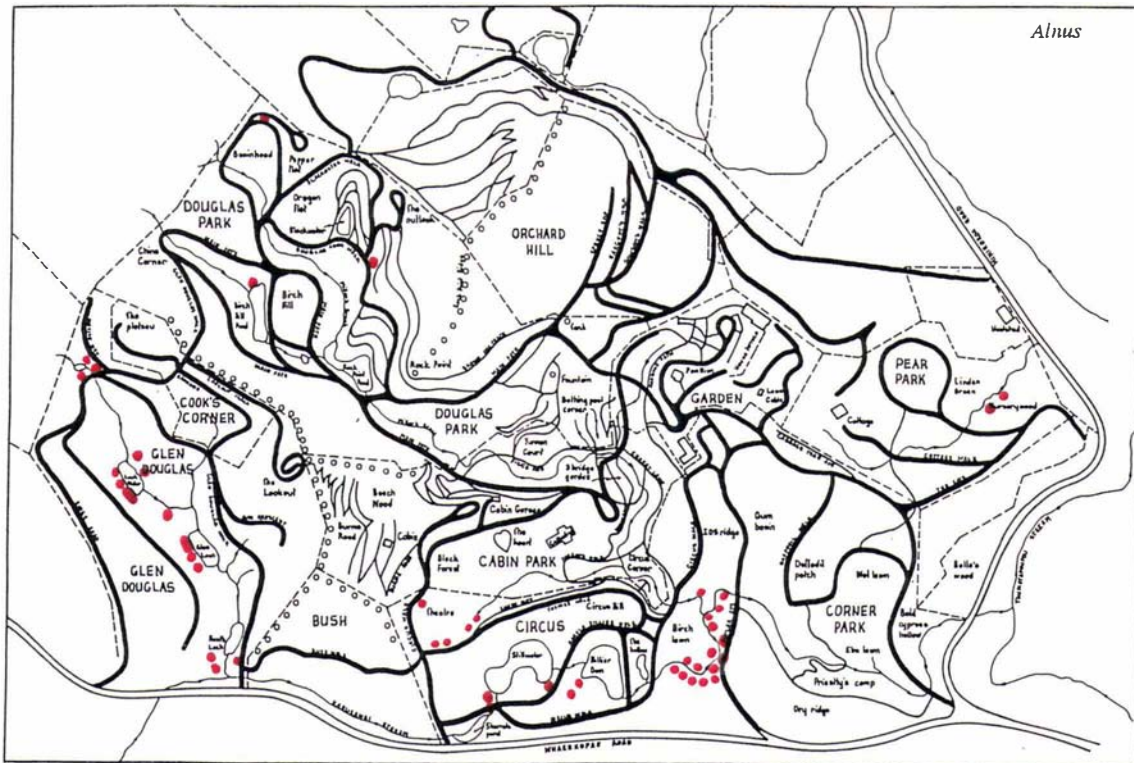
Genus distribution maps



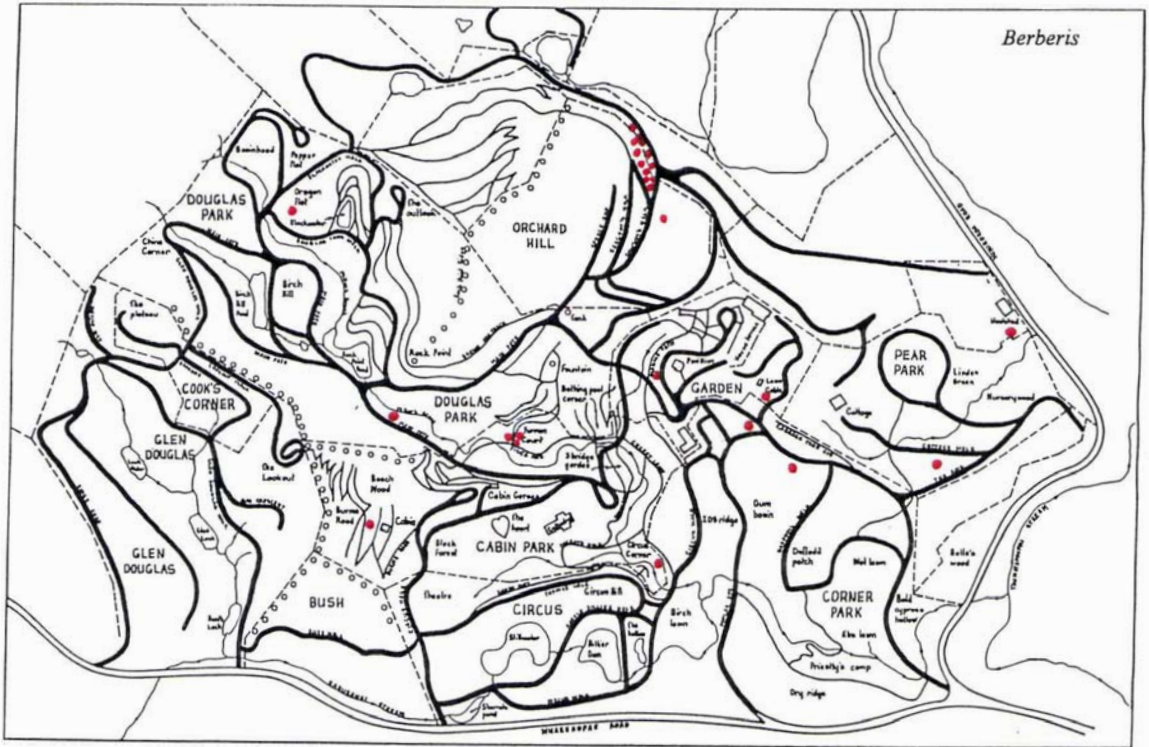
Acer palmanum seedling, Cabin Park, April 1993.



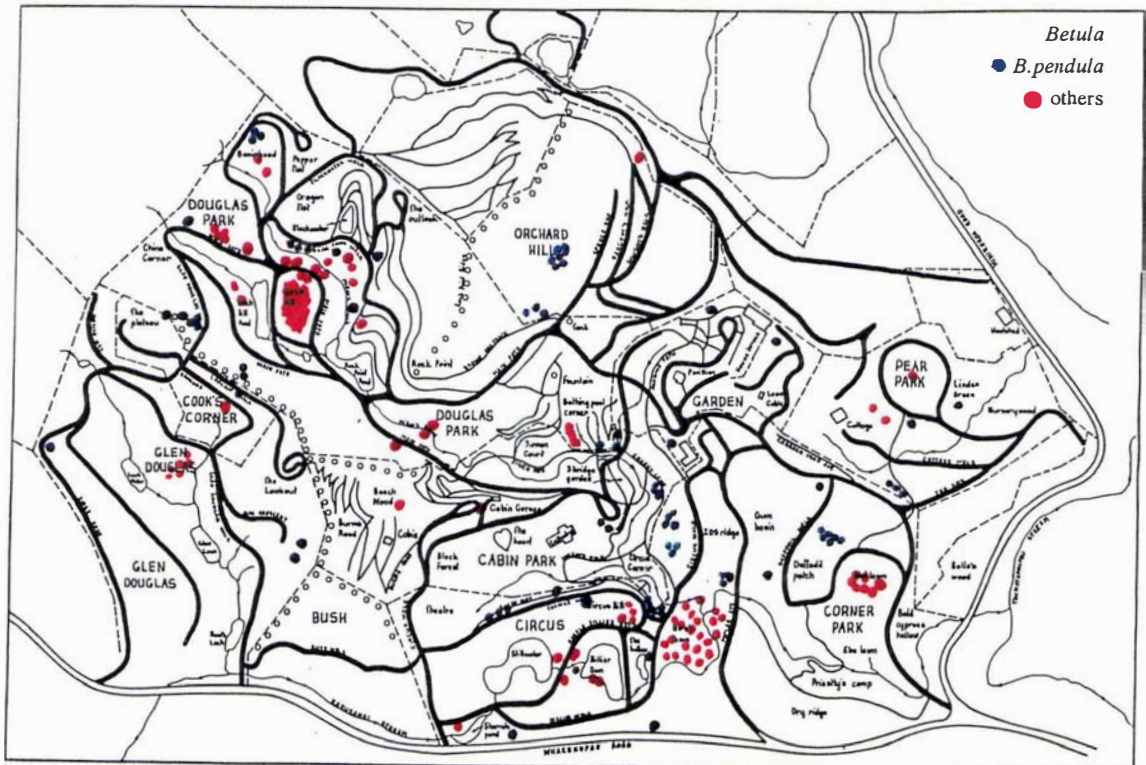
Aesculus



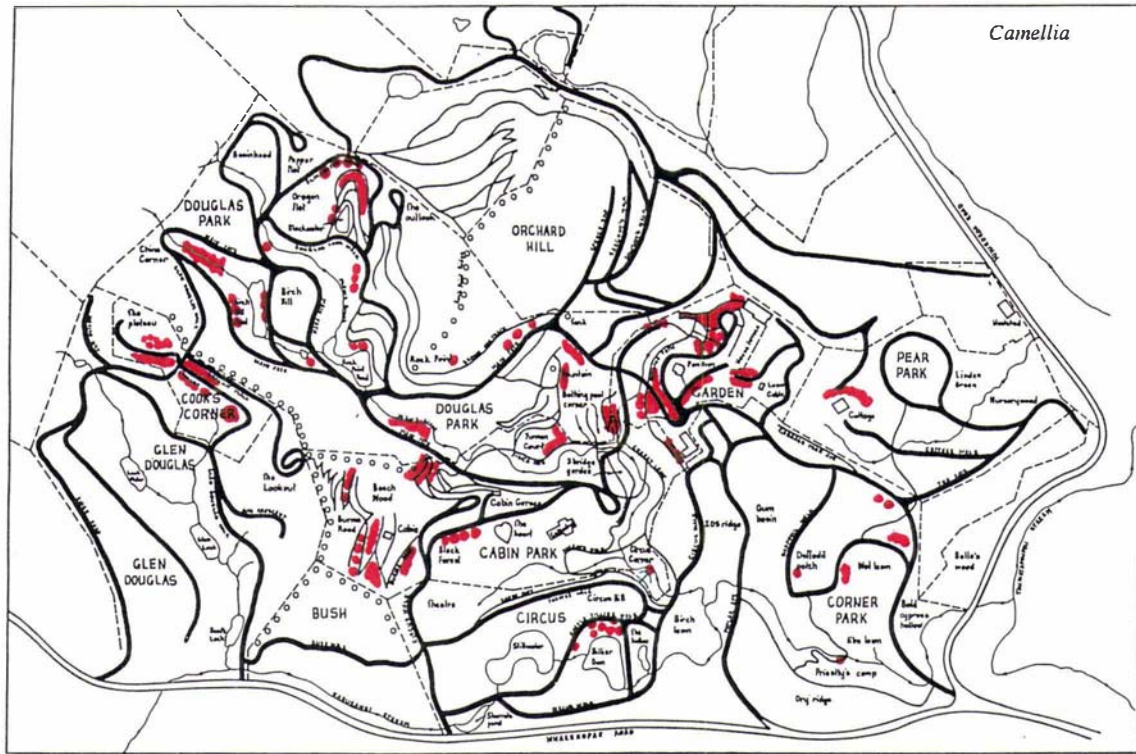
Alnus



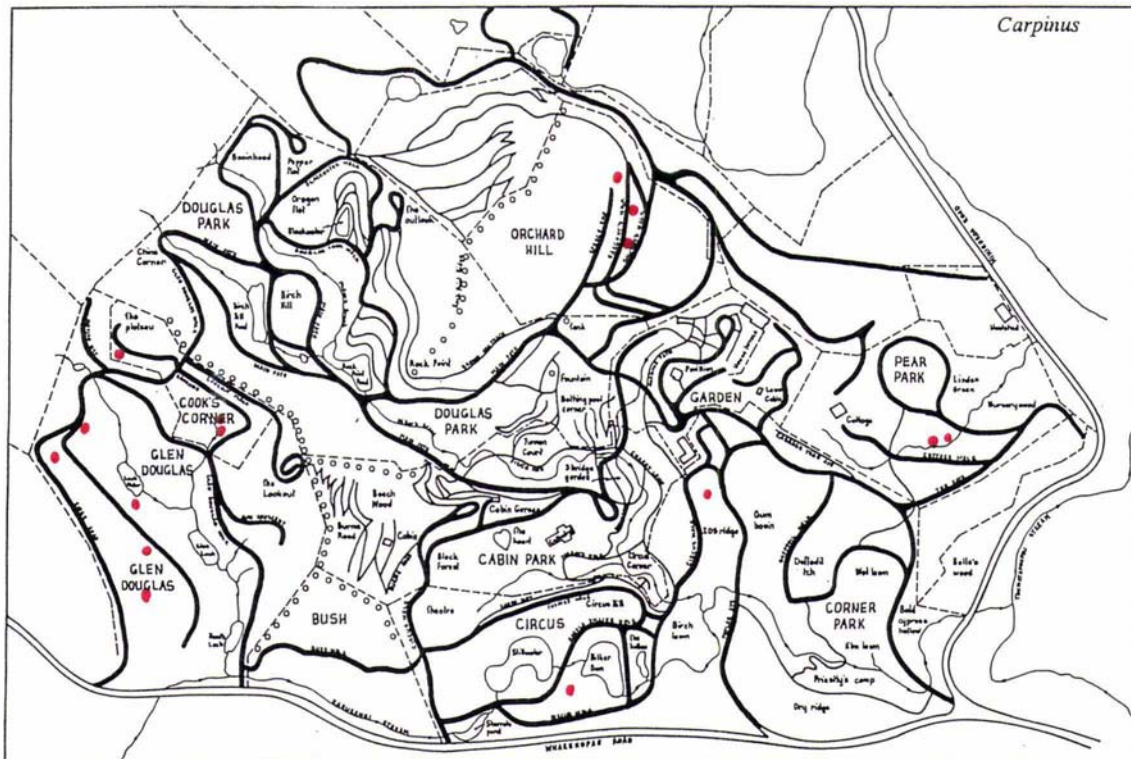
Berberis



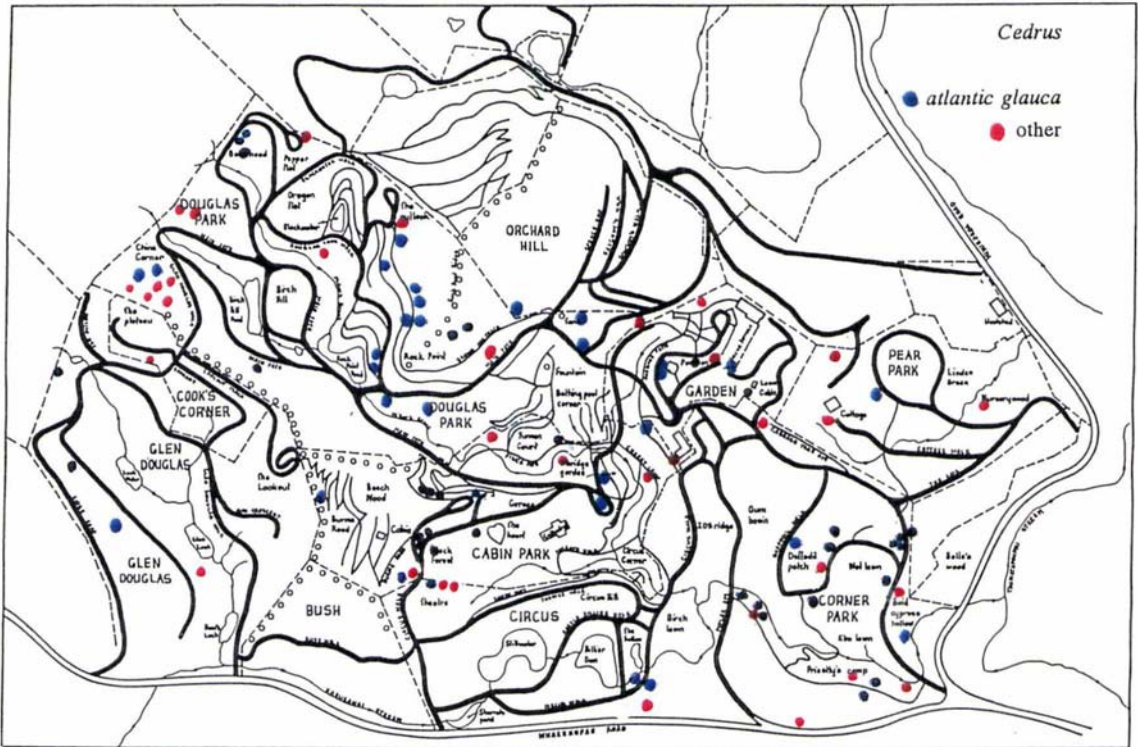
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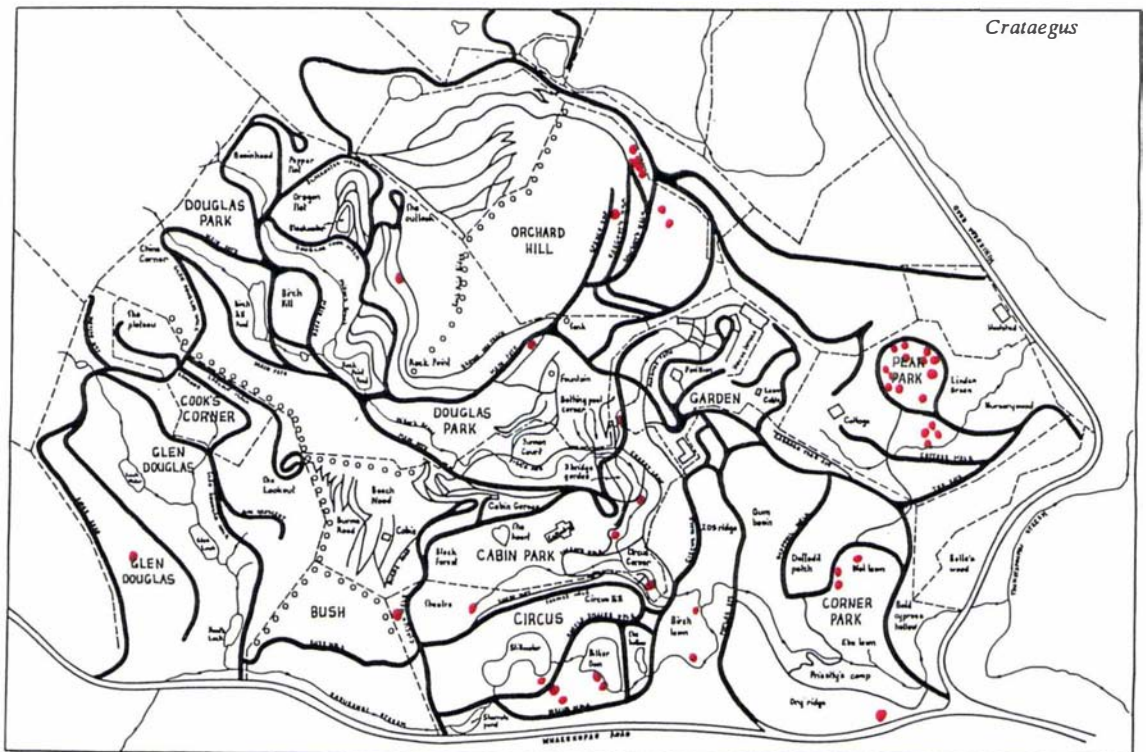
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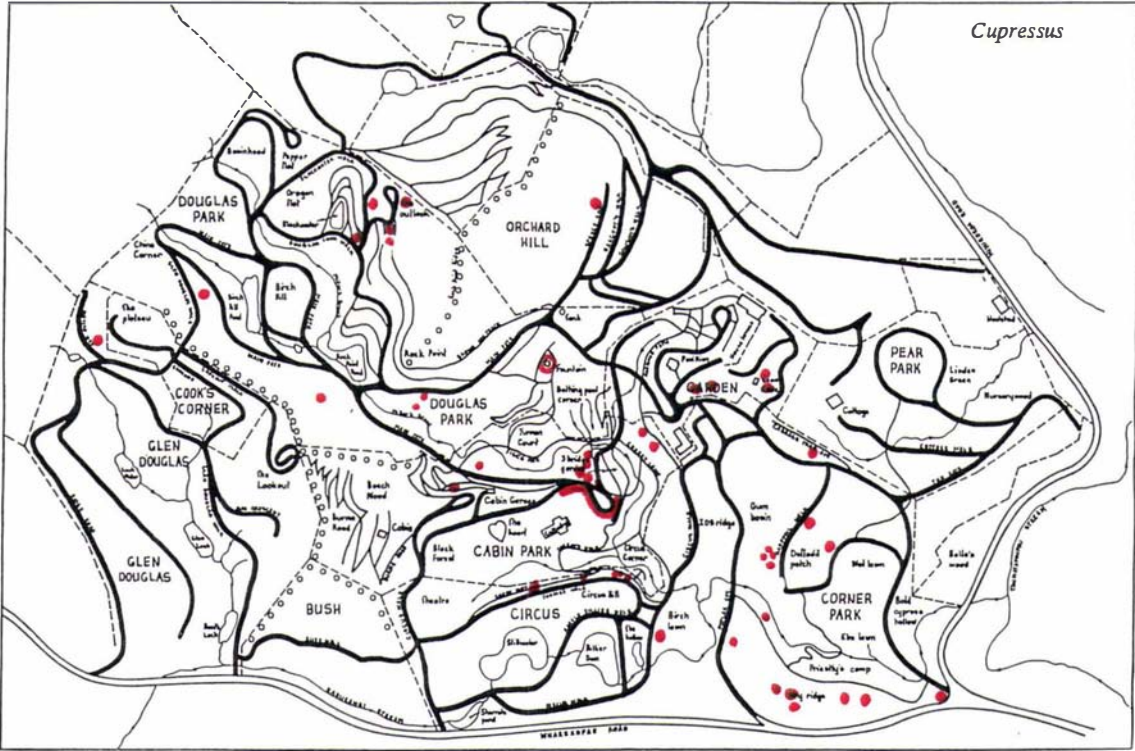
Carpinus



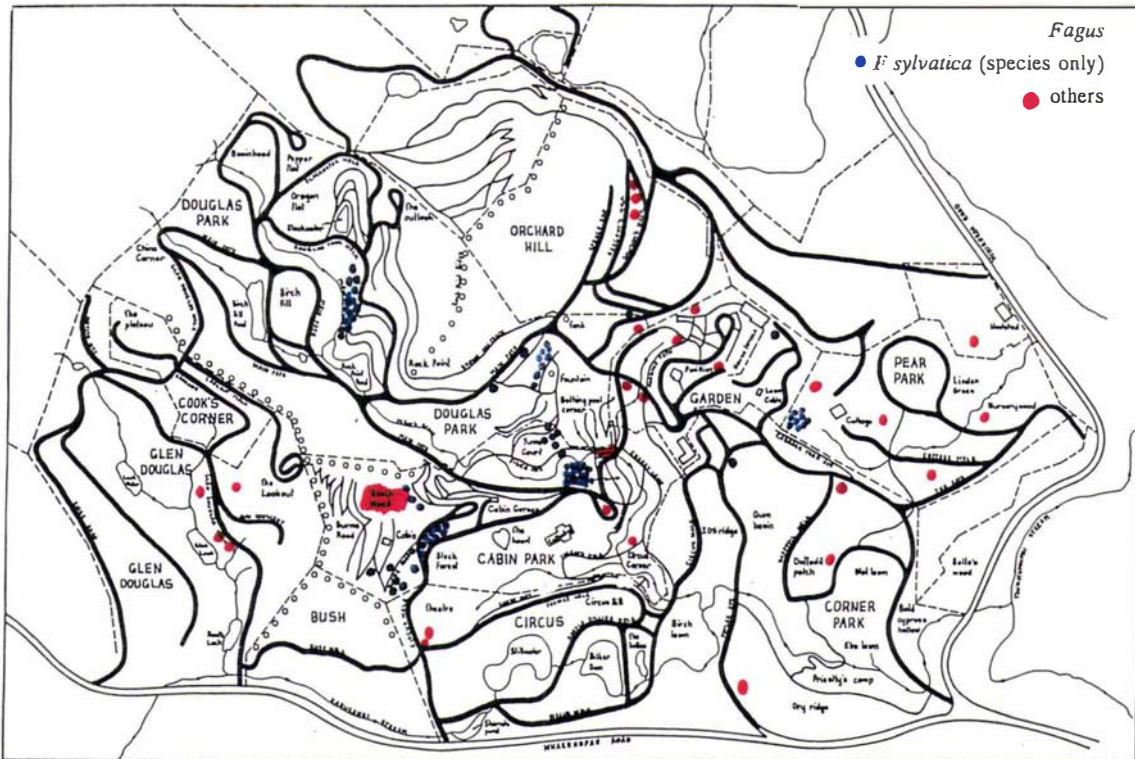
Cedrus



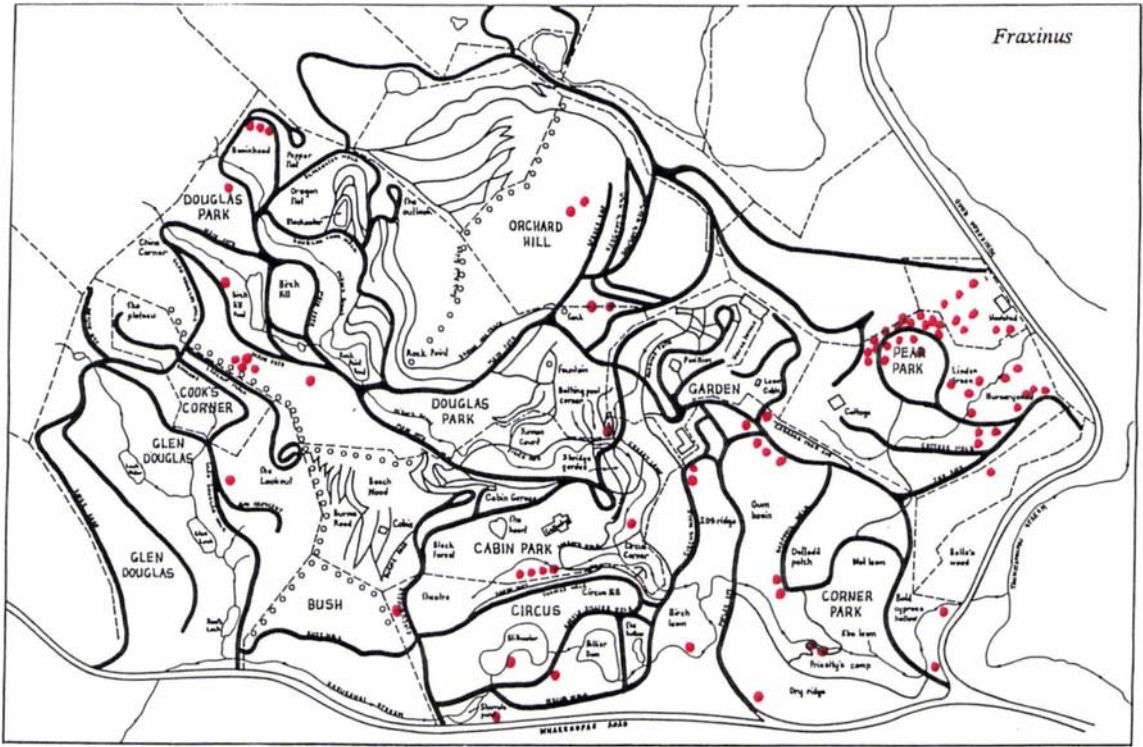
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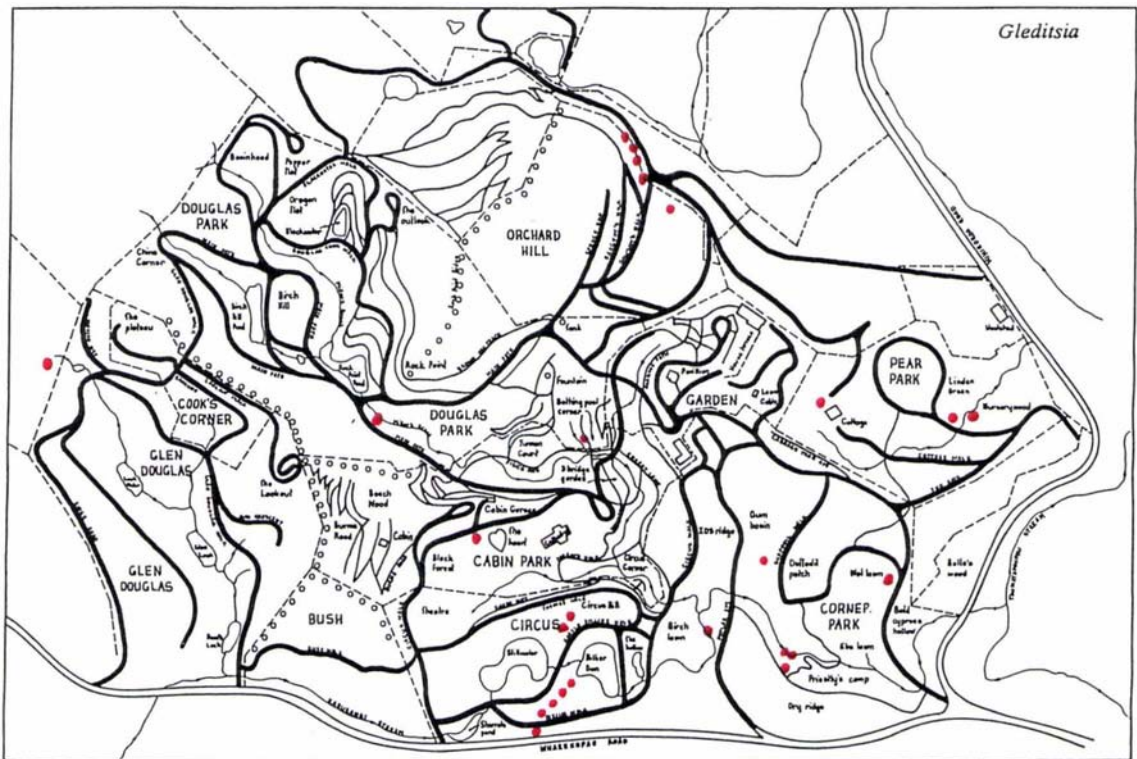
Cupressus



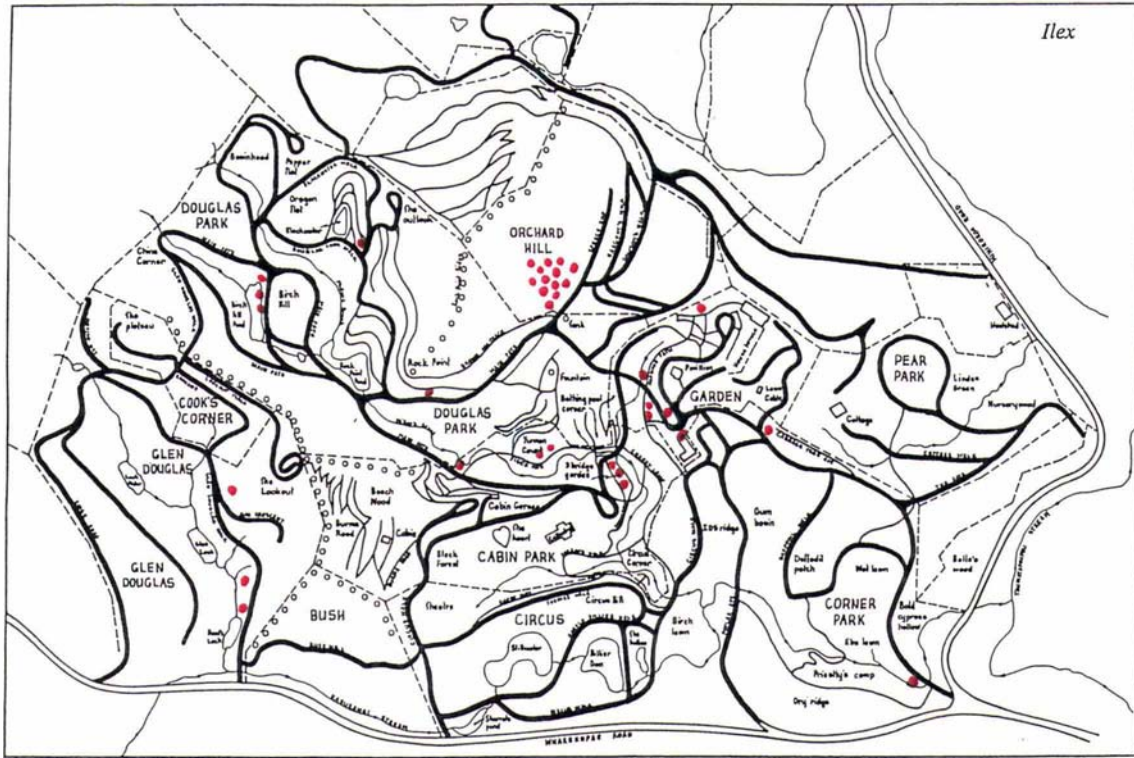
Fagus



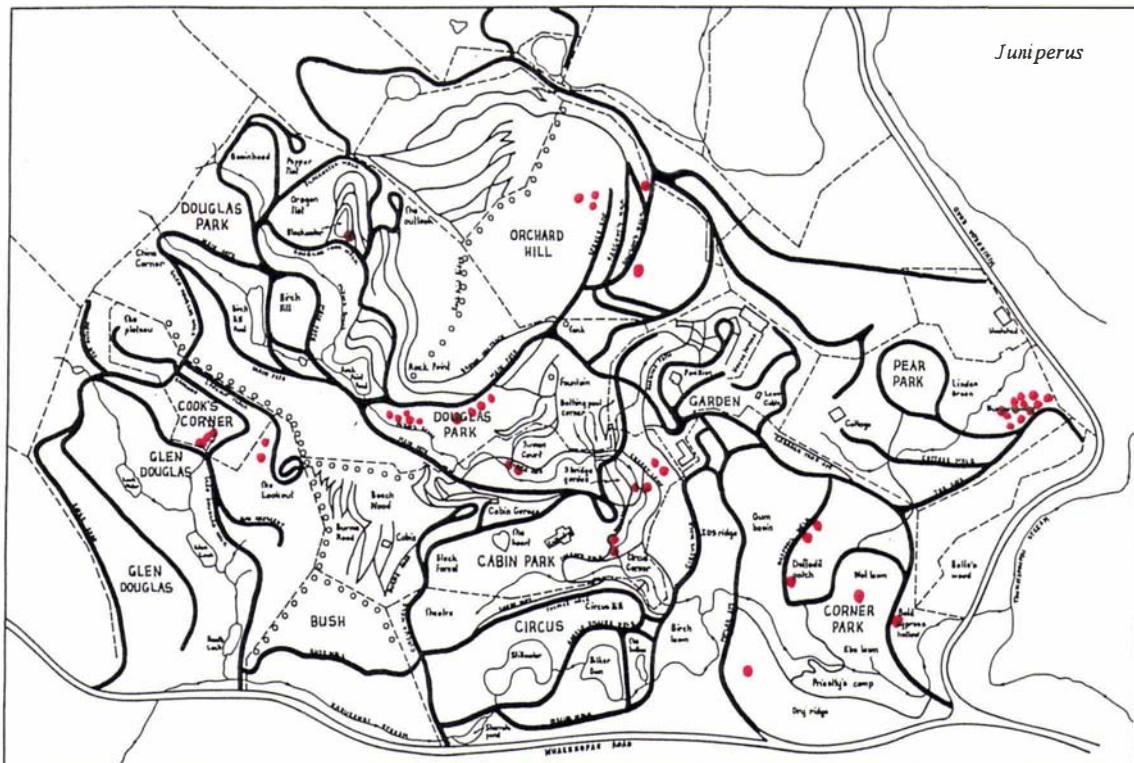
Fraxinus



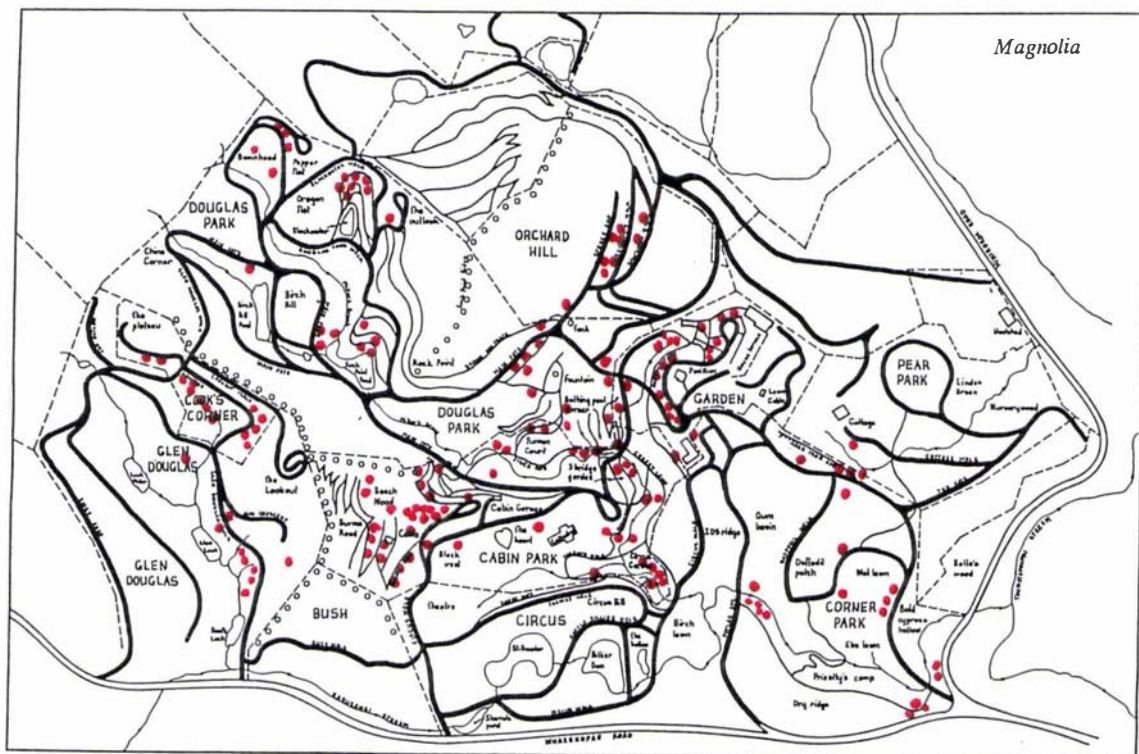
Gleditsia



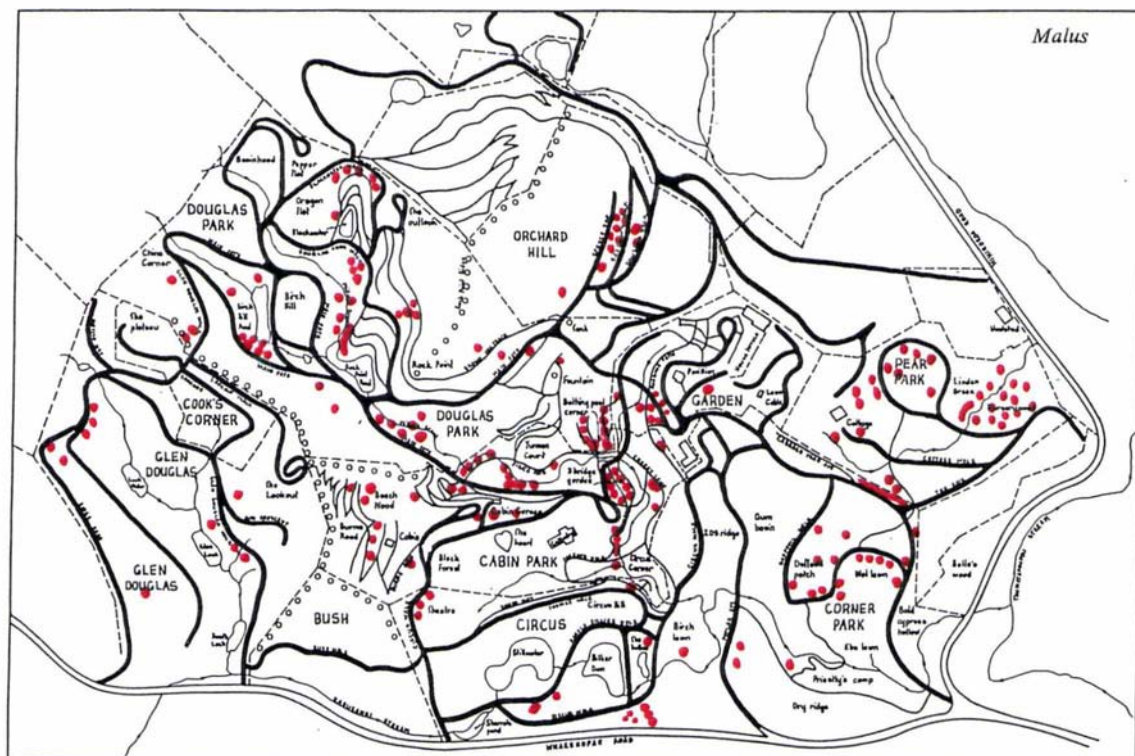
Ilex



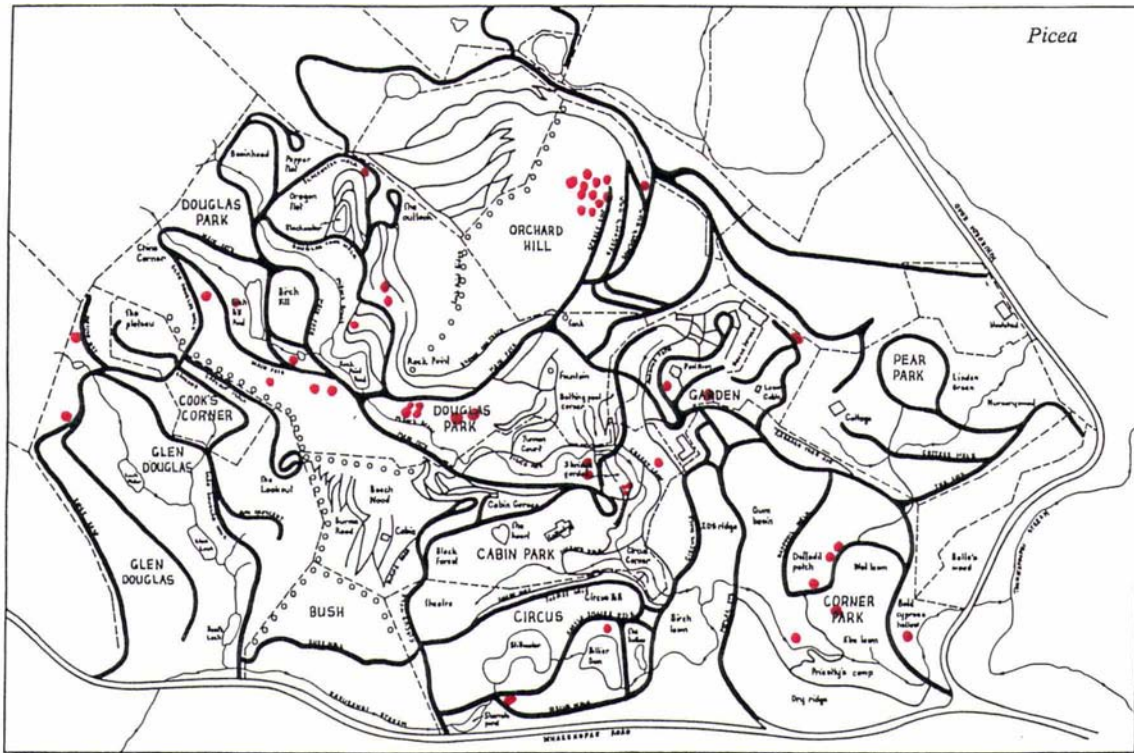
Juniperus



Magnolia



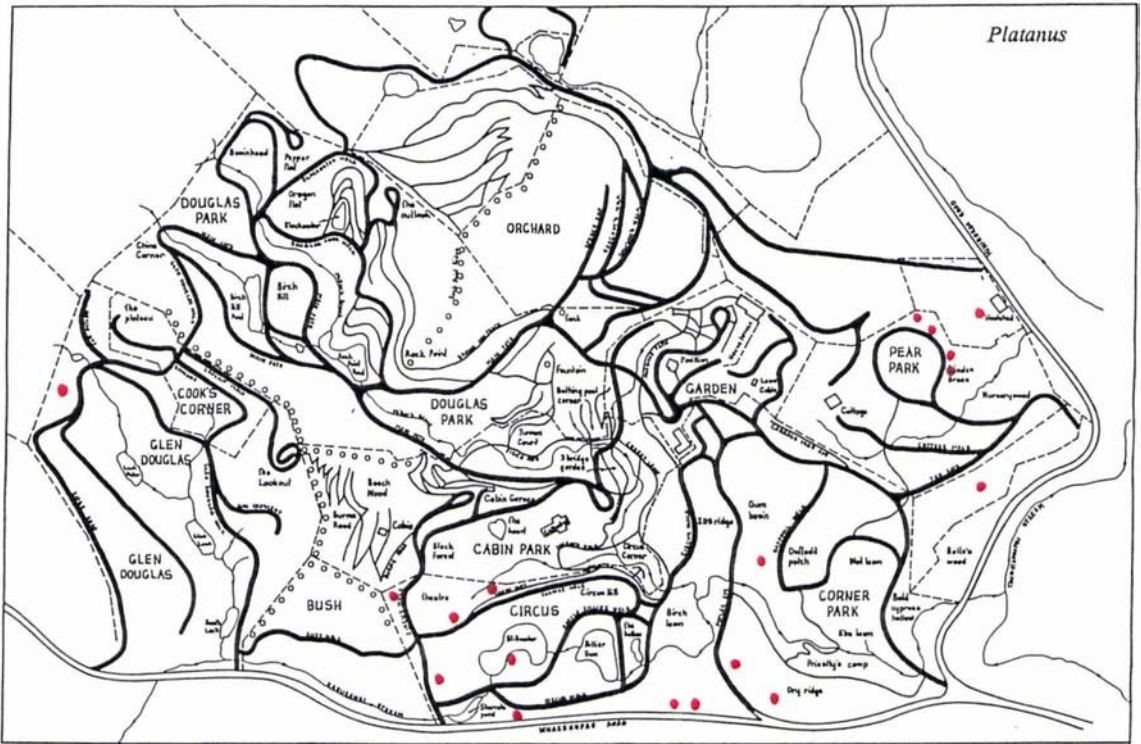
Malus



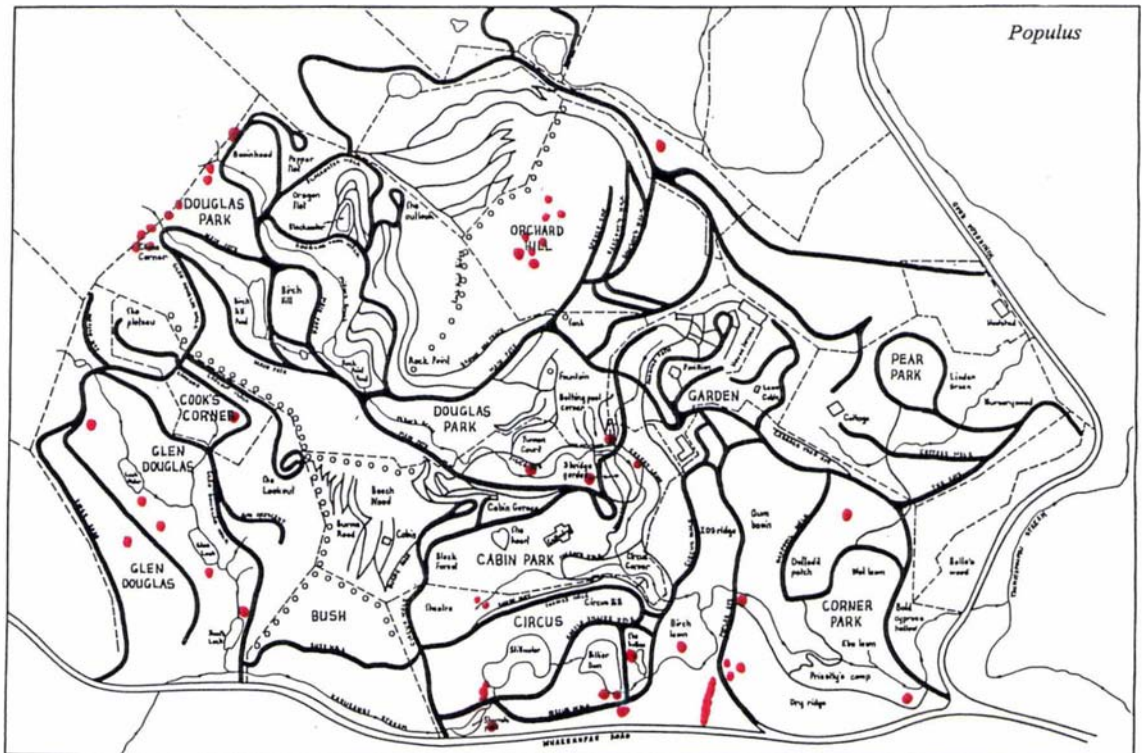
Picea



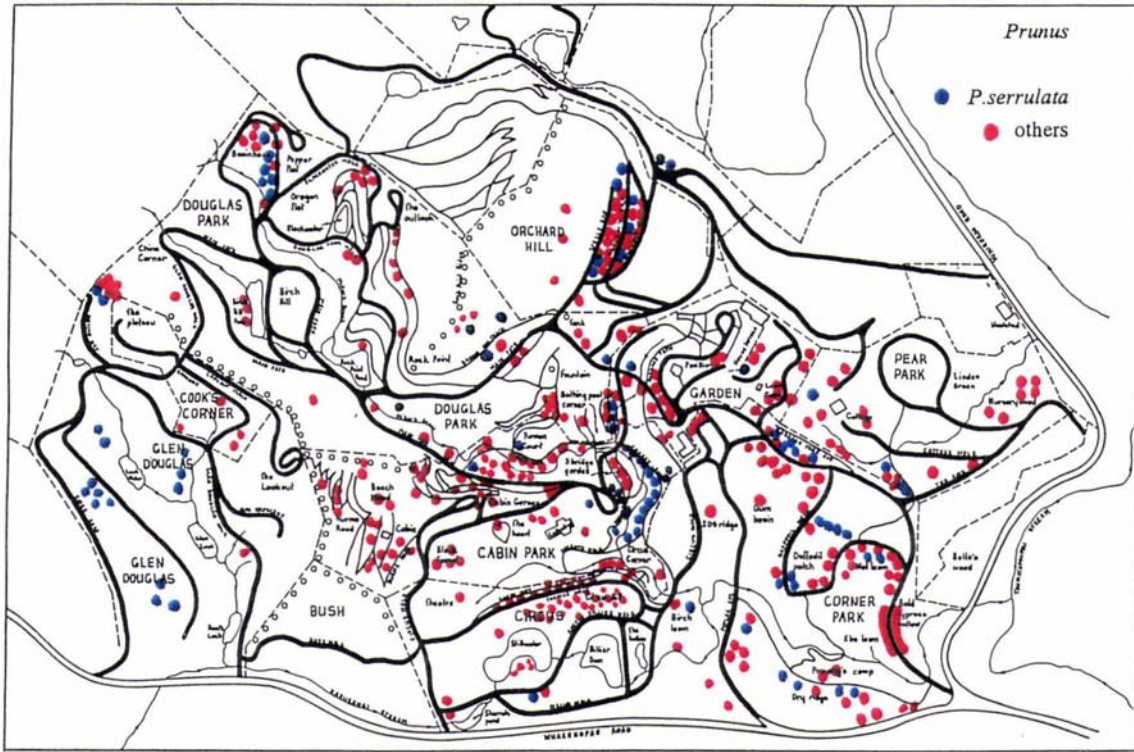
Pinus



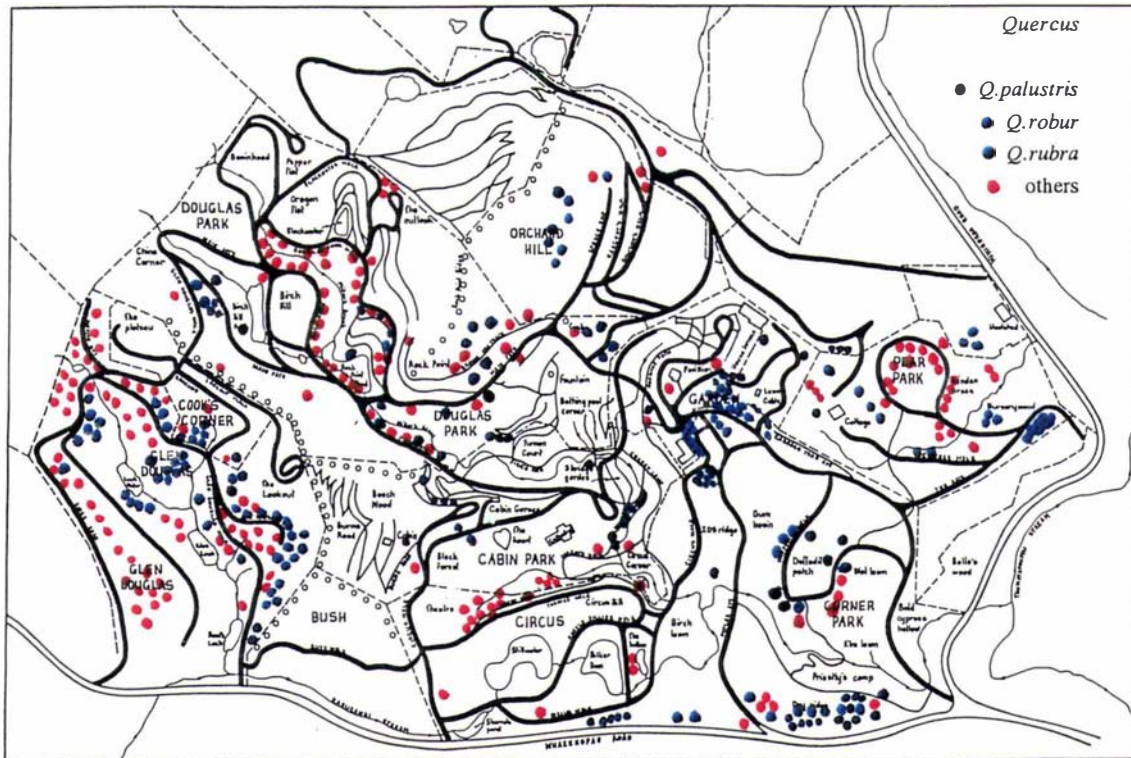
Platanus



Populus



Prunus



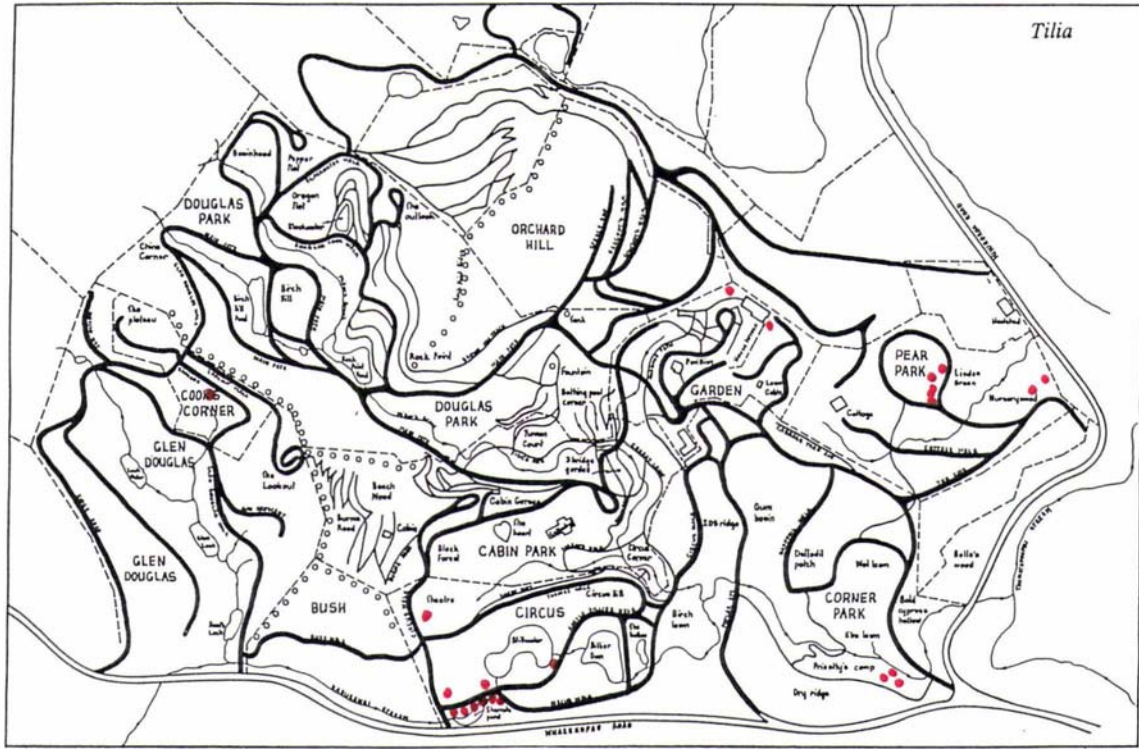
Quercus



Sorbus



Syringa



Tilia

Report of the first workshop



Rhododendron aucklandii 'Rubrum', Circus, September 1988.

REPORT OF THE FIRST EASTWOODHILL WORKSHOP

ASSESSMENT AND DEVELOPMENT OF THE COLLECTION

Eastwoodhill on 16,17 June 1989

Eastwoodhill Publication No. 4

Published 1989

Marion MacKay
Massey University, Palmerston North

Contents

1.0 SUMMARY

2.0 THE ROLE OF THE ARBORETUM

- 2.1 The role of the arboretum
- 2.2 Tourist versus scientific roles
- 2.3 Educational and scientific roles
- 2.4 Conservation

3.0 PRESENT STATUS OF THE COLLECTION

- 3.1 Historical perspective
- 3.2 Key elements of the present collection
- 3.3 Arboretum theme
- 3.4 Assessment of the collection

4.0 DEVELOPMENT OF THE COLLECTION

- 4.1 Proposed future direction
- 4.2 Range of plant material
- 4.3 Cultivars
- 4.4 New Zealand Native Plants
- 4.5 Planting criteria
- 4.6 Establishing an International Profile

5.0 TREE MANAGEMENT STRATEGIES

- 5.1 Tree assessment method
- 5.2 Example problems

6.0 CONCLUSION

- 7.0 APPENDIX ONE - Programme
- APPENDIX TWO - Participants

1.0 SUMMARY

The Eastwoodhill Arboretum is a unique resource in New Zealand. To ensure that the Arboretum realises its potential, management should emphasise, develop and maintain those things that project Eastwoodhill into the future as a collection of international merit.

As a first step in botanical planning for the Arboretum, the inaugural Eastwoodhill workshop considered the composition of Eastwoodhill by assessing the present collection and considering the future development of the collection.

Summary of recommendations

- That the future development of the Arboretum should be consistent with the roles outlined in section two.
- That a more detailed assessment of the collection should be carried out.
- That the future direction of the collection should be that of cool temperate and warm temperate flora, based on the key genera that have been highlighted.
- That the plant material acquired for the collection should have qualities such as botanical interest, rare and endangered, aesthetic interest, so as to provide a memorable experience for visitors.
- That the Trust Board should be proactive in the area of land management with trees.
- That planting of the unstable areas within the new 150 acres should be attended to with urgency.
- That appropriate South American flora be included in the collection.
- That the collection should include plant material that demonstrates the climatic advantage of the Arboretum, and species suitable for climate change conditions in New Zealand.
- That selected cultivars may be included in the collection.
- That the native area be included into the surrounding planting.
- That site selection is the first criterion for planting, other factors such as geographical association, aesthetic merit, seasonal features, should be secondary considerations.
- That the Arboretum should join the IUCN and establish other relevant international contacts.
- That the tree evaluation system should be continued as a mechanism to aid tree management decisions.
- That the workshop group should meet again in April 1990 to continue the consideration of the collection and its further development.

2.0 THE ROLE OF THE ARBORETUM

2.1 The role of the Arboretum

To maintain and further the collection of Douglas Cook:

- Eastwoodhill would not exist without the efforts of Douglas Cook. Therefore there is an obligation to continue the theme that he began, (see below, theme of the collection).
- The extension of this theme into some of the compatible warm temperate flora will make Eastwoodhill a more dynamic concept and help to put the Arboretum on the international map.
- Those plant groups that have done well should be filled out.

To encourage visitors of a scientific and public nature:

- Scientific visitors will enhance the international reputation.
- The 'public' however, will be the sustaining base of visitors.

To be an educational resource:

- For the general public, raising awareness of trees and the environment.
- For particular areas of education, e.g. local school children, university.
- As an educational focus at all levels.
- As a demonstration of the use of trees.

To conserve plant material:

- The New Zealand resource.
- As a repository for conserving endangered species, particularly the warmer climate (warm temperate) material that northern arboreta cannot grow.

To be proactive in the area of land management and soil conservation planting:

- Eastwoodhill represents an opportunity to be proactive in the area of soil conservation planting, land management, and landscape trees.

To act as an international liaison point for botanical matters in New Zealand:

- Eastwoodhill must be put on the international botanical map.
- A link with the IUCN (International Union for the Conservation of Nature and Natural Resources), particularly through the Botanic Gardens Secretariat at Kew should be established.
- As many overseas contacts must be made as possible. The Botanic Gardens Secretariat will be a key contact here as their newsletter is circulated to over 200 botanic gardens throughout the world.

2.2 Tourism versus scientific roles

The general public are the sustaining base of visitors to the Arboretum and therefore must always be catered for. However the unique character of the place as a special botanical collection must never be compromised. Therefore the level of intense tourism must be controlled.

Eastwoodhill is the opportunity for a unique recreational experience. The quality of the experience must be preserved, but the property still be accessible to the general public. Control of vehicular access is the easiest way to exert such control. Perhaps Eastwoodhill should be the regional park for Eastland.

Use by the public:

- Eastwoodhill is not user friendly.
- The 'centre' of the property is not easily identified.
- Autumn is the season that attracts most outside visitors. Spring is mostly locals, many of whom do not pay. It is very quiet over Christmas.
- To create a memorable experience for the public the Arboretum must include planned impact display areas. Plantings such as the Magnolias on Orchard Hill are the type of thing, but more of this is required. A range of different features at different times is desirable.
- The entrance is puny, it should be large and welcoming.
- Young people must be encouraged to Eastwoodhill.

2.3 Educational and Scientific roles

These types of visitors are governed by the types of plants that are here. To be very special and attract these visitors Eastwoodhill should pursue the existing theme of northern temperate material, including botanically interesting material, rare and endangered material, plus warmer temperate material that follows the already mentioned theme. This puts the Arboretum in a good international position with material that northern arboreta cannot grow, and material that the Botanic Gardens Secretariat is looking for sites for. Eastwoodhill should be promoted as special because of this combination of plant material.

Recommendation: That the future development of the Arboretum should be consistent with the roles outlined in section two.

3.0 PRESENT STATUS OF THE COLLECTION

3.1 Historical perspective

The Arboretum today is largely a collection of northern temperate flora, and as such represents the survivors of Cook's collecting efforts. It is important to note that apparently Cook collected anything he could obtain. This conjecture is supported by the data on the plants that he purchased, but which are no longer in the collection. This data can be seen in the 'Plants Purchased' list. {Thesis Appendix Three}

3.2 Key elements of the present collection.

The backbone of the present collection is identified by a core group of plant genera. These are:

Acer, Aesculus, Alnus, Betula, Conifers (all), Fagus, Ilex, Juniperus, Malus, Magnolia, Prunus, Pyrus, Quercus, Tilia.

3.3 Arboretum theme

It was agreed that the theme of the Arboretum was that of temperate and warm temperate flora, focussing on the key plant groups that have already been identified. On the basis of the temperate theme it was decided that New Zealand plants did not rate as part of the character of the place. Geographically the collection is 77% northern hemisphere origin and 16% southern hemisphere origin, (7% horticultural origin).

3.4 Assessment of the collection

The initial assessment of the collection was done by ranking the collection by genus group. Each participant was asked to give two scores to each genus group. The first score was a botanical rating, which aimed to give an indication of the botanical interest of the genus in question. The second score was an aesthetic rating, which aimed to give an indication of the visual interest of the group in question. Thus plants that were considered botanically interesting but not interesting to look at, and vice versa, could be distinguished. The mean of scores from all participants would give an indication of the importance of each plant group. Each genus has a score out of ten for each attribute (botanical and aesthetic). Results of the initial assessment can be seen in the workshop documents. {Assessment results were included in the Background information booklet provided to the participants. Readers of this thesis will find the assessment results in thesis Appendix Eight.}

Assessment results

After consideration of the assessment results it was agreed that plants that had scored 6/10 or above should be kept in the collection, and that plants that had scored 8/10 or above were worth pursuing.

In terms of the criteria for the survey it was agreed that the botanical and aesthetic ratings were suitable. Mr Clapperton equated the botanical score to scientific interest and the aesthetic score to popular interest. However some sort of longevity index might be added to indicate those plants that would be long term subjects in the collection.

The survey should allow for space to include notes on additional families, genera and species that are not currently on the list.

The catalogue, for completeness, needs height measurements for the trees. This was agreed, but recognised as big job.

Continuation of the assessment

It was agreed that the Arboretum should be assessed in more detail by undertaking the survey of the whole catalogue, beginning with the key genera identified. This would provide information on which to base decisions on tree acquisition, tree removal, and propagation priorities.

Recommendation: That a more detailed assessment of the collection should be carried out.

4.0 DEVELOPMENT OF THE COLLECTION

4.1 Proposed Future Direction

The unanimous opinion of the workshop group was that the theme developed by Douglas Cook should be continued and extended. Eastwoodhill exists because of the vision of Douglas Cook and therefore there is an obligation to continue in the manner in which Cook started.

The theme developed by Cook has already been identified as temperate flora. His policy was to purchase anything that was available. It is logical to follow this pattern by taking the warmest and coolest ends of temperate flora that will grow here and filling in in-between, at the same time focussing on the theme genera of the collection.

Within this theme plants collected should be broad leaf and coniferous species that are appropriate to this area, i.e. those that grow well at Eastwoodhill. Plants from geographical ranges that would be suitable for Eastwoodhill but which are not well represented here could be filled in.

The collection of warm temperate species, within the context of the key genera, was seen as a main attraction to visitors. However the acquisition of these species must be selective, for example, it was seen as appropriate to collect *Magnolia* and *Manglietia* as these were already identified as a key group at the arboretum.

It was essential that the arboretum be unique as a collection. This would ensure its standing as a place worth visiting.

Recommendation: That the future direction of the collection should be that of temperate and warm temperate flora, based on the key genera that have been highlighted.

Recommendation: That the plant material acquired for the collection should have qualities such as botanical interest, rare and endangered, aesthetic interest, so as to provide a memorable experience for visitors.

4.2 The range of plants

While discussing the range of plant material that might be grown at Eastwoodhill it became apparent that there were three areas for discussion. These were: plants for conservation purposes, South American plants, climate change.

Soil conservation

In the Gisborne area soil erosion and soil conservation planting will continue to be an important aspect of land management.

Traditionally, soil conservation planting has concentrated on poplars and willows, because they work well. But this is not the sort of role that Eastwoodhill should take in soil conservation planting. The Arboretum must be proactive in the area of its greatest strength, i.e. the range of plant material that it holds. For example, *Abies religiosa* grows very rapidly, and some of the Mexican oaks are very resistant to wind, therein lies the opportunity to be a leader in the area of soil conservation planting development. Certainly the poplars and willows should still be used, but the long term strategy should be in new plant material.

The Arboretum has a potentially very important role as a botanical repository with an extension in land management using trees.

Recommendation: The Trust Board should aim to be proactive in the area of land management with trees.

Recommendation: The planting of unstable areas within the new 150 acres should be attended to with urgency.

South American Plants

The plants of Chile are in harmony with the Eastwoodhill concept. In fact Cook did collect South American material but a majority of it did not survive due to poor siting. There are not a large number, *Nothofagus* is

one of the biggest groups. The inclusion of the appropriate Chilean flora will provide an evergreen element, and be climatically suitable.

Recommendation: That appropriate South American flora be included in the collection.

Climatic advantage

The climatic situation of Eastwoodhill could be a significant drawcard to international visitors in that species can be grown here that cannot be seen in the northern hemisphere arboreta. For example, *Lithocarpus* and *Quercus* from southern China. The abundance of species that can be grown here should be a selling point.

In a similar vein there is likely to be an opportunity for Eastwoodhill to demonstrate a range of plant material suitable for dry areas under a situation of climate change and global warming. Species that may be suitable for New Zealand in that situation could be grown at Eastwoodhill, for example, species from xerophytic climates which fit the collection pattern.

Recommendation: That the collection should include plant material that demonstrates the climatic advantage of the Arboretum, and may demonstrate species suitable for climate change conditions in New Zealand.

4.3 Cultivars

After discussion it was concluded that a selected range of cultivars was acceptable. The suggested criteria were that the plant should have some impact, but not be too far from the type, and blend in for the majority of the season. Cultivars of species and first cross hybrids were preferable. Only the best should be chosen.

Recommendation: That selected cultivars may be included in the collection.

4.4 New Zealand Native Plants

The present native area is an incongruous element in the Arboretum. It was agreed that natives are best demonstrated in one of two ways: either endemic plants which are best portrayed as a remnant, or those plants used to demonstrate a range, e.g. representatives of *Nothofagus*. The latter should be incorporated into the collection and not left to stand as a separate grouping.

The native area at Eastwoodhill, in its present form, is neither of these ways of demonstrating native flora. Because of the planting pattern it will never demonstrate a typical plant association. There is no point in allowing a part of Eastwoodhill to naturally regenerate, there is an area of bush in the rear of the property that should be more suitable. Because of the pattern of mostly evergreen material in the native area it is not visually compatible with the rest of the Arboretum.

Recommendation: That the native area be incorporated into the surrounding planting. Its main role should be to show the comparison between New Zealand flora and the overseas flora in the same genera. Genera such as *Nothofagus*, *Podocarpus*, and *Libocedrus* are plants of this sort. The link to Chilean species can be well demonstrated here.

4.5 Planting criteria

The first criteria for planting an area should be the suitability of the plant for the site, then other criteria can be considered. It was agreed that planting in geographical groups was acceptable, but only if the plants suit the site.

Recommendation: That site selection is the first criteria for planting; other factors such as geographical association, aesthetic merit, and seasonal features should be secondary considerations.

4.6 Establishment of an international profile

The international reputation of the Arboretum is a critical issue in its future development. It was seen that the future standing of the Arboretum in scientific and botanical circles would be greatly enhanced if the uniqueness of the collection could be strengthened.

The Arboretum has two important advantages in establishing an international profile.

1. Northern temperate material is easier to grow in this climate which is more favourable than northern hemisphere sites. Similar plants can be grown though.
2. The more important advantage though is the ability to grow at Eastwoodhill plants of warm temperate origin. These cannot be grown in northern hemisphere sites, and the IUCN is looking for sites to preserve these types of plants.

Already a preliminary liaison with the IUCN has been established and the catalogue is being sent to be processed to identify rare and endangered plants.

Recommendation: That the Arboretum should join the IUCN and establish other relevant international contacts.

5.0 TREE MANAGEMENT STRATEGIES

5.1 Tree assessment method

One of the difficulties in tree management is developing a rational method of decision making. Usually there is no mechanism for quantifying tree quality or desirability, and therefore formulating a basis on which to make decisions.

For the purposes of this workshop a tree rating system was developed which would assist in targeting tree management decisions. First, participants were asked to give each tree in the area to be considered a botanical and aesthetic rating, as had been done in the assessment of the catalogue. These scores were averaged to give an opinion on each tree as to its merit.

At the problem site the trees were then ranked again to arrive at a score for the tree at that particular site. The information provided by the rankings would provide the basis from which to decide the action that should be taken with that particular specimen. For example, a tree that is botanically very desirable but which is in poor health on that site can be targeted for propagation. Conversely a botanically ordinary tree that is doing well on the same site could be sacrificed to provide better conditions for the more desirable tree.

5.2 Example problems

The Pear Park Problem

In this portion of Pear Park there are a number of unrelated trees that are too close together, most of which high botanical ratings. After the site ranking were done and some discussion held the following suggestions were put forward:

<i>Acer opalus</i>	propagate and remove.
<i>Acer pseudoplatanus</i>	remove.
<i>Acer platanoides</i> 'Reitenbachii'	check ID, propagate if special, otherwise repurchase and replant.
<i>Acer velutinum</i> var <i>vanvolxemi</i>	remove.
<i>Aesculus glabra</i>	propagate and resite.
<i>Aesculus hippocastanum</i> 'Pyramidalis'	remain as is, propagate.
<i>Aesculus plantierensis</i>	remain as is.
<i>Crataegus x grignonensis</i>	propagate, remove when established elsewhere.
<i>Crataegus mollis</i>	propagate and site elsewhere.
<i>Crataegomespilus dardarii</i>	urgent propagation, check.
<i>Crataemespilus grandiflora</i>	remain as is, but propagate and resite nearby.
<i>Cunninghamia lanceolata</i>	remove.
<i>Cunninghamia konishii</i>	propagate, bring in new stock.
<i>Malus hupehensis</i>	remove.
<i>Platanus cantabrigensis</i>	remain as is, propagate.
<i>Platanus cuneata</i>	remain as is, propagate.
<i>Platanus occidentalis</i>	remain as is.
<i>Platanus orientalis</i>	remain as is, propagatis.
<i>Populus nigra</i> 'Italica'	remove.
<i>Quercus acutissima</i> ssp. <i>cheni</i>	propagate and resite, propagation of this species is difficult.
<i>Quercus hodgekinsoni</i>	leave the middle one, remove others.
<i>Quercus x ludoviciana</i>	remain as is, propagate.
<i>Quercus marilandica</i>	remain as is, propagate (difficult).
<i>Quercus variabilis</i>	remain as is for the moment, establish a group elsewhere then remove this group.
<i>Tilia petiolaris</i>	remain as is, plant elsewhere as well.

Given these decisions the restructured area would concentrate on the Plane trees and the oaks, with some hawthorn. {These plants can be found in grid squares D 12 and E 12 of plan 2 in thesis Appendix Two.}

This exercise highlighted the need to refine the site ranking procedure. The site ranking could clearly be divided into two portions, a health/survival factor, and a desirability in the composition factor. This was incorporated into the problem for the afternoon.

The Orchard Hill Problem

On Orchard Hill there are a number of related trees, many of which have a high botanical score, but which are too close together, and not always of good health. For this problem the site rating was divided into two portions: the survival factor, and the desirability factor.

The conclusions were as follows:

<i>Abies amabilis</i>	Low scores. Try this species again on a better site that is moist but well drained, a shaded gully would be better. Remove this tree from this site once re-established elsewhere.
<i>Abies bracteata</i>	This plant is from a hot dry place and is quite suitable for this site. Leave. In fact this is the best of the <i>Abies</i> here.
<i>Abies 632 (concolor)</i>	Remove.
<i>Abies concolor</i>	Retain for now, this species should be good for Eastwoodhill for gravely soils.
<i>Abies concolor</i> 'Candicans'	Retain and propagate from the fallen tree.
<i>Abies concolor</i> 'Glauca'	Retain.
<i>Abies firma</i>	Retain.
<i>Abies georgiana</i>	This is a poor specimen, reintroduce from Mr Gordon and then remove this tree.
<i>Abies 631</i>	Retain.
<i>Abies 633</i>	Remove.
<i>Abies holophylla</i>	Retain.
<i>Abies numidica</i>	Retain.
<i>Abies spectabilis</i> var. <i>brevifolia</i>	Not a good specimen but worth trying here, re-introduce.
<i>Abies veitchii</i>	Retain.

Abies should be planted at the base of the hills in a moisture band. Use *Betula* as a nurse tree to get conifers started. *Alnus* is another useful one as it gives nitrogen as well. Ron Gordon has used lombardy poplar for the same purpose. *Betula* was thought to be a good ecological combination, good at low pH. The important *Abies* should be replanted at more suitable sites. Orchard Hill should be replanted with the dry climate ones, whilst still retaining the character of the Hill. {*Abies* can be found in grid squares K10 and L10 of plan 4 in thesis Appendix Two. *Picea* can be found in grid squares L11 and L12 of plan 5 in thesis Appendix Two.}

<i>Picea bicolor</i>	Retain. The douglas fir above is a problem.
<i>Picea complanata</i> f. <i>latisquamea</i>	Retain.
<i>Picea koyami</i>	Retain, the pine nearby is a problem, but the pine is also important.
<i>Picea morrisonicola</i>	This tree may be the only one in the country and therefore should be retained. The Douglas fir above must be removed.
<i>Picea obovata</i>	A tiny plant squashed under others. A very poor tree but not available in NZ. Leave and propagated urgently.
<i>Picea orientalis</i>	Retain.
<i>Picea brachytyla</i>	Marginal, not thrifty, retain.
<i>Picea sitchensis</i>	Remove the smaller one, retain the larger one.
<i>Picea spinulosa</i>	Retain but remove the associated Douglas fir.

Picea wilsoni

Remove. This tree needs much more cold than it is getting here and will not do well here. Easily available so remove.

It was agreed that the method of tree evaluation and therefore decision making was a particularly worthwhile exercise and that this could be used throughout the arboretum. It will be a useful method to assist management of the existing trees in problem areas.

Recommendation: That the tree evaluation system should be continued as a mechanism to aid tree management decisions.

6.0 CONCLUSION

It was agreed that the workshop had been a worthwhile exercise and that useful recommendations had arisen from the discussion. Particularly the group wished to emphasize the value of planning and discussion for the development of the Arboretum. The participants felt that the level of consensus arrived at was gratifying and that the further consideration of the collection should be an ongoing thing.

Recommendation: That the workshop group should meet again in April 1990 to continue the consideration of the collection and its development.

7.0 APPENDICES

APPENDIX ONE - PROGRAMME

Workshop objective: A preliminary assessment of the Eastwoodhill collection, and the consideration of a system for decision making on tree management.

Saturday 17 June

- | | |
|--------------|---|
| 9.00am | Welcome and introduction |
| 9.15-10.15am | Assessment of the collection. Consideration of survey results |
| 10.30-12.00 | Assessment of the collection. Consideration of survey results |
| 1.00-2.45pm | Tree management - Pear Park |
| 3.00-5.00pm | Tree management - Orchard Hill |
| 7.00pm | Dinner and meeting with the Trust Board |

Sunday 18 June

- | | |
|-------------|---|
| 9.00-10.30 | The function of an arboretum |
| 10.45-12.00 | Wider prospects, plants not present at Eastwoodhill |
| 1.00pm | Workshop summary |

Report of the second workshop



Photinia davidsoniae, Corner Park, December 1989.

REPORT OF THE SECOND EASTWOODHILL ARBORETUM WORKSHOP

DEVELOPMENT OF THE COLLECTION

15-17 April 1990

Marion MacKay
Massey University, Palmerston North

Eastwoodhill Publication No. 5

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Contents

SECTION ONE:	Issues
SECTION TWO:	Key Genera
SECTION THREE:	Development of the genus <i>Magnolia</i> at Eastwoodhill.
SECTION FOUR:	Management plan for Pear Park
SECTION FIVE:	Curator's forum: Basinhead
SECTION SIX:	Conclusions
APPENDIX ONE:	Programme
APPENDIX TWO:	Tables referred to in the text
APPENDIX THREE:	Rating scales for field exercises
APPENDIX FOUR:	List of participants

Footnote: The workshop report in this thesis has been slightly modified from the original. Format has been modified slightly for this thesis. Content has been modified with respect to the maps of Pear Park that were in the original report. In this version the maps are not included but the reader is referred to the maps of Pear Park in thesis Appendix Two. Content has also been modified to ensure that the reader of this thesis can access all of the information that was provided to the workshop participants. Thus, some information that was in the Background Information booklet for the participants (but not in the original report), has been placed in the report version in this thesis. The programme has been added as an extra appendix. Tables 2.6, 2.7, 3.4, 3.5, 5.1, 5.2, 5.3, 5.4 are additional to the original report but were in the Background Information Booklet.

Resume

In April 1990 the Eastwoodhill Plant Management Committee met for the second time to consider aspects of the management and development of the collection of plants at the Eastwoodhill Arboretum. These deliberations are consequent to the first workshop which completed a preliminary evaluation of the collection.

Further consideration of the key genera of the collection achieved a refinement of the list of plant genera identified as most important to the character of the Arboretum. A detailed analysis was given to the genus *Magnolia* which had been identified as one of the most important of these genera. A development plan for this genus at Eastwoodhill was formulated.

A third exercise tested a park evaluation and planning method, using Pear Park as the example. The current plantings in this park were considered in light of the character and objectives for the park. The park was examined in detail and trees assessed for a variety of factors which were then used as a basis for planning decisions. The result of this exercise is the development of a long term strategy for the park.

Two exercises were conducted to introduce the areas Basinhead, and the Bush area, which will be the subject of further development reviews in the future.

This workshop was conducted under the auspices of the Eastwoodhill Arboretum Trust Board.

SUMMARY OF RECOMMENDATIONS

Section One: Issues

That the Plant Management Committee should establish liaison with the Douglas Cook Centre for Education.

Section Two: Key Genera

That *Camellia*, *Crataegus*, *Fraxinus* and *Populus* (species only), be added to the list of key genera and *Cedrus*, *Cupressus*, *Juniperus* and *Pinus* be the key conifer group.

That the redefined key genera list (present) now includes:

Acer, *Aesculus*, *Alnus*, *Betula*, *Camellia*, *Cedrus*, *Crataegus*, *Cupressus*, *Fagus*, *Fraxinus*, *Ilex*, *Juniperus*, *Malus*, *Magnolia*, *Pinus*, *Populus* (species only), *Prunus*, *Pyrus*, *Quercus*, *Tilia*.

That *Celtis* (and Ulmaceae), Theaceae, Magnoliaceae, *Callitris*, *Keteleeria*, *Podocarpus*, *Taiwania*, and Taxodiaceae be considered as potential future key genera.

That the acquisition policy for key genera groups should, in the absence of a specific genus plan, be the acquisition of all species where possible. If a species does not succeed at Eastwoodhill then an herbarium sample should be held.

That the acquisition policy for non key genera groups should be that of selective acquisition based primarily on climatic suitability, followed by other selection factors.

Section Three: Magnolia at Eastwoodhill

That with respect to the Magnolia family trees examined in the field exercise, the actions as described in Table 3.13 be undertaken.

That the development plan for the genus *Magnolia* at Eastwoodhill, as outlined in section 3.5 of this document, be adopted.

Section Four: Development plan for Pear Park

That the theme of Pear Park, as outlined in section 4.3 of this document, be ratified.

That the management strategy for Pear Park, as recommended in section 4.5 of this document, be adopted.

Section Five: Curator's forum

That the ideas outlined in discussion section 5.3 be considered in the development of the Basinhead area.

That an assessment of the plant material in Basinhead be conducted and the results thereof be used in conjunction with section 5.3 to resolve development issues for the Basinhead area.

Section Six: Conclusions

That the third workshop be held in early 1991.

That the third workshop address topics such as outlined in section six of this document.

SECTION ONE: Issues

Aim

To discuss issues relevant to the Plant Management Committee and its operation.

Issues

1. The Douglas Cook Centre for Education. The new study centre development was outlined. It was felt that the plant management committee should liaise with the group running the study centre. At the next meeting it would be valuable to discuss the herbarium aspect of the centre.
2. Public interface. To inform arboretum users of the activities of the workshop it is proposed that the curator prepare items for the next newsletter of the Friends of Eastwoodhill.

Recommendation: That the Plant Management Committee should establish liaison with the Douglas Cook Centre for Education.

SECTION TWO: Key Genera

2.1 Aim

The aim of this section was to continue the development of the key genera of the collection with the ultimate aim of devising a development plan for each genus.

2.2 Background

Initially the background information to this discussion was reviewed (Appendix Tables 2.1, 2.2). The definition of key genera was reiterated:

Key genera - the major groups of plants that form the backbone of the collection. These are the plants that give Eastwoodhill its distinct character.

The key genera assigned at the first workshop were reviewed. These were:

*Abies**, *Acer*, *Aesculus*, *Alnus*, *Betula*, *Conifers (all)*, *Fagus*, *Ilex*, *Juniperus**, *Malus*, *Magnolia*, *Picea**, *Pinus**, *Prunus*, *Pyrus*, *Quercus*, *Tilia*

* These conifer groups included individually as they are the largest groups. This was an arbitrary decision by the author when preparing the background notes, this matter has not yet been discussed by the workshop.

2.3 Discussion

The assessment results from the first workshop, and the associated ranking of genera was discussed (Appendix Tables 2.3-2.5). Assessment results for the genera at Eastwoodhill in terms of average score, number at Eastwoodhill, and weighted score were considered.

It was noted that all key genera, except *Pyrus*, achieved an average score of 8.0 or above and therefore are included in the table of ranking according to average score (Appendix Table 2.3). This table also demonstrated the relative importance of the single species and small genus groups in relation to the selected key genera. Of the top six ranks four are held by key genera, the other two are held by *Magnolia* group plants.

Genera were also ranked for number of species and cultivars at Eastwoodhill, in this case key genera held the top six places (Appendix Table 2.4). Genera that ranked highly in this table, but which are not key genera included, *Sorbus*, *Syringa*, *Crataegus*, *Chamaecyparis*, *Fraxinus*, and *Populus*.

Ranking for weighted score demonstrated a similar pattern to the above, with the top five placings being held by key genera (Appendix Table 2.5). Groups that appear in the top ranking but which are not key genera included *Sorbus*, *Syringa*, *Crataegus*, *Chamaecyparis*, *Fraxinus* and *Populus*.

Given this information a number of genera were debated as possible inclusions in the key genera list. The key genera as the collection stands at present were considered, as well as proposals for future key genera. Conifers were discussed separately.

Present genera - broadleaf

1. As proposed at the first workshop

Acer, Alnus, Aesculus, Betula, Ilex, Fagus, Malus, Magnolia, Prunus, Pyrus, Quercus, Tilia, are key genus groups and this status should not be changed.

2. *Crataegus*.

The number of species and cultivars of this genus present at Eastwoodhill give this group a ranking of 11th for this factor. The group was also ranked 11th for weighted score. Although the average score (7.56) is below the designated cut off point of 8.0 it was felt that the other factors merit this genus being proposed as a key genus. The problem of Pear slug was commented on, the plants will need spraying to look their best.

3. *Fraxinus*

This genus also merited consideration given the ranking of 14th for number of species and cultivars at Eastwoodhill. *Fraxinus* was ranked 13th for weighted score. The average score for this group (7.61) is also below the designated cut off point of 8.0 but Eastwoodhill seems to hold a nationally significant collection of ash (see IDS data) which should be given key genus status. The genus consistently appears in the upper portions of the analysis tables, but was not originally included in the key genus group. It is now proposed as a key genus.

4. *Populus*

Populus also appears in the upper group for weighted score, and within the first 20 places for number at Eastwoodhill. With regard to the latter the genus ranks as well as *Juniperus*, and better than *Ilex* or *Aesculus*. The average score is relatively low at 7.17. Of all the genera that consistently appear in the upper portions of the score tables this group is the lowest ranked of all. It is proposed that *Populus* becomes a key genus as regards species, particularly for the new area. Clones of species should be chosen to avoid cross pollination and seeding problems. Hybrids and cultivars should be avoided (a) because these types are comprehensively covered by the Plant Materials Centre, and (b) because there are a great number of these, while Eastwoodhill is concentrating on species.

5. *Sorbus*

Sorbus ranks 7th for weighted score, indeed it is the highest ranking non-key genus. In fact it achieves a high average score (8.5), as well as a high rank for Number (7th), in addition to the high weighted score rank. These figures would suggest that this group should be included as a key genus. However *Sorbus* is climatically unsuitable, which is easily demonstrated upon examination of the trees in question. The climate is not cool enough and most of the trees are unthrifty. Many have died out and are listed as 'not found'. *Sorbus* is not proposed as a key genus.

6. *Syringa*

Syringa ranks 9th for weighted score, with an average score relatively low at 7.12. *Syringa* was declared not suitable as a key genus as lilac cultivars are not successful here given that they need more intense cultivation than is possible at Eastwoodhill. However species lilacs were worth considering.

7. Deciduous azaleas.

Deciduous azaleas were discussed as these form an important element of the spring character of the arboretum. There are problems in growing these plants on this site, therefore plant selection must be prioritized to take this factor into account.

8. *Camellia*.

Camellia was proposed as a key genus. This genus was not included in any of the genera assessments as at one time it was considered that *Camellia* (and *Rhododendron*) did not constitute an important element of the Arboretum. Therefore no calculations had been done for the group. Recent calculations show the genus to be as follows:

$$19 \text{ species} + 199 \text{ cultivars} = 218$$

This would place *Camellia* at the top of the table for 'number at Eastwoodhill'. The genus was not surveyed for botanical and aesthetic score, so it cannot be added to those tables.

It was pointed out that the present collection of 'old' camellias at Eastwoodhill is quite important as a representation of that group of camellias and that this should be preserved. It was proposed that the Arboretum collect species camellias, including tender types from China, whilst at the same time preserving the 'old' collection. It was considered inappropriate to have 'modern' camellias at the Arboretum. Species and cultivars for the collection would have to be selected as many of the genus are not climatically suitable.

Future key genera

The following were proposed as potential future key genera:

1. *Celtis*.

Although there are only a few in the collection at present, this group may be an important elm family group to maintain a collection of given the recent arrival of Dutch elm disease in New Zealand.

2. *Lithocarpus* and *Castanopsis*.

These genera were suggested as a future key genus of warm temperate origin and as a companion group to the oaks. There are many species, but obtaining the plants may also be difficult.

3. *Nothofagus*

This genus may be important as a member of the oak group and as part of the Gondwanaland collection.

Present genera - Conifers

In the original deliberations at the first workshop it was decided that all conifers should be included as a collective key genera group because of the importance of the conifers as a whole. On investigation it transpires that there are 37 genera of conifers at Eastwoodhill, many of these are single representatives or only small groups. In order to make data handling easier only the larger groups were included in the tables for this workshop, namely *Abies*, *Picea*, *Pinus*, *Juniperus*. The conifers as a group had not been discussed by the workshop, this was subsequently undertaken (Appendix Tables 2.3-2.5).

In terms of number of species and cultivars at Eastwoodhill, and the weighted score, the following genera hold a significant position: *Abies*, *Chamaecyparis*, *Cupressus*, *Juniperus*, *Pinus*, *Picea*. There are a number of very high scoring individual examples in terms of average score, but these do not have the weight of numbers to constitute a key genus.

1. *Abies* and *Picea*

These two groups rank well in terms of weighted score and fall in the top 20 places for number at Eastwoodhill. *Abies* has an average score of 8.25 and *Picea* of 7.89. However many of these species are not climatically suitable for this site and if a policy of collecting all species is pursued then many failures will result. It was proposed that these genera be removed from the rank of key genus and that a policy of selective acquisition be followed, based on climatic suitability (dry climate range).

2. *Cedrus*

This is a small genus group that does not rank for any of the factors measured. However the success of the genus, and its high level of use in the structural plantings of the arboretum support the inclusion as a key genus.

3. *Chamaecyparis*

Although this genus is ranked quite highly for number at Eastwoodhill, and the weighted score is similar to that of *Juniperus*, the average score is low at only 6.28. *Chamaecyparis* is not proposed as a key genus.

4. *Cupressus*

This genus is proposed as a key genus because of its good climatic suitability. The ranking for Number is 27th, similar to *Fagus* and *Tilia*. The weighted score is also low, being near the lower cut off point, the average score is also low at 6.78. However the climatic suitability of the group, and therefore the potential success of the group at the arboretum outweighs the previous factors and includes this group in the proposal for key genus status.

5. *Juniperus*

Juniperus is proposed as a key genus because of its climatic suitability for the site. With an average score of 7.11 this genus does not appear in the ranking for average score. Its position for weighted score and number are 15th and 14th respectively. Therefore in terms of ranking this genus holds a middle range position. The climatic suitability outweighs this though, as does the significance of the collection already held at Eastwoodhill when compared with national results.

6. *Pinus*

Pinus is also proposed as a key genus because of its climatic suitability. This genus is the highest ranking conifer group in terms of weighted score and for number of species and cultivars at Eastwoodhill. At an average score of 8.39 it is the highest ranking major conifer group for this parameter.

Future key genera - conifers

Keteleeria and *Taiwania* were proposed due to the large number of warmer temperate examples of these groups that could be grown at Eastwoodhill. *Callitris* is proposed for climatic suitability. *Podocarpus* is proposed for the Gondwanaland collection. *Athrotaxis* and the Taxodiaceae group are proposed as an important group of Chinese and/or warm temperate flora.

Collection policy for key genera

After some discussion it was agreed that acquisition of plants in the key genera groups should follow the following policy:

1. The emphasis should be on species of the key genera groups. All species available should be attempted, either grow a live specimen, or if the species is not successful then keep a herbarium specimen.
2. If the genus is not a key genus then acquisition should be selective.

Issues

1. Criteria for key genera should be considered.
2. Objectives in relation to the expansion of key genera should be developed.
3. Conifer groups need to be examined and suitable species preselected.

Recommendations:

That *Camellia*, *Crataegus*, *Fraxinus* and *Populus* (*species only*), be added to the list of key genera and *Cedrus*, *Cupressus*, *Juniperus* and *Pinus* be the key conifer group

That the redefined key genera list (present) now includes:

Acer, *Aesculus*, *Alnus*, *Betula*, *Camellia*, *Cedrus*, *Crataegus*, *Cupressus*, *Fagus*, *Fraxinus*, *Ilex*, *Juniperus*, *Malus*, *Magnolia*, *Pinus*, *Populus* (*species only*), *Prunus*, *Pyrus*, *Quercus*, *Tilia*

That *Celtis* (and *Ulmaceae*), *Theaceae*, *Magnoliaceae*, *Callitris*, *Keteleeria*, *Podocarpus*, *Taiwania*, and *Taxodiaceae* be considered as potential future key genera groups.

That the acquisition policy for key genera groups should, in the absence of a specific genus plan, be the acquisition of all types where possible. If a species does not succeed at Eastwoodhill then an herbarium sample should be held.

That the acquisition policy for non key genera groups should be that of selective acquisition based primarily on climatic suitability, followed by other selection factors.

SECTION THREE: Development of the collection - Magnolia**3.1 Aim**

To consider in detail the status of the genus *Magnolia* at Eastwoodhill and formulate a development plan for that genus within the collection.

3.2 Background information and field exercise

The background information for this exercise was considered (Appendix Tables 3.1- 3.3). The current Eastwoodhill collection contains 61 species and cultivars of *Magnolia*, and 12 other species and cultivars of other members of the Magnolia family. This represents about 3% of the total species and cultivars at the arboretum. *Magnolia* was one of the most important genera in the Arboretum assessment, given the highest average score, and being placed highly for weighted score (4th) and for number (5th). *Talauma* and *Manglietia* both ranked highly for average score and are highlighted as single example high scoring plants.

In addition to the above Cook also purchased another 37 species and cultivars that are no longer in the collection (Appendix Table 3.2).

As a representation of the genus Eastwoodhill holds about 50% of *Liriodendron* species, about 40% of *Magnolia* species, and less than 6% of any of the other family members (Appendix Table 3.3).

The assessment results for this group were then considered (Appendix Tables 3.9-3.11). The plants assessed as being the most botanically important included a mixture of *Magnolia* and Magnolia family plants. *Manglietia*, *Michelia*, *Talauma* and *Schisandra* all occurred above the cut off of 8.0 for average score. It is notable that most of the species ranking as botanically very important are represented by only one or two specimens at Eastwoodhill. The plants assessed as being the most aesthetically important produced a different list. Notably types of *Magnolia campbellii* were considered the most important. Species that rank highly in both lists include *M. campbellii* types, *M. sargentiana* var. *robusta*, *M. sprengeri* var. *diva*, *M. dawsoniana*, *Michelia doltsopa*, *Manglietia* sp, *Talauma* sp. (Appendix Tables 3.9, 3.10).

Given the preliminary assessment of the importance of various species a field exercise was then undertaken to assess the quality of the actual plants on site. Species for consideration were those that ranked highly in one or both of the botanical and aesthetic assessments. In the field exercise individual examples were rated for health, and as an example of the species. Rating scales can be found in Appendix Three.

3.3 Results

Table 3.12 Preliminary and field assessment of selected *Magnolia* family plants

Species	Reference number	Botanical score	Aesthetic score	Status at Eastwoodhill	Health score	Example of species score
<i>Magnolia officinalis</i> var. <i>biloba</i> (Barn)	Ga940	8.0	7.2	1/2	8.2	7.8
<i>Michelia doltsopa</i> (Barn)	Ga1002	8.2	9.2	1/3	5.8	5.0
<i>Magnolia veitchii</i> 'Peter Veitch'	Ga860	5.0	7.?	1	5.8	5.8
<i>Michelia doltsopa</i> (Black Gate)	DP155	8.2	9.2	2/3	6.6	6.2
<i>Magnolia dawsoniana</i> (upper)	OH538	8.4	9.0	1	7.8	8.4
<i>Magnolia sprengeri</i> var. <i>diva</i>	OH550	8.8	9.8	1	7.4	5.4
<i>Magnolia sargentiana</i> var. <i>robusta</i>	OH568	8.6	9.8	1	7.0	6.4
<i>Magnolia kobus</i> var. <i>borealis</i>	OH544	6.0	7.0	1/many	9.0	8.6
<i>Magnolia veitchii</i>	OH652	5.8	7.8	1/3	8.2	6.4
<i>Michelia compressa</i>	DP66	8.6	6.0	1	8.8	8.2
<i>Magnolia grandiflora</i> 'Goliath'	DP148	6.4	8.4	1	8.6	7.0
<i>Magnolia macrophylla</i>	DP156	8.4	8.4	1/3	8.4	6.6
<i>Magnolia macrophylla</i>	DP157	8.4	8.4	2/3	8.2	8.2
<i>Magnolia officinalis</i> var. <i>biloba</i>	DP158	8.0	7.2	2/2	5.8	5.4
<i>Magnolia campbellii</i> (Birch Hill Pond)	DP77	8.2	9.8	1/3	7.2	6.8
<i>Magnolia campbellii</i> (Cook's Corner)	CC5	8.2	9.8	2/3	6.2	5.6
<i>Magnolia cylindrica</i> (Cook's Corner)	CC7	8.2	7.8	1/2	3.4	3.6
<i>Magnolia</i> 'Douglas Cook'	CC4	6.0	8.0	1/7	7.6	8.0
<i>Talauma hodgsonii</i>	CaP	8.8	8.4	1	8.0	6.6
<i>Magnolia campbellii</i> (Cabin)	CaP	8.2	9.8	3/3	7.0	6.4
<i>Manglietia</i> sp.	CaP	9.0	8.4	1	8.6	7.2
<i>Magnolia delavayi</i> (Cedar Garden)	CaP	7.0	7.6	1/3	9.2	8.8
<i>Liriodendron tulipifera</i> 'Variegata'	CaP	6.4	7.8	1/2	8.8	9.4
<i>Schisandra</i> sp.	CaP95	8.6	6.8	1	9.0	8.4

Notes

1. Plants on this list scored 7.5 or over for either botanical or aesthetic score.
2. Plants are listed in the order visited.
3. All assessment scores are expressed as a mark out of ten.
4. Status at Eastwoodhill indicates the number of that species, e.g. 1/3 indicates one specimen out of three. 3/3 indicates the third specimen out of three.

Table 3.13 *Magnolia* field exercise - Recommendations

Magnolia officinalis var. *biloba*. This tree poses no problems, all scores are satisfactory.

Michelia doltsopa (Barn). Action required. This tree is a reversion from the Caerhays form. It is quite one sided due to crowding on the inside, it is also double leadered. Assessments for health and example of species were both unsatisfactory. As this species is easily available it should be repeated on a better site. There are better forms available that should be obtained, for example 'Silver Cloud'.

Magnolia veitchii 'Peter Veitch' Action required. This plant is on a very hard site. Neither field ratings are satisfactory. It should be propagated and repeated. The species is available commercially.

Michelia doltsopa (Black Gate). Although this tree achieved field scores above the critical level of 6 it has some problems. It seems to have borer and it has lost its leader. It is on shallow soil and has been overshadowed (latterly overhanging branches have been removed). The identity is uncertain, the underside is rather rusty, but not enough for 'Rusty', it may be a D&D form.

Magnolia dawsoniana (upper OH). All ratings satisfactory. This species has been repeated elsewhere.

Magnolia sprengeri var. *diva*. This tree is showing vigorous sucker growth indicating it has regrowth potential. But it is badly overshadowed. It is not an adequate example of the species but it will make healthy growth if suitably released and will improve over time. This species has been repeated elsewhere.

Magnolia sargentiana var. *robusta* This particular specimen should be propagated. The overhanging oak branches should be removed

Magnolia kobus var. *borealis* This particular specimen should be propagated as it is a good form.

Magnolia veitchii (inside OH gate). This tree has poor form and is small for its age. It is making some strong growth. This species seems to be particularly susceptible to possums.

Michelia compressa A healthy tree that is a good example of the type. Remove competing branches from nearby trees. This species has been repeated elsewhere.

Magnolia grandiflora 'Goliath' A healthy tree that is being crowded. Remove competing branches from nearby trees. Remove nearby cherry.

Magnolia macrophylla (cluster). A cluster of stems that is the remnants of heeled in trees. Healthy and a reasonable example.

Magnolia macrophylla Good example in all respects.

....continued

Magnolia officinalis var. biloba (Rock Point Pond). Urgent action required. A poor example that is not healthy. Some trunk sprouts are occurring indicating growth difficulties, dieback of the crown supports this assertion. There are many trees in the vicinity although the crown itself is not crowded. This species has already been repeated on Orchard Hill.

Magnolia campbellii (Birch Hill Pond). This plant is a mixture of *M. campbellii* and *M. campbellii f. alba*. It is satisfactory for health and as an example of the species.

Magnolia campbellii (Cook's Corner). Action required. This tree is a poor example and is marginal for health. Although it is on a very windy site this plant flowers satisfactorily, it should be protected from wind. This would improve its capacity as an example of the species.

Magnolia cylindrica Urgent action required. This is a very unhealthy plant as the health score of 3.4 indicates, consequently it is also a poor example of the species. This species has already been resited elsewhere.

Magnolia 'Douglas Cook' Satisfactory.

Talauma hodgsonii. Although healthy and a reasonable example, this tree is very small for its age, it has been severely suppressed. The adjacent cherry should be removed to remove competition.

Magnolia campbellii (Cabin). This plant is healthy enough but very crowded. This plant exhibits particularly good flower colour. It should be propagated.

Manglietia sp. The identity of this tree is uncertain. It is a healthy specimen and a good example. It is producing some strong growth as a result of being released from competition the season before.

Magnolia delavayi A very good specimen in spite of its position in shade and associated heavily with other trees.

Liriodendron tulipifera 'Variegata' Satisfactory.

Schisandra sp. This vine has recently been cut back and reinstalled on a climbing frame after the tree it was on collapsed. It is making strong growth and is a satisfactory example.

3.4 Discussion - field exercise

After completing the field exercise the results were considered and discussed. The most common problem found with the specimens examined was overcrowding, almost all examples had this problem. The overcrowding problem can be reduced in many cases by removing overhanging branches or nearby trees of less value. The form of many specimens could be improved by judicious branch removal.

Many problems can also be explained by the effects of poor siting. Age of the trees is also a factor contributing to poor ratings. However the effects of release can be seen in the amount of regrowth on some of the trees. It was concluded that the Cook's Corner site is quite unsatisfactory for *Magnolia*, wind being the critical factor.

Health

With regard to the health rating it was decided that a score of 3(6) was the critical level for action. A score of 3(6) needs action, a score of 2(4) needs urgent action. Scores of 4(8) and 5(10) were satisfactory. (Scores are expressed on a 1-5 scale, then in brackets the equivalent on a 1-10 scale).

This meant that *Magnolia cylindrica* and *Magnolia officinalis var. biloba* (2nd example) needed urgent action. In both cases this has already been carried out with these species having been replanted elsewhere. A health rating of 3 also was of concern, *M. campbellii* (Cook's Corner), *Michelia doltsopa*, *M. veitchii* 'Peter Veitch'.

Example of species

Once again 3(6) seems to be the critical level on the scale as an example of the species, anything below this level is not acceptable as an example of the species. Of the examples viewed *Michelia doltsopa* (Barn), *Magnolia* Peter Veitch, *Magnolia sprengeri var. diva*, *Magnolia officinalis var. biloba* (Rock Point Pond), *Magnolia campbellii* (Cook's Corner), *Magnolia cylindrica* were not considered good examples of the species. Levels 4(8) and 5(10) are acceptable.

The fact that the trees have come this far under difficult conditions is a good test of the trees. *Magnolia* have tremendous powers of recovery. Opinion varied on the number of trees viewed that were in fact good examples. The range was between 30-60% good examples, down to only 6 trees.

Recommendation: That with respect to the *Magnolia* family trees examined in the field exercise the actions as described in Table 3.13 be undertaken.

3.5 Development plan for the *Magnolia* group at Eastwoodhill

Many aspects relating to the *Magnolia* group at Eastwoodhill were discussed. Given the aim of this exercise the discussion will be reported as a development plan.

Recent acquisitions

The following have recently been acquired and therefore did not appear on the current list.

Magnolia brooklynensis 'Woodsman'

Magnolia 'Caerhays Belle'

Magnolia denudata 'Forrests Pink'

Magnolia dawsoniana 'Chyverton Red'

Magnolia grandiflora 'Little Gem'

Magnolia 'Norman Gould'

Magnolia sargentiana

Magnolia sprengeri var. diva 'Diva'

The current collection

The policy for the current collection should follow these guidelines:

- 'old' cultivars should be kept for reference purposes.
- the *M. soulangiana* group particularly should be kept for reference.
- types originally imported by Cook should be retained.
- those special to Eastwoodhill should have more than one example. Namely *Magnolia dawsoniana*, *Magnolia sprengeri* var. *diva*, *M.sargentiana* var. *robusta*, *Magnolia kobus* var. *borealis*, *Magnolia campbellii* (Cabin), *Manglietia*.

Criteria for acquisition

The policy on acquisition should follow these guidelines:

- concentrate on species. Try everything. If it will not grow then keep a herbarium specimen.
- there is an obligation to hold unusual types for reference and educational purposes.

Attention should be paid to good form, climatic range, climatic adaptability, site selection.

Acquisition with respect to number

Acquisition with respect to number should follow these guidelines:

- as long as there is space and suitable sites then 2-3 of each important species should be held.
- plants imported by Cook should be represented by three examples.
- plants commercially available do not need multiple representation.
- species special to Eastwoodhill should be represented by more than one example, (*M.dawsoniana*, *M.sprengeri* var. *diva*, *M.sargentiana* var. *robusta*, *M.kobus* var. *borealis*, *M.campbellii* (Cabin), *Manglietia*).

Acquisition with respect to actual species

Of the plants highly ranked the following should be obtained:

- *Magnolia nitida*. Available, obtain from O.Blaumhardt.
- *Manglietia hookeri*. Propagate locally from Dot Gray.
- *Manglietia insignis*. Availability unknown.
- *Magnolia officinalis*. Appears to be unobtainable.
- *Magnolia coco*. Is at Eastwoodhill and is too tender, relocate elsewhere.
- *Magnolia hypoleuca*. Available, obtain.
- *Magnolia virginiana* 'Autumn Delight'. Available, obtain.

Others to obtain:

- *Magnolia globosa*. Already acquired ex Pukeiti.
- *Magnolia sargentiana*. Already obtained ex ?.
- *Magnolia rostrata*. Not really available and very difficult to propagate.
- *Magnolia watsonii*. Very good scent. Obtain.
- *Magnolia wilsonii*. Obtain.
- *Magnolia ashei*. A good species but the flowers are small. Obtain.
- *Magnolia campbellii* f. *alba*. Obtain and put in a better position.
- *Magnolia* 'Strybing White' for Orchard Hill. Obtain.
- *Magnolia* 'Darjeeling' Obtain.

Expansion of the group

The Magnolia group represents a significant opportunity for expansion under the general aims of the collection as stated at the first workshop, namely the theme of warm temperate flora. Given that the percentage coverage of the family at Eastwoodhill ranges from approximately 3-50% of the genera in question, there is considerable scope for expansion. Selection of this group for expansion is supported by the consistently high assessment scores achieved by this group of plants.

Such an expansion will require an investigation into suitable material and the acquisition of the same. The following matters were identified as requiring investigation in this regard:

- The genera *Manglietia*, *Paramichelia*, and *Talauma*. There are many species here, some of which may be suitable for Eastwoodhill.
- species that are climatically suitable.
- further information on what is available in New Zealand. *Manglietia* and *Talauma*. (Contact O. Blaumhardt.)
- further information on *Michelia* and *Paramichelia* (contact Ron Gordon).
- inclusion of *Illicium* in the group.
- investigate the Chinese connection, liaise with Ron Gordon and Pukeiti Rhododendron Trust.

Recommendation: That the development plan for the genus *Magnolia* at Eastwoodhill, as outlined in section 3.5 of this document, be adopted.

SECTION FOUR: Management of the collection - Development plan for Pear Park

4.1 Aim

The aim of this exercise was to formulate a strategy for managing the park over time, a plan for propagation, planting and removal. Given the aim of this exercise the results shall be presented as a development plan.

4.2 Description

Pear Park is in the lower portion of the Arboretum, in the south east corner. The site is basically flat with a gentle slope towards The Ride. Pear Park is important because of its position in the Arboretum as a whole, i.e. it is close to the carpark, and because it has sheltered open spaces. The park has difficult soil which is shallow and poorly drained. There are drains through the park across Linden Green although recent winters have not been wet enough for these to run.

Planting in Pear Park began in 1920 with pin oaks, elms, and english ash. In 1949 the Linden Green circular track was installed and the main body of the park planted. In the 1950s trees were lined out in what is now Nursery Wood. In the 1960s eucalyptus were removed. *Carya ovata*, *Taiwania cryptomerioides*, and *Acer saccharum* 'Arnold form' were planted in the late 1960s.

The park now contains plantings of many deciduous trees; oaks, maples, crataegus, tilia, ash and platanus are well represented. There is a significant collection of junipers in the lower part of the park. The pin oaks planted in 1920 are some of the biggest trees in the park at about 30m tall.

Plants currently in the park are illustrated by the park plans, sheets 6-9 of the arboretum set. {The reader of this thesis should refer to plans 2 and 3 in thesis Appendix Two.} Plants that have been in the park but which are no longer present are outlined in Appendix Table 4.3.

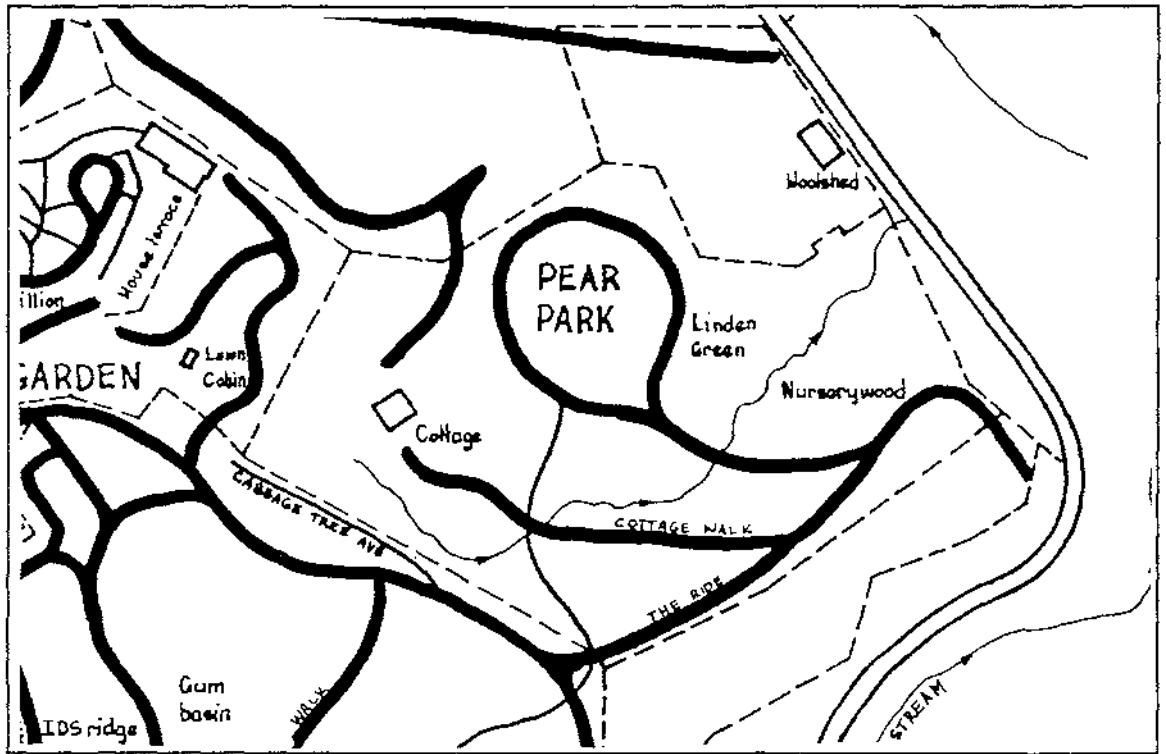
Many of the plantings in Pear Park are crowded and many are reaching the end of their useful life. At the same time other trees are in excellent condition and will continue to be so for many years. Given these problems it is necessary to formulate a management strategy to address these issues.

4.3 Theme

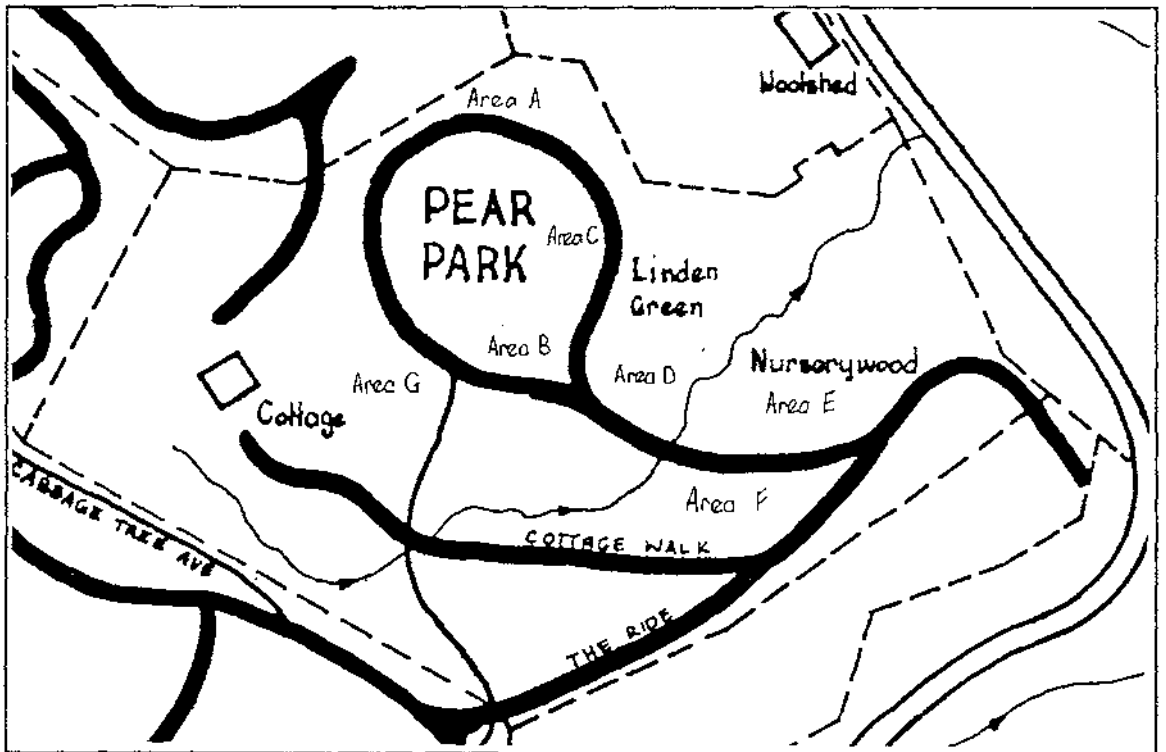
At the first workshop it was resolved that 'The theme of the Arboretum was that of temperate and warm temperate flora, focussing on the key genera plant groups that have already been identified.' (Key genera as outlined in first workshop report.). At the same workshop it was resolved that the role of the arboretum is 'To maintain and further the collection of Douglas Cook.'

With respect to Pear Park it was agreed that the park should continue to reflect the views and objectives of Douglas Cook. The management plan should maintain and conserve these objectives. The following were identified as the themes of Pear Park:

1. The general absence of conifers. Bill Sykes reports that it is his understanding that Douglas Cook purposely excluded conifers.
2. There is a strong rose family influence. This is demonstrated by the *Malus*, *Crataegus*, *Crataegus* hybrids, *Prunus*. Examination of the previous plants list supports this point.



Segment of the arboretum plan showing the location of Pear Park.



Plan of Pear Park showing location of areas A-G referred to in the results. Plans are found in thesis Appendix Two.

3. There is a distinct deciduous character to Pear Park. There are some evergreens, (oaks and camellias), but the majority is deciduous. Ron Gordon reports that Cook stressed to him that this park would be deciduous and that it would be a feeding ground for flora and fauna, hence the large number of fruit plants.
4. Fruiting plants. This theme is supported by the evidence in point three.
5. Following of a species composition such as outlined by Appendix Tables 4.1,4.2.
6. The central open space is a key feature.

4.4 Park evaluation - method

To evaluate the park the following procedure was followed:

1. Consideration of the current composition of the park and other background information.
2. Definition of permanent and transitory elements
3. Field exercise

Background information

The distribution of arboretum key genera in Pear Park was examined (Appendix Table 4.1). It was noted that of the key genera Pear Park contains a significant portion of *Aesculus*, *Fagus*, *Juniperus*, *Malus*, *Quercus*, and *Tilia*.

The distribution of other genera in Pear Park was examined. Significant groups in Pear Park are *Celtis*, *Emmenopterys*, *Gleditsia*, *Platanus*, *Platycarya*, *Buddleia*, *Stuartia*, *Viburnum* (Appendix Table 4.2). Some of these are single genus high scoring plants, for example *Emmenopterys*; others are significant representation of smaller genera in the arboretum, for example, 42% of the *Celtis* are in Pear Park, including sole examples.

Assessment of the plants in Pear Park for botanical and aesthetic value can be found in Appendix Tables 4.6 and 4.7.

Permanent and transitory elements

Permanent elements are described as those that, when in an acceptable situation, are sufficiently long lived as to be considered permanent. Transitory elements are described as those that are not long lived and will require regular replacement in relation to the permanent elements.

The definition of elements in this way allows the manager to distinguish those that will need regular attention and replacement from those that will not need such replacement. It is desirable that the framework of the park be formed from permanent elements, thus the framework of the park is always retained and is not disturbed by the need to recycle short lived material. The definition of the genera in this way does not necessarily mean that any will be removed from the park, it simply means that the transitional (shorter lived) groups will need more intensive management to keep them at their best at all times.

The permanent elements (longer lived) of Pear Park have been agreed to be:

- *Acer*, *Aesculus*, *Camellia*, *Celtis*, *Cryptomeria*.
- *Fraxinus*. This genus, when in an acceptable situation, would be a permanent element. However at present these trees are not thrifty due to being grafted onto *F.excelsior* stock. If grafted onto more appropriate stock then there will be no problem with the length of life of this group.

● *Juniperus*. This genus, when growing in an acceptable situation, would be a permanent element as it is long lived. However the current site is quite unsuitable as it is too wet and shady. This fact, plus the deciduous theme of Pear Park lead to the conclusion that this grouping should be relocated.

● *Platanus, Quercus, Sequoia, Tilia, Ulmus*.

Transitional (shorter lived) species of Pear Park are:

● *Betula, Buddleia, Euonymus, Crataegus* and hybrids, *Cotoneaster, Malus, Philadelphus, Prunus*.

Field exercise

A field exercise was conducted that made detailed examination of the trees within the park. This was done in two stages. In the first stage the Linden Green area was examined and trees rated for health, growth phase, and as an example of the species. (Rating scales can be found in Appendix Three). Analysis of these indicators will form a basis for decision making on individual trees. In the second stage the rest of the park was examined and a series of recommendations made.

4.5 Park evaluation -results

Results for the examination of Pear Park can be seen in Table 4.5 which shows the ratings for the Linden Green section, by Table 4.8, and by plan pages A-G, which should be referred to concurrently. {In the original version of this report plans A-G followed here. Plans of Pear Park can be found in thesis Appendix Two. The location of areas A-G is shown on page 651.}

For the field ratings it was agreed that for health and example of species a score of 3,2, or 1, required some action. Levels 4 and 5 were satisfactory. For the growth phase rating a score of 1 required some action. Field ratings have been summed and the action category for each plant indicated. Field scores are converted to a mark out of 10 for analysis. Using the levels just indicated the total scores were treated as follows:

- (i) total score less than 14 - urgent action required.
- (ii) total score 14 to 18 - action required in 0-5 years.
- (iii) total score 19 to 23 - okay, no immediate action required .
- (iv) total score 24 or more - tree excellent, no action required.

Table 4.5: Results sheet Pear Park exercise

Plant	Ref. number	Preliminary assessment		Field assessment			Field status and action category
		Botanical score	Aesthetic score	Health	Example of species	Growth phase	
<i>Fraxinus pensylvanica</i> 'Variegata'	PP185	6.0	7.0	4.0	6.0	4.0	14.0 action
<i>Fraxinus angustifolia ssp. oxycarpa</i>	PP184	-	-	8.0	8.0	4.0	20.0 okay
<i>Fraxinus holotricha</i>	PP183	7.6	7.0	8.0	7.2	4.0	19.2 okay
<i>Fraxinus dipetala</i>	PP182	7.2	7.4	8.0	10.0	4.0	22.0 okay
<i>Fraxinus spaethiana</i>	PP180	8.0	7.4	9.5	9.3	5.0	23.8 okay
<i>Fraxinus spaethiana</i>	PP159	8.0	7.4	9.5	8.7	5.0	23.2 okay

...continued

Plant	Ref. number	Preliminary assessment		Field assessment			Field status and action category
		Botanical score	Aesthetic score	Health	Example of species	Growth phase	
<i>Fraxinus pensylvanica</i> 'Aucubifolia'	PP157	6.0	6.6	9.0	8.0	4.0	21.0 okay
<i>Fraxinus pensylvanica</i> . 'Aucubifolia'	PP158	6.0	6.6	9.0	4.0	3.0	16.0 action
<i>Fraxinus mariesii</i>	PP178	8.2	8.2	9.5	10.0	5.0	24.5 exc.
<i>Fraxinus chinensis</i> 'Acuminata'	PP179	8.0	7.0	7.5	8.0	3.5	19.0 okay
<i>Fraxinus chinensis</i>	PP177	7.6	7.0	4.0	6.0	2.0	12.0 urgent
<i>Fraxinus chinensis</i> 'Rhynchophylla'	PP171	8.0	7.2	3.0	2.7	2.0	7.7 urgent
<i>Platycarya strobilacea</i>	PP172	8.2	8.6	10.0	10.0	5.5	25.5 ex.
<i>Celtis occidentalis</i> (upper)	PP173	6.5	5.2	7.5	7.2	4.0	18.7 okay
<i>Celtis australis</i> (middle)	PP175	6.4	5.6	8.0	8.6	4.0	20.6 okay
<i>Celtis laevigata</i> (lower)	PP175	6.5	6.0	8.5	8.0	5.0	21.5 okay
<i>Fraxinus excelsior</i> 'Monophylla'	PP174	6.2	6.2	8.5	8.0	3.5	20.0 okay
<i>Fraxinus excelsior</i> 'Monophylla'	PP176	6.2	6.2	10.0	10.0	5.5	25.5 ex.
<i>Fraxinus angustif. var. lentiscifolia</i>	PP152	6.6	6.4	10.0	8.0	4.0	22.0 okay
<i>Crataegus jaackii</i>	PP156	6.6	7.0	8.0	8.0	4.0	20.0 okay
<i>Crataegus jonesiae</i>	PP153	6.4	7.2	8.5	2.0	2.8	13.3 urgent
<i>Crataegus coccinoides</i>	PP155	6.0	7.0	5.5	6.6	3.5	15.6 action
<i>Quercus glauca</i>	PP154	7.8	6.4	9.5	7.0	5.0	21.5 okay
<i>Malus eleyi</i>	PP162,	5.2	7.0	7.0	4.0	2.5	13.5 urgent
<i>Quercus alpestris (faginea)</i>	PP160	7.2	5.2	6.0	8.0	4.0	18.0 action
<i>Fraxinus sp 161</i>	PP161	-	-	7.5	6.0	2.5	16.0 action
<i>Betula jacquemontii</i>	PP139	8.4	9.0	10.0	10.0	5.0	25.0 ex.
<i>Carya ovata</i>	PP140	7.6	7.8	10.0	10.0	6.0	26.0 ex.
<i>Crataegus sp</i>	PP164	-	-	6.0	6.0	4.0	16.0 action
<i>Crat. crus-galli</i> 'Pyracanthifolia'	PP165	6.6	7.2	9.5	9.2	4.0	22.7 okay
<i>Crataegus monogyna</i> 'Praecox'	PP167	6.0	6.0	6.0	3.2	2.0	11.2 urgent
<i>Crataegus persistens</i>	PP168	6.5	6.4	8.5	6.0	4.0	18.5 okay
<i>Crataegus wilsoni</i>	PP166	6.0	6.4	7.0	2.0	3.0	12.0 urgent
<i>Quercus robur</i> 'Fenessii'	PP169	6.2	6.4	9.5	9.2	5.5	24.2 ex.
<i>Quercus mongolica</i>	PP170	7.0	7.0	9.5	10.0	5.0	24.5 ex.
<i>Castanea sativa</i>		5.8	6.8	6.0	2.0	2.0	10.0 urgent
<i>Quercus robur</i>	PP131	-	-	10.0	8.0	5.5	23.5 okay
<i>Tilia platyphylla</i> 'Laciniata'	PP132	7.0	7.8	8.0	6.0	4.0	18.0 action
<i>Tilia neglecta</i>	PP134	7.2	7.8	8.5	8.0	4.0	20.5 okay
<i>Tilia oliveri</i>	PP133	7.2	8.0	9.0	8.0	5.5	22.5 okay
<i>Quercus robur</i> 'Filicifolia'	PP49	6.8	7.4	8.5	10.0	5.5	24.0 ex.

...continued

Plant	Ref. number	Preliminary assessment		Field assessment			Field status and action category
		Botanical score	Aesthetic score	Health	Example of species	Growth phase	
<i>Quercus kelloggii</i>	PP50	7.6	7.0	9.0	8.0	5.5	22.5 okay
<i>Quercus garryana</i>	PP52	7.6	6.6	6.0	4.0	4.5	14.5 action
<i>Quercus trojana</i>	PP265	7.4	7.2	9.5	10.0	4.5	24.0 ex.
<i>Malus florentina</i>	PP135	6.8	8.2	8.0	10.0	4.0	22.0 okay
<i>Tilia mongolica</i>	PP136	7.6	8.4	9.0	8.0	4.5	21.5 okay
<i>Taiwania cryptomerioides</i>	PP137	8.4	7.6	9.0	8.0	7.5	24.5 ex.
<i>Acer saccharum</i> Arnold Arb Form	PP138	7.2	7.6	10.0	10.0	6.0	26.0 ex.
<i>Tilia moltkei</i>	PP141	-	-	10.0	10.0	4.5	24.5 ex.
<i>Aesculus glabra</i>	PP117	-	-	8.5	2.0	4.5	15.0 action
<i>Aesculus hipp.</i> 'Pyramidalis'	PP116	7.0	7.2	9.0	10.0	4.5	23.5 okay
<i>Aesculus plantierensis</i>	PP118	7.0	8.2	9.5	8.0	4.5	22.0 okay
<i>Crataegospilus dardarii</i>	PP143	9.0	7.0	7.0	2.0	4.0	13.0 urgent
<i>Crataemespilus grandiflora</i>	PP144	9.0	7.0	9.5	2.0	4.5	16.0 action
<i>Crataegus x grigonensis</i>	PP145	7.0	7.0	5.5	2.0	3.0	10.5 urgent
<i>Crataegus mollis</i>	PP146	6.8	7.8	8.0	4.0	4.0	16.0 action
<i>Malus hupehensis</i>	PP149	6.0	7.0	8.0	6.0	4.5	18.5 okay
<i>Quercus x ludoviciana</i>	PP264	9.0	9.0	9.5	10.0	4.5	24.0 ex.
<i>Quercus variabilis</i> (near ashes)	PP151	8.0	8.0	9.5	10.0	4.5	24.0 ex.
<i>Quercus variabilis</i>	151A	8.0	8.0	9.0	6.0	4.0	19.0 okay
<i>Quercus marilandica</i>	PP148	8.0	9.0	10.0	8.0	4.5	22.5 okay
<i>Fraxinus udhei</i>	PP263	7.8	6.4	10.0	8.0	4.0	22.0 okay
<i>Acer opalus</i>	PP129	8.0	6.0	9.0	4.0	3.5	16.5 action
<i>Cunninghamia konishii</i> (upper)	PP130	8.0	7.0	8.0	4.0	4.0	16.0 action
<i>Acer pseudoplatanus</i> 'Worleci'	PP127	6.0	6.6	8.5	4.0	3.5	16.0 action
<i>Acer platanoides</i> 'Reitenbachii'	PP126	6.0	6.0	4.0	2.0	3.0	9.0 urgent
<i>Acer velutinum</i> var. <i>vanvolxemi</i>	PP123	8.0	7.0	4.0	2.6	2.0	8.6 urgent
<i>Quercus robur</i> 'Hodgekinsoni'	PP121	7.0	7.0	9.2	8.0	4.5	21.7 okay
<i>Cunninghamia lanceolata</i> (lower)	PP124	7.0	7.0	4.5	2.0	2.0	8.5 urgent
<i>Platanus acerifolia</i> 'Cantabrigensis'	PP125	8.0	7.0	7.2	4.0	4.0	15.2 action
<i>Platanus orientalis</i> var. <i>cuneata</i>	PP119	8.0	7.0	9.0	7.0	4.0	20.0 okay
<i>Platanus orientalis</i> var. <i>insularis</i>	PP	7.0	7.0	10.0	7.2	4.5	21.7 okay
<i>Quercus acutissima</i> ssp. <i>cheni</i>	PP142	8.0	7.0	9.0	6.0	4.5	19.5 okay
<i>Platanus orientalis</i>	PP128	-	-	10.0	8.0	4.5	22.5 okay

Table 4.8: Results Pear Park exercise - Recommendations

If a plant is not mentioned specifically in the recommendations then no immediate action is required.

The Ashes see area A.

Recommendations - urgent.

1. *Fraxinus chinensis* forms should be propagated urgently (PP171, PP179).
2. *Malus eleyi* needs urgent propagation and replanting (PP162,3).

Recommendations 0-5 years.

1. *Fraxinus pensylvanica* 'Variegata' has been repropagated and should be removed once a new plant is established (PP185).
2. *Fraxinus holotricha*, propagate as it is in declining growth phase (PP183).
3. *Fraxinus chinensis* has already been grafted onto its own seedlings. Once a new plant is established the present plant should be removed (PP177).
4. *Fraxinus pensylvanica* 'Aucubifolia', (PP158) remove as it is in poor health and is declining growth phase. The adjacent one (PP157) is a better representative.
5. *Crataegus coccinoides* has been repropagated and should be replanted as soon as good stock is available (PP155).
6. *Crataegus jackii* and *C.jonesiae* have been repropagated and will be removed once new plants are established (PP156, PP153). The soil is very poor on this site so replanting should be elsewhere.
7. *Malus* could be replanted where trees from point 4 are removed, given selection of suitable root stock.
8. The dying side limb on *Fraxinus* (PP161) should be removed as it has been ringbarked by Puriri moth.
9. *Crataegus wilsoni* (PP166) and *C.monogyna* 'Praecox' (PP167) are very crowded and should be relocated to better sites. Both have been propagated.
10. *Crataegus crus-galli* 'Pyracanthifolia' (PP165), *C.persistens* (PP168), and *Crataegus* PP164, can remain if tidied up.

Recommendations 5-10 years.

1. *Betula jacquemontii* hybrid (PP139) should be left until it starts to impinge on the *Carya* (PP140), the birch should then be removed.

Comments

1. The site is quite suitable for ash, *F.excelisior* 'Monophylla' and *F. udhei* are particularly good. The collection as a whole needs more room, but others should be established first. When grafted onto the correct stock this group of trees will improve in health.
2. *Crataegus*. These as a group are not healthy. The group should be identified from an accurate source such as the Arnold Arboretum, Boston, as many of the Hillier names are suspect. All *Crataegus* have been repropagated by P Pollock. *Crataegus* need resiting into sunny positions.continued

3. *Quercus glauca* is regrowing quite adequately after being released from a crowding ash branch.
4. *Malus* have been propagated by Ivan Mitchell.

Lime Corner see area B.

Recommendations - 0-5 years.

1. The *Quercus robur* (PP131) should be removed to allow the limes more room.
2. *Tilia platyphylla* 'Laciniata' (PP132) should be propagated.
3. *Quercus garryana* (PP52) is in poor health, some action is needed.

Tilia mongolica to Quercus variabilis see area C.

Recommendations - urgent.

1. *Pyrus (Sorbus) alnifolia* (PP120), urgent propagation.
2. *Quercus acutissima ssp. chenii* (PP142), urgent propagation.
3. *Crataegus x grigoniensis* (PP145), urgent propagate and relocation.

Recommendations 0-5 years.

1. *Aesculus glabra* (PP117) should be repropagated and relocated.
2. *Crataegus* hybrids (PP143, PP144), have been propagated, relocate further out once new stock is available.
3. Repropagated *Crataegus* should be resited on the opposite side of the Green where it is sunny, or along the sunny side of the lower part of the Green.
4. Actions as per last workshop report should be continued, i.e.,
Acer opalus (PP129), propagate and remove.
Cunninghamia konishii (PP130), propagate and remove, bring in new stock.
Acer pseudoplatanus 'Worleei' (PP127), remove.
Acer platanoides 'Reitenbachii' (PP126), check ID and propagate if necessary, obtain from new source and replant.
Acer velutinum var. vanvolxemi (PP123), remove.
Cunninghamia lanceolata (PP 124), remove.
Platanus acerifolia 'Cantabrigensis' (PP125), propagate.

Lower Linden Green across to Gleditsia japonica see area D.

Recommendations 0-5 years.

1. Selectively remove seedling ashes in lower corner, (PP245,246,247,248,249,298) then reassess next year. This will allow a view into the variegated elm foliage behind.
2. The smooth trunk evergreen oak should be removed. The knobbly trunked one should be retained and identified (PP 250 and adjacent tree).
3. Remove *Malus* 'Jack Humm' (PP111) to allow the development of a path through here for access to the lower park. This plant has been repropagated.continued

4. Relocate *Malus sublobata* (PP69) further out to give more room. This plant has been repropagated.
5. A new plant of *Tsuga canadensis* (PP68) should be obtained and planted elsewhere.
6. Replacement *Malus* should be planted in this area to keep the character.
7. Plant another *Malus hupehensis* in the gap indicated to complete the enclosure. ??????
8. Use the area below the liquidambers to replant *Malus* and/or *Crataegus*.
9. *Crataegus* stock (PP48, labelled *submollis*) in front of oaks to be removed to allow view into oaks.

Comments

The view into the wall of greenery behind *Malus baccata* var. *microcarpa* is very good and should be enhanced. The *Malus* along this stretch are not in good health and need to be moved further out. Chris Ryan (Toptrees, Clive), is repropagating the apples from around nursery wood. It was felt to be most important to retain the feeling of space, so any planting should not encroach on the Green too much.

Nursery Wood and the junipers see area E.

Recommendations - urgent.

1. Repropagate all Junipers and relocate in a warmer drier site. Eventually remove existing trees as they decline. Leave in the meantime while they are still healthy.

Recommendations 0-5 years.

1. Side prune the *Castanea sativa* (PP75).
2. Open up the Nursery Wood area. but at the same time conserve the tunnel effect, remove dead and dying material, remove quince. *Parrotia persica* (PP94) at the end should be the focal point.
3. Relocate apples, PP243 and PP244 elsewhere, this site is too overcrowded for them anyway.
4. Remove *Prunus cerasifera* 'Atropurpurea' (PP95) and *Fraxinus excelsior* (PP97) in lower corner to give more room to higher value trees.
5. Remove second leader from *Tilia petiolaris* (PP105).

Comments

The idea of retaining the nursery lines is fine, but natural attrition means that plants are dying out and many of the smaller trees are unthrifty. It is possible to conserve the tunnel effect while at the same time removing some material and improving the look of the area.

Cottage Course see area F.

Recommendations - urgent.

1. *Fraxinus xanthoxyloides* (PP23), urgent propagate.
2. *Pyrus* (*Sorbus*) *folgneri* (PP21), urgent propagate.

Recommendations 0-5 years.

1. Remove poor examples of *Fraxinus excelsior* along the Ride.continued

2. *Crataegus* under evergreen oaks to be removed as soon as new plants are established (PP44, PP45, PP241).

Below the cottage see area G.

Recommendations - urgent.

1. *Acer diabolicum f. purpurescens* (PP189), urgent propagation.
2. *Osmanthus suavis* (PP188), urgent propagation.

Recommendations 0-5 years.

1. Relocate *Chionanthus* (PP190) into the sun.
2. Propagate *Buddleia* and *Euonymus* for replanting as the current specimens decline.
3. Relocate trees from under lower pin oak,
 - Acer laetum* 'Aureum' (PP201), *Acer laetum* 'Purpureum', (PP200).
 - Euonymus salicifolia grandiflora*, (PP198), *Euonymus* PP199, PP199A.

General

Recommendations 10-20 years.

1. All ash should be propagated and prepared for replanting to replace existing trees as they decline.

Recommendations 20-30 years.

1. Repropagate all *Crataegus* and *Malus* to start next replacement cycle.

4.6 Discussion

The results as shown above outline the status of the trees examined and the level of action required. For those needing action the actual outcome will be tempered by the ascribed botanical and aesthetic importance, and the availability of that species.

Recommendations:

That the theme of Pear Park, as outlined in section 4.3 of this document, be ratified.

That the management strategy as recommended in section 4.5 of this document be adopted.

SECTION FIVE: Curator's Forum

5.1 Aim

In this section an item for discussion was introduced. This relates to an area of the Arboretum that poses a current problem for the curator and which requires some group input. The item for discussion this year is the area at the top of Douglas Park known as Basinhead. For plan and plant list refer to page 661 and Table 5.1.

5.2 Background

This portion of Douglas Park is on the main thoroughfare through Douglas Park when on the Douglas Cook Walk. Physically the area is a small basin with a flat centre surrounded by small ridges, open at the south western end. The area contains mostly deciduous trees with some evergreens. A collection of lilacs was a notable feature of the area. The plantings are set around the perimeter of what was, prior to 1985, a small pond. In 1985 a severe rainstorm set in motion a deep slip on the farmland above the park which covered the Basinhead area in 1-2m of clay, the pond was completely filled in and several trees surrounded by slip debris. A number of trees died and others were buried as a result of the slip. This, and the loss of the pond have reduced the visual appeal of the park and some improvement is required.

Important features of this area were identified by the group.

1. An important physical feature was the ridge on the western side that separates Basinhead from the adjacent area. This is an open slope with scattered *Eucalyptus leucoxylon* 'Rosea'. This piece of ground was considered very visually appealing and should be enhanced.
2. A example of *Pinus durangensis* at the lower end of Basinhead is an important specimen tree. Equally the specimen of *Populus deltoides* 'Carolin' at the upper end of Basinhead is an important example.
3. Other plantings of note include a fine white trunked birch, (species unknown), several blue atlas cedar, *Acer macrophyllum*, and a bunya pine which is recovering from top loss. A series of poplars, (identity not confirmed), run along the fence line at the back of Basinhead.
4. A number of more transitory elements are included in the planting. There are some *Prunus*, (plums peaches and cherries), and a selection of lilacs.

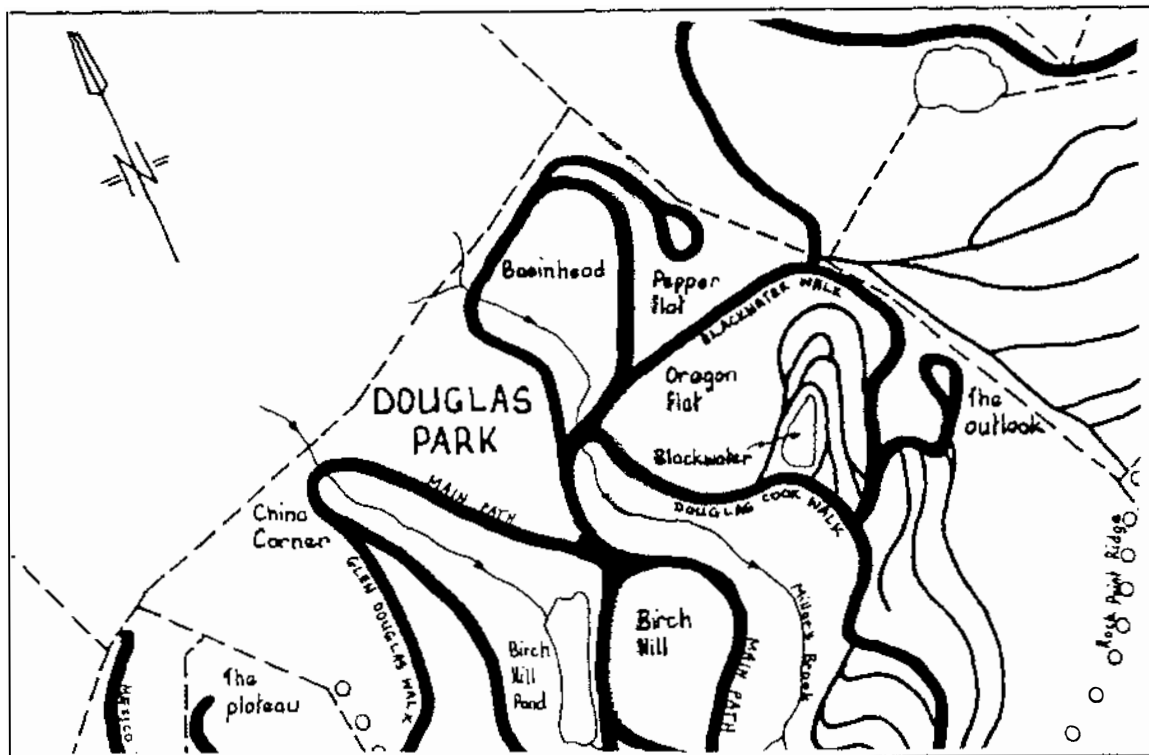
5.3 Discussion

With respect to the sloping ridge with the *Eucalyptus* the following ideas were put forward:

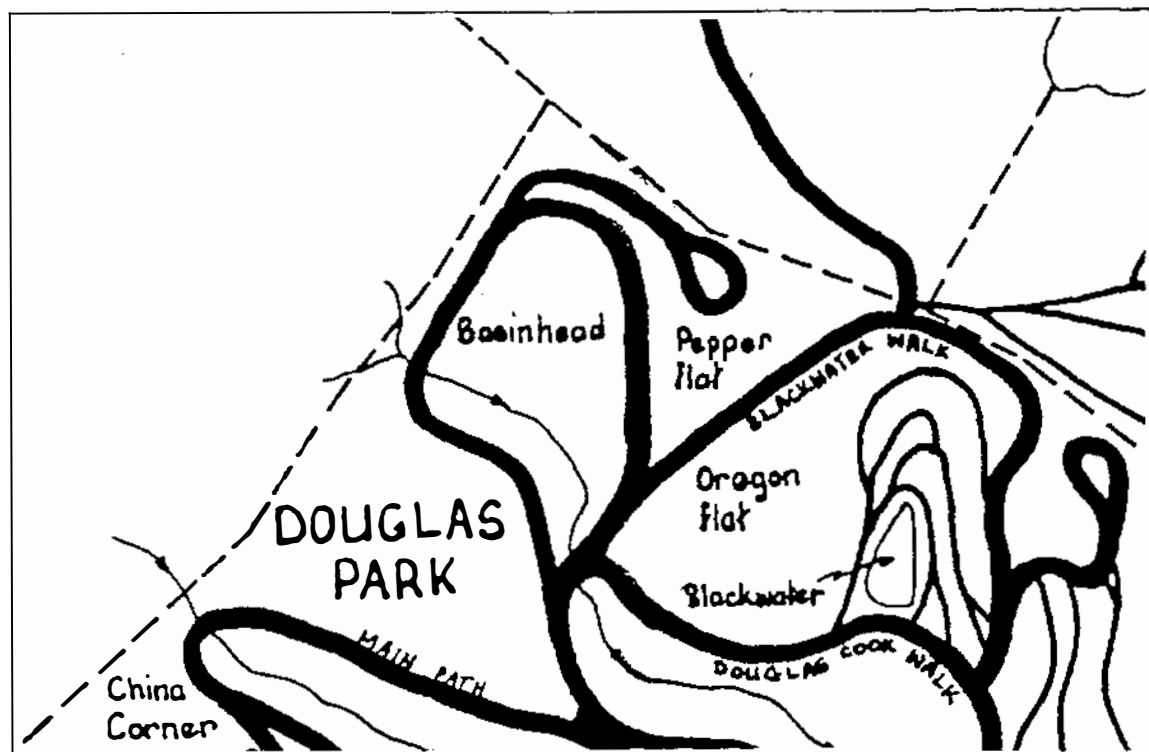
- leave the area alone but remove the poorer trees.
- underplant with shrubby material.
- install a low planting across the lower slope, and remove the poorer trees.
- enhance the ridge top by selectively pruning up the douglas fir, thereby emphasising the smooth ridge top.

With respect to the basin itself the following ideas were put forward:

- that the area is important as an open space, of which there are few in this part of the arboretum.
- the margins of the basin appear suitable for mollis azaleas, a planting of azalea about the margin of the basin would enhance the spring display.
- the central grassy area should be smoothed off.



Segment of the arboretum plan showing the location of Basinhead.



Basinhead. For detail see the plan in thesis Appendix Two.

With respect to the view through the basin to the farmland beyond the following ideas were put forward:

- that the fence line across the rear of Basinhead should be planted with small material in order to hide the fence, but allow for the view into the hillside beyond.

With respect to plant material the following ideas were put forward:

- that *Populus deltoides* 'Carolin' be pruned of broken branches, but otherwise be left as is.
- that the various flowering plum cultivars be removed, along with the dying conifers, to give a better view of the poplar.
- that the planting along the Pepper Flat side of the basin be rearranged in order to take better advantage of microclimate. At present many smaller plants are heavily overshadowed by larger plants along the side of the track, relocating the smaller plants into the edge of the basin (rather than along the track) would ensure better growth and display.
- that the yellow plum be removed.
- that the cherries along the track be repropagated.

Table 5.1 List of plants at Basinhead

<i>Abies pinsapo</i>	Fir
<i>Acer buergerianum</i>	Trident maple
<i>Acer macrophyllum</i>	Big leaf maple
<i>Acer negundo</i>	Boxelder
<i>Acer palmatum</i>	Japanese maple
<i>Araucaria bidwilli</i>	Bunya pine
<i>Betula platyphylla</i> form	Birch
<i>Betula</i> sp, white trunk	Birch
<i>Buddleia alternifolia</i>	Buddleia
<i>Cassia tomentosa</i>	Cassia
<i>Cedrus atlantica</i> f. <i>glauca</i>	Blue atlas cedar
<i>Chamaecyparis pisifera</i> , 2 forms	
<i>Chamaecyparis squarrosa</i>	
<i>Cornus florida</i> f. <i>rubra</i>	Pink flowering dogwood
<i>Eucalyptus leucoxylon</i> 'Rosea'	Flowering gum
<i>Forsythia</i> 'Arnold Giant'	Forsythia
<i>Forsythia</i> 'Beatrix Farrand'	Forsythia
<i>Forsythia</i> 'Linwood'	Forsythia
<i>Fraxinus</i> sp.	Ash
<i>Grevillea robusta</i>	Silky oak
<i>Magnolia kobus</i>	Magnolia
<i>Magnolia loebneri</i>	Magnolia
<i>Populus deltoides</i> 'Carolin'	Poplar
<i>Populus</i> sp, 2	Poplar
<i>Prunus x bliereana</i>	Purple leaf plum

<i>Prunus cerasifera</i>	Purple leaf plum
<i>Prunus cerasifera</i> var. <i>diversifolia</i>	Yellow plum
<i>Prunus mume</i> 'Dawn'	Flowering apricot
<i>Prunus mume</i> 'Peggy Clark'	Flowering apricot
<i>Prunus mume</i> 'The Geisha'	Flowering apricot
<i>Prunus persica</i> 'Helen Borchert'	Flowering peach
<i>Prunus serrulata</i> 'Ashi Botan'	Japanese cherry
<i>Prunus serrulata</i> 'Kanzan'	Japanese cherry
<i>Prunus serrulata</i> 'Kofugen'	Japanese cherry
<i>Prunus serrulata</i> 'Yedo Zakura'	Japanese cherry
<i>Prunus serrulata</i> 'Yukon'	Japanese cherry
<i>Pyrus pashia</i>	Ornamental pear
<i>Stachyurus praecox</i>	Early spiketail
<i>Syringa vulgaris</i> 'Buffon'	Lilac
'Edith Cavell'	Lilac
'Mme Lemoine'	Lilac
'Svr de Alice Harding'	Lilac
<i>Zelkova cretica</i>	Zelkova

5.4 Conclusion

A number of useful ideas were put forward in the discussion of the Basinhead area. A botanical assessment of the plantings has not been done so no figures on the importance of the plant material are available for use in the discussion. The ideas outlined above should be used in conjunction with a plant material assessment as a basis for decision making.

Recommendations:

That the ideas outlined in discussion section 5.3 be considered in the development of the Basinhead area.

That an assessment of the plant material in Basinhead be conducted, and the results thereof be used in conjunction with discussion 5.3 to resolve development issues for the Basinhead area.

{In the original version of this report a plan of Basinhead appeared here. The reader of this thesis will find that plan in thesis Appendix Two.}

SECTION SIX: Conclusions

After some discussion the following conclusions were reached:

1. A comments box should be included on the field exercise forms.
2. The next workshop should be held early 1991.
3. The next workshop should include:
 - a section on new issues.
 - key genus examination, *Acer*.
 - a park management exercise, perhaps Corner Park.
 - an examination of a portion of the new area.

Recommendations:

That the third workshop be held in early 1991.

That the third workshop address topics such as outlined in section six of this document.

APPENDIX: Programme for the second workshop

The Second Eastwoodhill Arboretum Workshop April 1990

Programme

Friday

8.30am	Welcome and Introduction
8.45-10.00	Section One: Issues
10.30-12.00	Section Two: Key genera study Section Three: Magnolia exercise, introduction
1.00-3.30	Section Three: Magnolia exercise, field exercise
4.00-5.00	Section Three: Magnolia exercise, discussion and conclusion

Saturday

8.30-10.00	Section Four: Pear Park exercise
10.30-12.00	Section Four: Pear Park, field exercise
1.00-3.00	Section Four: Pear Park exercise, discussion and conclusion
3.30-5.00	Section Five: Bush area exercise

Sunday

8.30-10.00	Curator's forum: two issues of current concern
10.30-12.00	Workshop conclusion, discussion of new issues and priorities

APPENDIX: Tables referred to in the text.

KEY GENERA (Section Two) - TABLES REFERRED TO IN THE TEXT

Table 2.1 Key Genera, Scores assigned at the first Workshop

<i>Genus</i>	Botanical score	Aesthetic score	Average score
<i>Abies</i>	8.50	8.00	8.25
<i>Acer</i>	9.25	9.12	9.19
<i>Aesculus</i>	8.33	8.80	8.55
<i>Alnus</i>	7.00	6.14	6.60
<i>Betula</i>	8.89	8.89	8.89
<i>Fagus</i>	8.44	8.00	8.22
<i>Ilex</i>	8.44	8.00	8.22
<i>Juniperus</i>	8.00	6.22	7.11
<i>Malus</i>	8.67	8.11	8.39
<i>Magnolia</i>	9.56	9.33	9.44
<i>Picea</i>	8.22	7.56	7.89
<i>Pinus</i>	9.10	7.67	8.39
<i>Prunus</i>	9.11	9.00	9.06
<i>Pyrus</i>	7.78	6.89	7.33
<i>Quercus</i>	9.33	8.89	9.11
<i>Tilia</i>	8.67	8.00	8.33

Notes

These are the key genera as identified at the first workshop. Although conifers as a whole were targeted as key genera only the largest groups have been dealt with.

Table 2.2 Key genera attributes and ranking

<i>Key genus</i>	Number of species and cultivars at Eastwoodhill * (N).	N as a percentage of total number of species and cultivars at Eastwoodhill (%).	Average score (Av).	Weighted score. W =% x Av	Ranked for N	Ranked for W	Ranked for Av.
<i>Abies</i>	33+4 =37	1.73	8.25	14.27	10	10	30=
<i>Acer</i>	77+57=134	6.30	9.19	57.89	1	1	2
<i>Aesculus</i>	16+5 =21	0.98	8.55	8.38	21	20	15
<i>Alnus</i>	24+5 =29	1.36	6.60	8.98	14=	17	nr
<i>Betula</i>	37+3 =40	1.88	8.89	16.71	9	8	7
<i>Camellia</i>	19+199=218	10.00	-	-	-	-	-
<i>Cedrus</i>	4+6=10	0.47	7.67	3.6	nr	nr	nr
<i>Crataegus</i>	29+7=36	1.69	7.56	12.79	11	11	nr
<i>Cupressus</i>	12+5=17	0.79	6.78	5.41	27=	29	nr
<i>Fagus</i>	5+12=17	0.79	8.22	6.49	27=	23	33=
<i>Fraxinus</i>	27+4=31	1.45	7.61	11.03	13	12	nr
<i>Ilex</i>	16+7 =23	1.08	8.22	8.88	19	19	33=
<i>Juniperus</i>	22+7 =29	1.36	7.11	9.67	14=	15	nr
<i>Malus</i>	35+27=62	2.91	8.39	24.42	4	5	22=
<i>Magnolia</i>	33+28=61	2.87	9.44	27.09	5	4	1
<i>Picea</i>	24+4 =28	1.31	7.89	10.33	17	13	nr
<i>Pinus</i>	60+0 =60	2.82	8.39	23.65	6	6	22=
<i>Populus</i>	13+15=28	1.31	7.17	9.43	16=	16	nr
<i>Prunus</i>	43+63=106	4.98	9.06	45.12	2	2	4
<i>Pyrus</i>	6+0 =6	0.28	7.33	2.05	nr	nr	nr
<i>Quercus</i>	84+15=99	4.65	9.11	42.36	3	3	3
<i>Tilia</i>	16+1 =17	0.79	8.33	6.58	27=	22	24=

This table has been modified to include the additional genera that were assigned key genus status at this workshop. (*Camellia*, *Cedrus*, *Crataegus*, *Cupressus*, *Fraxinus*, *Populus*). nr = not ranked.

*species + cultivars = total

N as a % of the collection = $\frac{\text{Number of sp and cvr of that genus at Eastwoodhill}}{\text{Total number of sp and cvr at Eastwoodhill}} \times 100$

Weighted score.

This score allows us to assess the collection as it is at present in terms of the contribution of a particular genus of plants to the collection. It helps us separate botanically very important genera of which there are many species and cultivars, from botanically important genera of which there are few examples. For example, compare *Acer* with *Trochodendron*. *Acer* scores highly botanically and there are many species and cultivars in the collection, therefore the overall contribution of the genus to the collection is high. On the other hand, *Trochodendron*, which also scores highly, has only one representative and so its overall contribution to the collection is less.

Table 2.3 Genera at Eastwoodhill ranked according to Average score

<i>Genus</i>	Average score	Rank	<i>Genus</i>	Average score	Rank
<i>Magnolia</i> *	9.44	1	<i>Cornus</i>	8.22	33=
<i>Tetracentron</i>	9.20	2	<i>Fagus</i> *	8.22	33=
<i>Acer</i> *	9.12	3	<i>Ilex</i> *	8.22	33=
<i>Quercus</i> *	9.11	4	<i>Fothergilla</i>	8.21	36
<i>Prunus</i> *	9.06	5	<i>Ehretia</i>	8.20	37
<i>Talauma</i>	9.00	6	<i>Syrax</i>	8.19	38
<i>Betula</i> *	8.89	7=	<i>Calodendrum</i>	8.18	39
<i>Stuartia</i>	8.89	7=	<i>Crataemespilus</i>	8.17	40
<i>Emmenopterys</i>	8.83	9	<i>Crataegomespilus</i>	8.13	41
<i>Davidia</i>	8.71	10=	<i>Cercidiphyllum</i>	8.12	42=
<i>Schizophragma</i>	8.71	10=	<i>Neolitsea</i>	8.12	42=
<i>Lardizabala</i>	8.67	12=	<i>Parasyringa</i>	8.12	42=
<i>Manglietia</i>	8.67	12=	<i>Ginkgo</i>	8.11	45=
<i>Picrasma</i>	8.67	12=	<i>Metasequoia</i>	8.11	45=
<i>Aesculus</i> *	8.55	15	<i>Itea</i>	8.08	47
<i>Sorbus</i>	8.50	16=	<i>Pistachia</i>	8.07	48
<i>Disanthus</i>	8.50	16=	<i>Cercis</i>	8.06	49
<i>Platycarya</i>	8.50	16=	<i>Colquhounia</i>	8.00	50=
<i>Schima</i>	8.50	16=	<i>Euschaphus</i>	8.00	50=
<i>Glyptostrobus</i>	8.44	20	<i>Heteromorpha</i>	8.00	50=
<i>Sinojackia</i>	8.42	21	<i>Michelia</i>	8.00	50=
<i>Malus</i> *	8.39	22=	<i>Oxydendron</i>	8.00	50=
<i>Pinus</i> *	8.39	22=	<i>Paulownia</i>	8.00	50=
<i>Freylinia</i>	8.33	24=	<i>Photinia</i>	8.00	50=
<i>Sciadopitys</i>	8.33	24=	<i>Sassafras</i>	8.00	50=
<i>Taiwania</i>	8.33	24=	<i>Staphylea</i>	8.00	50=
<i>Tilia</i> *	8.33	24=	<i>Viburnum</i>	8.00	50=
<i>Nyssa</i>	8.33	24=			
<i>Keteleeria</i>	8.27	29			
<i>Abies</i>	8.25	30=			
<i>Dipelta</i>	8.25	30=			
<i>Mallotus</i>	8.25	30=			

All other genera below this point.

* Key genera

Table 2.4

Genera ranked according to the Number of species and cultivars at Eastwoodhill

<i>Genus</i>	Number of species and cultivars at Eastwoodhill	Rank
<i>Acer</i> *	134	1
<i>Prunus</i> *	106	2
<i>Quercus</i> *	99	3
<i>Malus</i> *	62	4
<i>Magnolia</i> *	61	5
<i>Pinus</i> *	60	6
<i>Sorbus</i>	49	7
<i>Syringa</i>	43	8
<i>Betula</i> *	40	9
<i>Abies</i> *	37	10
<i>Crataegus</i>	36	11
<i>Chamaecyparis</i>	35	12
<i>Fraxinus</i>	31	13
<i>Alnus</i> *	29	14=
<i>Juniperus</i>	29	14=
<i>Populus</i>	28	16=
<i>Picea</i> *	28	16=
<i>Clematis</i>	25	18
<i>Ilex</i> *	23	19
<i>Viburnum</i>	22	20
<i>Aesculus</i> *	21	21
<i>Buddleia</i>	19	22
<i>Acacia</i>	18	23=
<i>Berberis</i>	18	23=
<i>Euonymus</i>	18	23=
<i>Ulmus</i>	18	23=
<i>Cupressus</i>	17	27=
<i>Fagus</i> *	17	27=
<i>Tilia</i> *	17	27=
<i>Cornus</i>	16	30
<i>Cotoneaster</i>	16	30=
<i>Lonicera</i>	15	32=
<i>Philadelphus</i>	15	32=
<i>Salix</i>	13	
<i>Gleditsia</i>	13	
<i>Eucalyptus</i>	12	
<i>Thuja</i>	12	
<i>Cryptomeria</i>	11	
<i>Nothofagus</i>	11	
<i>Platanus</i>	11	
<i>Carpinus</i>	10	
<i>Cedrus</i>	10	
<i>Photinia</i>	10	
<i>Spiraea</i>	10	

All others below 10. *Key genus

Table 2.5

Genera ranked according to the Weighted Score

<i>Genus</i>	Weighted score	Average score
<i>Acer</i> *	57.89	9.19
<i>Prunus</i> *	45.12	9.06
<i>Quercus</i> *	42.36	9.11
<i>Magnolia</i> *	27.09	9.44
<i>Malus</i> *	24.42	8.39
<i>Pinus</i> *	23.65	8.39
<i>Sorbus</i>	19.58	8.50
<i>Betula</i> *	16.71	8.89
<i>Syringa</i>	14.35	7.12
<i>Abies</i> *	14.27	8.25
<i>Crataegus</i>	12.79	7.56
<i>Fraxinus</i>	11.03	7.61
<i>Picea</i> *	10.33	7.89
<i>Chamaecyparis</i>	10.33	6.28
<i>Juniperus</i> *	9.67	7.11
<i>Populus</i>	9.43	7.17
<i>Alnus</i> *	8.98	6.60
<i>Clematis</i>	8.99	7.65
<i>Ilex</i> *	8.88	8.22
<i>Aesculus</i> *	8.38	8.55
<i>Viburnum</i>	8.27	8.00
<i>Tilia</i> *	6.58	8.33
<i>Fagus</i> *	6.49	8.22
<i>Cornus</i>	6.18	8.22
<i>Ulmus</i>	6.11	7.22
<i>Euonymus</i>	5.68	6.72
<i>Buddleia</i>	5.67	6.35
<i>Berberis</i>	5.44	6.44
<i>Cupressus</i>	5.41	6.78
<i>Acacia</i>	5.28	6.25
<i>Philadelphus</i>	4.85	6.89
<i>Lonicera</i>	4.80	6.81
many entries lower than 4.8		
<i>Pyrus</i>	2.05	

Weighted score = Average score x percentage. Where percentage is 'Number of species and cultivars of that genus at EWH as a percentage of the total number of species and cultivars at EWH'. Percentages can be found in Table 2.2.

This score allows us to assess the collection as it is at present in terms of the contribution of a particular genus of plants to the collection. It helps us separate botanically very important genera of which there are many species and cultivars, from botanically important genera of which there are few examples. For example compare *Acer* with *Trochodendron*. *Acer* scores highly botanically and there are many species and cultivars in the collection, therefore the overall contribution of the genus to the collection is high. On the other hand, *Trochodendron* which also scores highly, has only one representative and so its overall contribution to the collection is less.

Table 2.6 Families ranked for combined weighted score

Family	Weighted total $WT = \sum(Av \times N^w)$	Mean of average score for genera in this family	Number of key genera in this family	Number of genera at Eastwoodhill that belong to this family
Rosaceae	2704.28	7.00	three	35
Aceraceae	1231.46	9.19	one	1
Pinaceae	1195.05	7.75	three	8
Fagaceae	1148.06	7.66	two	5
Oleaceae	780.91	6.60	-	13
Cupressaceae	695.98	6.78	three	8
Betulaceae	688.91	7.31	two	5
Magnoliaceae	662.15	8.35	one	6
Fabaceae	537.61	6.69	-	32
Caprifoliaceae	370.06	6.62	-	?
Myrtaceae	291.89	6.26	-	12
Salicaceae	284.48	6.80	-	2
Saxifragaceae	254.93	7.12	-	8
Ranunculaceae	233.25	7.30	-	2
Ulmaceae	199.76	7.13	-	3
Aquifoliaceae	189.06	8.22	One	1
Hippocastanaceae	175.55	8.55	One	1
Berberidaceae	172.05	6.63	-	3
Hamamelidaceae	166.83	7.57	-	10
Taxodiaceae	156.68	7.70	-	9
Celastraceae	142.58	6.30	-	5
Bignoniaceae	141.73	6.95	-	9
Tiliaceae	141.60	8.33	One	2

Weighted total for any family= the sum of (average score x number of species and cultivars at Eastwoodhill) for each genus in the family.

All others weighted total below 100

Table 2.7 Lists of additional species and cultivars present in other collections. Data from MacKay (1990a).

Genera listed: *Abies*, *Acer*, *Aesculus*, *Alnus*, *Betula*, *Fagus*, *Juniperus*, *Malus*, *Prunus*, *Pyrus*, *Quercus*, *Tilia*
Magnolia and *Ilex* are listed separately in the detailed exercise on those two genera.

ABIES

Abies balsamea 'Nana'
Abies borisii-regis
Abies x bornmuelleriana
Abies chensiensis var. *ernestii*
Abies cilicica
Abies concolor 'Lowiana'
Abies delavayi var. *smithii* female.
Abies ernestii var. *salouenensis*
Abies equi-trojana
Abies fargesii
Abies lasiocarpa 'Arizonica'
Abies lasiocarpa 'Arizonica Compacta'
Abies marocana
Abies magnifica var. *lasiocarpa*
Abies magnifica var. *shastensis*
Abies nephrolepis
Abies nordmanniana male
Abies pardei
Abies pindrow
Abies pinsapo ssp. *marocana*
Abies procera 'Glauca'
Abies religiosa var. *emarginata*
Abies sachalinensis
Abies siberica
Abies spectabilis
Abies vejari

ACER

Acer circinatum x *palmatum*
Acer franchetti
Acer micranthum
Acer nikoense x *griseum*
Acer ningapense
Acer palmatum several varieties
Acer platanoides 'Laciniatum'
Acer platanoides 'Rubrum'
Acer platanoides 'Waldersseei'
Acer pseudoplatanus 'Prince Handjerg'

Acer pseudoplatanus 'Victoria'
Acer rubrum 'Scanlon'
Acer sieboldianum var. *macrophyllum*
Acer tartaricum

AESCULUS

Aesculus indica 'Sydney Pearce'
Aesculus indica 'Tibettii'
Aesculus neglecta 'Erythroblastos'
Aesculus neglecta 'Harbisonii'

ALNUS

Alnus glutinosa 'Imperialis'
Alnus maximowiczii
Alnus sinuata
Alnus viridis

BETULA

Betula alnoides
Betula corylifolia
Betula cylindrostachya
Betula davurica
Betula ermanni ganjuensis ?
Betula 'Jerymyns'
Betula macrophyllum
Betula nana
Betula nigra 'Gallen'
Betula pendula 'Purpurea'
'Purple Splendor'
'Youngii'
Betula platyphylla 'Purpurea'

FAGUS

Fagus sylvatica 'Ansoergei'
'Aurea Pendula'
'Dawyck Gold'
'Dawyck Purple'
'Swat Magret'

JUNIPERUS

J. ashei
J. bermudiana
J. bermudiana bermudiana ?
J. chinensis
J. chinensis cultivars
J. chinensis 'Mountbatten'
J. chinensis 'Columnaris Glauca'
J. communis cultivars
J. conferta
J. davurica 'Expansa'
J. deppeana pachyphloea
J. horizontalis cultivars
J. macropoda
J x media cultivars
J. osteosperma
J. oxycedrus var. *macrocarpa*
J. phoenica
J. pinchotii
J. procumbens
J. procumbens 'Nana'
J. recurva var. *coxii* dwarf
J. sabina cultivars
J. sabina 'Lutchuensis'
J. sargentii 'Glauca'
J. scopularum
J. scopularum 'Table Top Blue'
Juniperus 'Spartan'
J. squamata cultivars
J. taxifolia var. *lutchuensis*
J. thurifera
J. utahensis
J. virginiana
J. virginiana 'Pathfinder'
J. virginiana 'Skyrocket'
J. virginiana 'Tollesons Weeping'

MALUS

Malus sargentii
Malus toringoides
Malus transitoria
Malus 'Ballerina'
Malus 'Blue Mountain'
Malus 'Dorothea'
Malus 'Elizabeth Nairn'
Malus 'Gorgeous'

Malus 'Jack Humm'

Malus 'Profusion'

Malus 'Red Jade'

Malus 'Sovereign'

Malus 'Strathmore'

Malus 'St John'

Malus 'van Eseltine'

PICEA

Picea abies cultivars

Picea abies 'Aurea'

Picea abies 'Glauca'

Picea abies 'Humilis'

Picea abies 'Little Gem'

Picea abies 'Ohlendorffii'

Picea asperata

Picea chihuahuana

Picea glauca cultivars

Picea engelmanni var. *mexicana*

Picea farreri

Picea glenhnii

Picea jezoensis

Picea jezoensis var. *hondoensis*

Picea koraiensis

Picea likiangensis

Picea likiangensis var. *purpurea*

Picea mariana

Picea meyeri

Picea montegena

Picea omorika 'Pendula'

Picea orientalis 'Nana'

Picea orientalis 'Skylands'

Picea polita

Picea pungens glauca 'Kosteriana'

Picea pungens 'Moerheimii'

Picea retroflexa

Picea schrenkiana var. *tianshanica*

PINUS

Pinus attenuata

Pinus ayachauite var. *veitchii*

Pinus balfouriana

Pinus bungeana

Pinus cembroides

Pinus cembroides var. *edulis*

Pinus cembroides var. *monophylla*

<i>Pinus cooperi</i> var. <i>ornelasi</i>	<i>Prunus campanulata</i> 'Superba'
<i>Pinus densata</i>	<i>Prunus cerasus</i>
<i>Pinus edulis fallax</i> ?	<i>Prunus cerasus</i> 'Rhexii'
<i>Pinus elliotii</i>	<i>Prunus</i> 'Claret Belle'
<i>Pinus engelmanni</i>	<i>Prunus conradinae</i> 'Malifolia'
<i>Pinus flexilis</i>	<i>Prunus cornuta</i>
<i>Pinus flexilis</i> var. <i>reflexa</i>	<i>Prunus cyclaminea</i>
<i>Pinus gerardiana</i>	<i>Prunus</i> 'Daihoku'
<i>Pinus griffithii</i>	<i>Prunus</i> 'Ichiyō'
<i>Pinus hartwigii</i>	<i>Prunus glandulosa</i> 'Alba Plena'
<i>Pinus hwangshanensis</i>	<i>Prunus kurilensis</i> 'Ruby'
<i>Pinus khasya</i>	<i>Prunus laurocerasus</i> 'Otto Lutkyen'
<i>Pinus koraiensis</i> 'Glauca'	<i>Prunus</i> 'Orchid Pink'
<i>Pinus leiophylla</i>	<i>Prunus</i> 'Pearly Shadows'
<i>Pinus leucodermis</i>	<i>Prunus persica</i> 'Pendula'
<i>Pinus maximartinezii</i>	'Pink Ballerina'
<i>Pinus michoanana</i>	'Pink Cloud'
<i>Pinus nigra</i> var. <i>cebenensis</i>	<i>Prunus</i> 'Pink Clouds'
<i>Pinus nigra</i> var. <i>pyramidata</i>	<i>Prunus prostrata</i>
<i>Pinus oaxacana</i>	<i>Prunus pseudocerasus</i>
<i>Pinus palustris</i>	<i>Prunus pumila</i> var. <i>depressa</i>
<i>Pinus pentaphylla</i> var. <i>himekomatsu</i>	<i>Prunus</i> 'Seaview Beauty'
<i>Pinus parviflora</i> var. <i>pentaphylla</i>	<i>Prunus serotina</i> 'Salicifolia'
<i>Pinus pinceana</i>	<i>Prunus serrulata</i> 'Amanogawa'
<i>Pinus pityusa</i>	<i>Prunus serrulata</i> var. <i>pubescens</i>
<i>Pinus pseudostrobus</i>	<i>Prunus serrulata</i> var. <i>spontanea</i>
<i>Pinus psuedostrobus</i> var.	<i>Prunus serrulata</i> <i>uniflora</i> ?
<i>Pinus pseudostrobus</i> var. <i>apulcensis</i>	<i>Prunus serrulata</i> 'Shirofugen'
<i>Pinus pumila</i>	<i>Prunus speciosa</i>
<i>Pinus radiata</i> 'Aurea'	<i>Prunus speciosa</i> 'Oshima'
<i>Pinus radiata</i> 'Marshwood'	<i>Prunus subhirtella</i> 'Ascendens Rosea'
<i>Pinus roxburgii</i>	<i>Prunus subhirtella</i> 'Falling Snow'
<i>Pinus rudis</i>	<i>Prunus subhirtella</i> 'Halle Juliette'
<i>Pinus strobiformis</i>	<i>Prunus subhirtella</i> 'Peggy Wilson'
<i>Pinus sylvestrifomis</i>	<i>Prunus subhirtella</i> x <i>yedoensis</i>
<i>Pinus sylvestris</i> 'Beauvtonensis'	<i>Prunus triloba</i>
<i>Pinus sylvestris mongolica</i> ?	<i>Prunus virginiana</i>
<i>Pinus taeda</i>	<i>Prunus yedoensis</i> 'Chinese Brocade'
<i>Pinus torreyana</i>	
<i>Pinus washoensis</i>	
PRUNUS	PYRUS
<i>Prunus</i> 'Accolade'	<i>Pyrus amoena</i>
<i>Prunus</i> 'Ariake'	<i>Pyrus betulifolia</i>
<i>Prunus campanulata</i> 'Felix Jury'	<i>Pyrus callereana</i>
<i>Prunus campanulata</i> 'Red Veil'	<i>Pyrus callereana faurei</i> ?
	<i>Pyrus pyrifolia</i>
	<i>Pyrus salicifolia</i>

Pyrus salicifolia 'Pendula'

Pyrus ussuriensis

QUERCUS

Quercus affinis

Quercus castanaefolia

Quercus x heterophylla

Quercus incana

Quercus laurifolia

Quercus petraea 'Fastigiata'

Quercus prinus x canariensis

Quercus serrata 'Aurea'

Quercus virginiana

also see Hackfalls Arboretum catalogue

TILIA

Tilia japonica

Tilia megaphylla

Tilia orbicularis

Tilia platyphylla 'Rubra'

SECTION THREE: DEVELOPMENT OF THE GENUS MAGNOLIA AT EASTWOODHILL**Table 3.1** Information on the genera under consideration

<i>Genus</i>	Number of species and cultivars at Eastwoodhill (N).	N as a percentage of total number of species and cultivars at Eastwoodhill (%).	Average score (Av.)	Weighted score W=%xAv.	Ranked for N	Ranked for W	Ranked for Av.
<i>Liriodendron</i>	2+2 =4	0.18	7.65	1.37	nr	nr	nr
<i>Magnolia</i>	33+28=61	2.87	9.44	27.09	5	4	1
<i>Manglietia</i>	1+0 =1	0.047	8.67	0.40	nr	nr	12=
<i>Michelia</i>	3+1 =4	0.18	8.00	1.44	nr	nr	nr
<i>Schisandra</i>	2+0 =2	0.09	7.36	0.66	nr	nr	nr
<i>Talauma</i>	1+0 =1	0.047	9.00	0.42	nr	nr	6

'Number at Eastwoodhill' is expressed as species + cultivars = total.

'Number as % of collection' expresses the number of species and cultivars of that genus as a percentage of the total number of species and cultivars in the collection.

nr = not ranked

Table 3.3: Portion of the genera represented at Eastwoodhill

<i>Genus</i>	Number of species in genus	Reference	Number of species at Eastwoodhill	N as % of total number of species
<i>Liriodendron</i>	2	H3, K	1	50
<i>Magnolia</i>	80-85	K, H3	33	41
<i>Manglietia</i>	30	K	1	3.3
<i>Michelia</i>	45-50	K, H3	3	6
<i>Schisandra</i>	25	K, H3	1	4
<i>Talauma</i>	40	H3	1	3.3

Notes

-The number at EWH include only the species, not the cultivars. The percentage is worked out on that basis.

-H3 is Hortus III, K is Krussman.

Table 3.2.1 Magnoliaceae - List of plants, plants purchased, at Eastwoodhill

<p><u>Current</u></p> <p><i>Liriodendron tulipifera</i></p> <p><i>Liriodendron tulipifera</i> 'Aureo Marginata'</p> <p><i>Liriodendron tulipifera</i> 'Fastigata'</p> <p><i>Manglietia hookeri</i></p> <p><i>Manglietia insignis</i></p> <p><i>Michelia compressa</i></p> <p><i>Michelia doltsopa</i></p> <p><i>Michelia figo</i></p> <p><i>Schisandra coccinea</i></p> <p><i>Talauma hodgsonii</i></p> <p><u>Plants purchased by W D Cook - additional to the above</u></p> <p><i>Schisandra chinensis rubra</i> S1939, (Bean II lib)</p> <p><i>Schisandra chinensis var. rubriflora</i> H&S1937,47, (Bean S lib)</p>
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Table 3.2.2 Magnolia - List of plants, plants purchased, at Eastwoodhill

<p><u>Current</u></p> <p><i>Magnolia acuminata</i> 'Golden Glow'</p> <p><i>Magnolia campbellii</i></p> <p style="padding-left: 40px;"><i>f. alba</i></p> <p style="padding-left: 40px;">'Charles Raffill'</p> <p><i>M. coco</i></p> <p><i>M. cordata</i></p> <p><i>M. cylindrica</i></p> <p><i>M. dawsoniana</i></p> <p><i>M. delavayi</i></p> <p><i>M. demudata</i></p> <p><i>M. demudata</i> 'Purple Eye'</p> <p><i>M. 'Douglas Cook'</i></p> <p><i>M. 'Early Rose'</i></p> <p><i>M. fraseri</i></p> <p><i>M. grandiflora</i></p> <p style="padding-left: 40px;">'Angustifolia'</p> <p style="padding-left: 40px;">'Exmouth'</p> <p style="padding-left: 40px;">'Ferruginea'</p> <p style="padding-left: 40px;">'Goliath'</p> <p><i>M. heptapeta</i> 'Purple Eye'</p>	<p><i>M. 'Heaven Scent'</i></p> <p><i>M. hypoleuca</i></p> <p><i>M. 'Iolanthe'</i></p> <p><i>M x 'Kewensis'</i></p> <p><i>M. kobus</i></p> <p><i>M. kobus var. borealis</i></p> <p><i>M. liliflora</i></p> <p><i>M. x loebneri</i></p> <p><i>M. macrophylla</i></p> <p><i>M. nitida</i></p> <p><i>M. officinalis</i></p> <p><i>M. officinalis var. biloba</i></p> <p><i>M. 'Peppermint Stick'</i></p> <p><i>M. 'Pinkie'</i></p> <p><i>M x proctoriana</i></p> <p><i>M. 'Royal Crown'</i></p> <p><i>M. salicifolia</i></p> <p><i>M. sargentiana var. robusta</i></p> <p><i>M. 'Serene'</i></p> <p><i>M. sieboldii</i></p> <p><i>M x soulangiana</i></p>
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<p><i>M. soulangiana</i></p> <ul style="list-style-type: none"> 'Alba' 'Alexandrina' 'Brozzoni' 'Lennei' 'Lennei Alba' 'Norbetii' 'Rustica Rubra' 'Speciosa' 'Triumphans' (denudata triumphans) 'Verbanica' <p><i>M. sprengeri</i> var. <i>diva</i></p> <p><i>M. stellata</i></p> <ul style="list-style-type: none"> 'Rosea' 'King Rose' <p><i>M x thompsoniana</i></p> <p><i>M. tripetala</i></p> <p><i>M x veitchii</i></p> <ul style="list-style-type: none"> 'Isca' 'Peter Veitch' <p><i>M. virginiana</i></p> <p><i>M. virginiana</i> var. <i>australis</i></p> <p><i>M. wilsonii</i></p>
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<p><u>Plants purchased by W D Cook - additional to the above</u></p> <p><i>Magnolia ashei</i></p> <p><i>Magnolia campbellii</i> ssp. <i>mollicomata</i> best pink</p> <p><i>Magnolia campbellii</i> ssp. <i>mollicomata</i> 'Fastigiata'</p> <p><i>Magnolia denudata</i> 'Purple eye'</p> <p><i>Magnolia denudata</i> late flowering,</p> <p><i>Magnolia denudata</i> 'Picture'</p> <p><i>Magnolia glauca</i></p> <p><i>Magnolia globosa</i> (<i>tsarongensis</i>)</p> <p><i>Magnolia globosa</i> var. <i>sinensis</i></p> <p><i>Magnolia grandiflora longifolia</i></p> <p><i>Magnolia</i> 'Highdownensis'</p> <p><i>Magnolia liliflora</i> 'Nigra'</p> <p><i>Magnolia loebneri</i> 'Merril'</p> <p><i>Magnolia loebneri</i> 'Nigra'</p> <p><i>Magnolia mollicomata</i> see <i>campbellii</i> ssp. <i>mollicomata</i></p> <p><i>Magnolia nicholsoniana</i></p> <p><i>Magnolia nitida</i></p> <p><i>Magnolia parviflora</i></p> <p><i>Magnolia parviflora</i> 'Flore Plena'</p> <p><i>Magnolia pyramidata</i></p> <p><i>Magnolia rostrata</i></p> <p><i>Magnolia salicifolia</i> var. <i>concolor</i></p> <p><i>Magnolia sargentiana</i></p> <p><i>Magnolia sinensis</i></p> <p><i>Magnolia soulangiana</i></p> <ul style="list-style-type: none"> 'Alba' 'Alba Superba' 'Amabilis' 'Norbetti' 'Speciosa' <p><i>Magnolia sprengeri</i></p> <p><i>Magnolia sprengeri</i> var. <i>elongata</i></p> <p><i>Magnolia stellata</i> 'Waterlily'</p> <p><i>Magnolia virginiana</i></p> <p><i>Magnolia watsonii</i></p> <p><i>Magnolia wilsonii</i> 'Lord Wakehurst'</p>
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Table 3.4 Extensions of the genera

MAGNOLIACEAE: 12 genera.

Aromadendron: 3 species from Malaysia and China. Not in cultivation according to Krussman.

Alcimandra: 1 species from the Himalaya. *A.cathcartii*

Liriodendron: 2 species, 1 already present. The other is *L.chinense*.

<i>Michelia</i> :	<i>champaca</i>	Himalaya
	<i>formosana</i>	Taiwan
	<i>nilagirica</i>	India
	<i>sinensis</i>	China
	<i>velutina</i>	Himalaya
<i>Schisandra</i> :	<i>chinensis</i>	Asia
	<i>coccinea</i>	USA
	<i>henryi</i>	China
	<i>propinqua</i>	China
	<i>repanda</i>	Japan, Korea
	<i>sphaerandra</i>	China
	<i>sphenanthera</i>	China
<i>Talauma</i> :	1 species, already present	

Table 3.5 Suggested acquisitions for Eastwoodhill

Group members suggested the following plants:

<i>Illicium</i> sp.	<i>Magnolia parviflora</i>
<i>Kadsura japonica</i>	<i>Magnolia</i> 'Purple Globe'
<i>Liriodendron chinense</i>	<i>Magnolia rostrata</i>
<i>Magnolia</i> , tropical species.	<i>Magnolia scheideana</i>
<i>Magnolia ashei</i>	<i>Magnolia sinensis</i>
<i>Magnolia brooklynensis</i> 'Evanorii'	<i>Magnolia</i> 'Sundance'
<i>Magnolia</i> 'Caerhays Belle'	<i>Magnolia virginiana</i> 'Autumn Delight'
<i>Magnolia campbellii</i> cultivars	<i>Magnolia</i> 'Vulcan'
<i>M. campbellii</i> ssp. <i>mollicomata</i> 'Lanarth'	<i>Magnolia</i> 'Wadas Memory'
<i>M. campbellii</i> ssp. <i>mollicomata</i> 'Kew Surprise'	<i>Magnolia watsonii</i>
<i>M. campbellii</i> ssp. <i>mollicomata</i> 'Maharajah'	<i>Magnolia</i> 'Yellowbird'
<i>Magnolia dealbata</i>	<i>Michelia yunnanense</i>
<i>Magnolia denudata</i> 'Purple Eye'	<i>Michelia</i> , carefully sited
<i>Magnolia fraseri</i>	<i>Talauma mexicana</i>
<i>Magnolia globosa</i>	
<i>Magnolia grandiflora</i> 'Little Gem'	
<i>Magnolia grandiflora</i> 'Samuel Somers'	
<i>Magnolia grandiflora x virginiana</i> 'Freeman'	
<i>Magnolia</i> 'Leonard Messel'	
<i>Magnolia</i> 'Mark Jury'	
<i>Magnolia</i> 'Michael Rosse'	

{Tables 3.6-3.8 no longer exist. The exercise, as originally planned, also included *Ilex*, but that part of the exercise that was never conducted due to shortage of time. The tables have been removed from this record.}

Table 3.9 Magnolia ranking for botanical score

Species	Botanical score	Rank	Number of individuals of that species or cultivar at Eastwoodhill	Aesthetic score
<i>Magnolia coco</i>	9.2	1	1	5.2
<i>Magnolia nitida</i>	9.0	2	0	8.6
<i>Manglietia insignis</i>	9.0	2=	0	8.4
<i>Manglietia hookeri</i>	8.8	4=	1	8.4
<i>Talauma hodgesonii</i>	8.8	4=	1	8.4
<i>Magnolia sprengeri</i> var. <i>diva</i>	8.8	4=	1	9.8
<i>Mag. sargentiana</i> var. <i>robusta</i>	8.6	7=	1	9.8
<i>Michelia compressa</i>	8.6	7=	1	6.0
<i>Schisandra coccinea</i>	8.6	7=	1	6.8
<i>Magnolia dawsoniana</i>	8.4	10=	1	9.0
<i>Magnolia macrophylla</i>	8.4	10=	3	8.4
<i>Magnolia officinalis</i>	8.4	10=	0	7.2
<i>Michelia doltsopa</i>	8.2	13=	3	9.2
<i>Magnolia campbellii</i>	8.2	13=	3	9.8
<i>Magnolia campbellii</i> f. <i>alba</i>	8.2	13=	1	9.8
<i>Magnolia cylindrica</i>	8.2	13=	2	7.8
<i>Magnolia officinalis</i> var. <i>biloba</i>	8.0	17	2	7.2
<i>Magnolia fraseri</i>	7.8	18	0	7.4
<i>Magnolia hypoleuca</i>	7.6	19=	0	7.4
<i>Magnolia wilsonii</i>	7.6	19=	2	8.4
<i>Liriodendron tulipifera</i>	7.4	21	3	8.0
<i>Michelia figo</i>	7.2	22=	3	6.2
<i>Magnolia</i> 'Charles Raffill'	7.2	22=	1	9.4
<i>Magnolia denudata</i>	7.2	22=	1	8.2
<i>Magnolia grandiflora</i>	7.2	22=	17	7.8
<i>Magnolia delavayi</i>	7.0	26=	4	7.6
<i>Magnolia sieboldii</i>	7.0	26=	2	8.0
<i>Magnolia tripetala</i>	7.0	26=	2	6.0
<i>Magnolia virginiana</i>	7.0	26=	0	6.4

Table 3.10 Magnolia ranking for aesthetic score

Species	Aesthetic score	Rank	Number of individuals of that species or cultivar at Eastwoodhill	Botanical score
<i>Magnolia campbellii</i>	9.8	1	3	8.2
<i>Magnolia campbellii f. alba</i>	9.8	1=	1	8.2
<i>Magnolia sargentiana var. robusta</i>	9.8	1=	1	8.6
<i>Magnolia sprengeri var. diva</i>	9.8	1=	1	8.8
<i>Magnolia</i> 'Charles Raffill'	9.4	5	1	7.2
<i>Michelia doltsopa</i>	9.2	6	3	8.2
<i>Magnolia dawsoniana</i>	9.0	7=	1	8.4
<i>Magnolia</i> 'Iolanthe'	9.0	7=	1	6.4
<i>Magnolia stellata</i>	8.8	8	3	6.8
<i>Magnolia stellata</i> 'Rosea'	8.6	9=	1	5.8
<i>Magnolia stellata</i> 'King Rose'	8.6	9=	0	5.6
<i>Magnolia nitida</i>	8.6	9=	0	9.0
<i>Magnolia macrophylla</i>	8.4	12=	3	8.4
<i>Magnolia grandiflora</i> 'Goliath'	8.4	12=	1	6.4
<i>Talauma hodgsonii</i>	8.4	12=	1	8.8
<i>Manglietia insignis</i>	8.4	12=	0	9.0
<i>Magnolia wilsonii</i>	8.4	12=	2	7.8
<i>Magnolia denudata</i> 'Purple Eye'	8.4	12=	0	6.6
<i>Manglietia hookeri</i>	8.2	18=	1	8.8
<i>Magnolia denudata</i>	8.2	18=	1	7.2
<i>Liriodendron tulipifera</i>	8.0	20	3	7.4
<i>Magnolia sieboldii</i>	8.0	20=	2	7.0
<i>Magnolia grandiflora</i> 'Feruginea'	8.0	20=	2	6.4
<i>Magnolia</i> 'Douglas Cook'	8.0	20=	7	6.0
<i>Liriodendron tulipifera</i> 'Aureomarginata'	7.8	24=	3	7.8
<i>Liriodendron tulipifera</i> 'Fastigiata'	7.8	24=	1	7.8
<i>Magnolia soulangiana</i>	7.8	24=	8	7.8
<i>Magnolia soulangiana</i> 'Alba'	7.8	24=	1	7.8
<i>Magnolia cylindrica</i>	7.8	24=	2	8.2
<i>Magnolia grandiflora</i>	7.8	24=	17	7.2
<i>Magnolia grandiflora</i> 'Exmouth'	7.8	24=	1	6.2
<i>Magnolia veitchii</i>	7.8	24=	3	7.8
<i>Magnolia veitchii</i> 'Peter Veitch'	7.8	24=	1	7.8
<i>Magnolia delavayi</i>	7.6	33=	3	7.0
<i>Magnolia kobus</i>	7.6	33=	many	6.4
<i>Magnolia</i> 'Serene'	7.6	33=	1	7.6
<i>Magnolia soulangiana</i> 'Alexandrina'	7.4	36=	7	7.4
<i>Magnolia liliiflora</i>	7.4	36=	4	7.4
<i>Magnolia loebneri</i>	7.4	36=	many	7.4
<i>Magnolia fraseri</i>	7.4	36=	0	7.8

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Species	Aesthetic score	Rank	Number of individuals of that species or cultivar at Eastwoodhill	Botanical score
<i>Magnolia</i> 'Heaven Scent'	7.4	36=	1	5.8
<i>Magnolia hypoleuca</i>	7.4	36=	0	7.6
<i>Magnolia soulangiana</i> 'Lennei'	7.2	42=	1	7.2
<i>Magnolia soulangiana</i> 'Lennei Alba'	7.2	42=	0	7.2
<i>Magnolia soulangiana</i> 'Speciosa'	7.2	42=	1	7.2
<i>Magnolia veitchii</i> 'Isca'	7.2	42=	3	7.2
<i>Magnolia</i> 'Early Rose'	7.2	42=	1	6.0
<i>Magnolia grandiflora</i> 'Angustifolia'	7.2	42=	2	6.0
<i>Magnolia officinalis</i>	7.2	42=	0	7.2
<i>Magnolia officinalis</i> var. <i>biloba</i>	7.2	42=	2	7.2
<i>Magnolia</i> 'Pinkie'	7.2	42=	1	7.2
<i>Magnolia salicifolia</i>	7.2	42=	1	7.2
<i>Magnolia</i> 'Peppermint Stick'	7.0	52=	1	7.0
<i>Magnolia kobus</i> var. <i>borealis</i>	7.0	52=	1	7.0
<i>Magnolia thompsoniana</i>	7.0	52=	1	7.0
<i>Magnolia soulangiana</i> cultivars	7.0	52=	many	

Table 3.11 Ratings for species at Eastwoodhill - Magnolia

Species	Botanical score	Aesthetic score	Rank for Botanical score	Rank for Aesthetic score	Present in other collections (MacKay, 1990a)
<i>Magnolia acuminata</i> 'Golden Glow'	6.8	5.4	nr	nr	Yes
<i>Magnolia campbellii</i>	8.2	9.8	13=	1=	Yes
<i>f. alba</i>	8.2	9.8	13=	1=	Yes
'Charles Raffill'	7.2	9.4	22=	5	Yes
<i>Magnolia coco</i>	9.2	5.2	1	nr	No
<i>Magnolia cordata</i>	6.8	5.6	nr	nr	No
<i>Magnolia cylindrica</i>	8.2	7.8	13=	24=	Yes
<i>Magnolia dawsoniana</i>	8.4	9.0	10=	7=	Yes
<i>Magnolia delavayi</i>	7.0	7.6	nr	33=	Yes
<i>Magnolia demudata</i>	7.2	8.2	22=	18=	Yes
<i>Magnolia demudata</i> 'Purple Eye'	6.6	8.4	nr	12=	No
<i>Magnolia</i> 'Douglas Cook'	6.0	8.0	nr	20=	Yes
<i>Magnolia</i> 'Early Rose'	6.0	7.2	nr	42=	No
<i>Magnolia fraseri</i>	7.8	7.4	18	36=	No
<i>Magnolia grandiflora</i>	7.2	7.8	22=	24=	Yes
'Angustifolia'	6.0	7.2	nr	42=	Yes
'Exmouth'	6.2	7.8	nr	24=	No
'Ferruginea'	6.4	8.0	nr	20=	Yes
'Goliath'	6.4	8.4	nr	12=	Yes
<i>Magnolia</i> 'Iolanthe'	6.4	9.0	nr	7=	Yes
<i>Magnolia</i> 'Heaven Scent'	5.8	7.4	nr	36=	Yes
<i>Magnolia hypoleuca</i>	7.6	7.4	19=	36=	Yes
<i>Magnolia</i> x 'Kewensis'	6.0	6.0	nr	nr	Yes
<i>Magnolia kobus</i>	6.4	7.6	nr	33=	Yes
<i>Magnolia kobus</i> var. <i>borealis</i>	6.0	7.0	nr	52=	Yes
<i>Magnolia liliiflora</i>	6.6	7.4	nr	36=	Yes
<i>Magnolia x loebneri</i>	6.4	7.4	nr	36=	Yes
<i>Magnolia macrophylla</i>	8.4	8.4	10=	12=	Yes
<i>Magnolia nitida</i>	9.0	8.6	2	9=	Yes
<i>Magnolia officinalis</i>	8.4	7.2	10=	42=	No
<i>Magnolia officinalis</i> var. <i>biloba</i>	8.0	7.2	17	42=	Yes
<i>Magnolia</i> 'Peppermint Stick'	5.4	7.0	nr	52=	Yes
<i>Magnolia</i> 'Pinkie'	5.0	7.2	nr	42=	Yes
<i>Magnolia x proctoriana</i>	5.4	6.8	nr	nr	Yes
<i>Magnolia</i> 'Royal Crown'	4.8	6.0	nr	nr	No
<i>Magnolia salicifolia</i>	6.6	7.2	nr	42=	Yes
<i>Magnolia sargentiana</i> var. <i>robusta</i>	8.6	9.8	7=	1=	Yes
<i>Magnolia</i> 'Serene'	6.2	7.6	nr	33=	Yes
<i>Magnolia sieboldii</i>	7.0	8.0	26=	20=	Yes
<i>Magnolia x soulangiana</i>	5.8	7.8	nr	24=	Yes
'Alba'	5.4	7.8	nr	24=	Yes

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Species	Botanical score	Aesthetic score	Rank for Botanical score	Rank for Aesthetic score	Present in other collections (MacKay, 1990a)
'Alexandrina'	5.0	7.4	nr	36=	Yes
'Brozzoni'	4.8	7.0	nr	52=	No
'Lennei'	5.8	7.2	nr	42=	Yes
'Lennei Alba'	5.4	7.2	nr	42=	Yes
'Norbetii'	5.0	7.0	nr	52=	No
'Rustica Rubra'	5.0	7.0	nr	52=	Yes
'Speciosa'	4.8	7.2	nr	42=	No
'Triumphans'	4.8	6.8	nr	nr	No
'Verbanica'	5.0	7.0	nr	52=	Yes
<i>Magnolia sprengeri</i> var. <i>diva</i>	8.8	9.8	4=	1=	Yes
<i>Magnolia stellata</i>	6.8	8.8	nr	8	Yes
'Rosea'	5.8	8.6	nr	9=	Yes
'King Rose'	5.6	8.6	nr	9=	Yes
<i>Magnolia x thompsoniana</i>	5.8	7.0	nr	52=	Yes
<i>Magnolia tripetala</i>	7.0	6.0	26=	nr	Yes
<i>Magnolia x veitchii</i>	5.8	7.8	nr	24=	Yes
'Isca'	5.0	7.2	nr	42=	No
'Peter Veitch'	5.0	7.8	nr	24=	Yes
<i>Magnolia virginiana</i>	7.0	6.4	26=	nr	Yes
<i>Magnolia virginiana</i> var. <i>australis</i>	6.4	6.4	nr	nr	Yes
<i>Magnolia wilsonii</i>	7.8	8.4	19=	12=	Yes
<i>Liriodendron tulipifera</i>	7.4	8.0	21	20	no data
<i>Liriodend. tulipif.</i> 'Aureomarginata'	6.4	7.8	nr	24=	no data
<i>Liriodendron tulipifera</i> 'Fastigiata'	6.6	7.8	nr	24=	no data
<i>Manglietia hookeri</i>	8.8	8.2	4=	18=	no data
<i>Manglietia insignis</i>	9.0	8.4	2=	12=	no data
<i>Michelia compressa</i>	8.6	6.0	7=	nr	no data
<i>Michelia doltsopa</i>	8.2	9.2	13=	6	no data
<i>Michelia figo</i>	7.2	6.2	22=	nr	no data
<i>Schisandra coccinea</i>	8.6	6.8	7=	nr	no data
<i>Talauma hodgsonii</i>	8.8	8.4	4=	12=	no data

SECTION FOUR: MANAGEMENT PLAN FOR PEAR PARK

Table 4.1 Arboretum key genera in Pear Park

<i>Key genus</i>	Present in Pear Park	Number of species and cultivars in Pear Park	No. of species and cultivars in Pear Park as a percentage of the number of species and cultivars in the current collection.	Are the plants sole examples
<i>Abies</i>	yes	1	2.7	no
<i>Acer</i>	yes	19	14	yes
<i>Aesculus</i>	yes	6	28	yes
<i>Alnus</i>	yes	2	6.89	no
<i>Betula</i>	yes	3	7.5	no
<i>Fagus</i>	yes	4	23	no
<i>Ilex</i>	no	0	0	-
<i>Juniperus</i>	yes	12	41	yes
<i>Malus</i>	yes	17	27	yes
<i>Magnolia</i>	yes	1	1.6	no
<i>Picea</i>	no	0	0	-
<i>Pinus</i>	no	0	0	-
<i>Prunus</i>	yes	6	5.6	no
<i>Pyrus</i>	yes	3	50	no?
<i>Quercus</i>	yes	24	24	yes
<i>Tilia</i>	yes	8	47	yes

Table 4.2: Park key genera

<i>Genus</i>	Average score	Number of species and cultivars in Pear Park	Number of species and cultivars in Pear Park as a percentage of number of species and cultivars in the current collection	Are the plants sole examples.
<i>Celtis</i>	6.83	3	42	yes
<i>Crataemespilus</i>	8.17	2	100	yes
<i>Crataegomespilus</i>	8.13	1	100	yes
<i>Crataegus</i>	7.56	13	36	yes
<i>Emmenopterys</i>	8.83	1	100	yes
<i>Fraxinus</i>	7.61	15	48	yes
<i>Gleditsia</i>	7.22	3	23	no
<i>Platanus</i>	7.22	4	36	yes
<i>Platycarya</i>	8.50	1	100	yes
<i>Stuartia</i>	8.89	1	14	no
<i>Buddleia</i>	6.35	3	15	yes
<i>Viburnum</i>	8.00	1	4.5	yes

Park key genera as proposed by the author.

Sole examples - if answered yes, then there are members of that genus in Pear Park that are the only representative of the species at EWH.

Table 4.3 Plants previously present in Pear ParkPlants listed for Pear Park by W D Cook - but which are no longer present.Bottom corner by Aesculus pyramidalis*Sorbus domestica**Sorbus intermedia**Sorbus folgeneri* 'Pendula'*Sorbus gracilis**Sorbus hupehensis* 'Aperta'*Sorbus megalocarpa**Sorbus mougeoti**Sorbus pohuashanensis**Sorbus rehderiana**Sorbus commixta**Sorbaronia fallax?**Sorbus arranensis**Sorbus aucuparia* 'Asplenifolia'*Quercus pedunculata* 'Purpurescens'*Malus glabrata**Malus* 'John Downie'Lime corner going up towards the ashes*Tilia tuan**Castanea macrocarpa**Castanea mollissima**Castanea alnifolia**Castanea sativa* 'Heterophylla'*Castanea crenata**Castanea dentata**Quercus sessiflora* 'Rubicunda'*Quercus pontica*Hawthorns to ashes and further*Crataegus holmesiana**Crataegus macranthera**Fraxinus griffithi**Quercus myrsinifolia**Tilia moltkei*Zanthoxylum and up*Ostrya japonica**Fraxinus paxiana**Zelkova davidiana*Near two catalpas*Aesculus neglecta**Aesculus mutabilis* 'Harbisoni'*Aesculus georgiana**Philadelphus* 'Favourite'*Philadelphus* 'Belle Etoile'*Philadelphus* 'Etoile Rose'*Aesculus glaucescens**Cotoneaster moupinensis*Below cottage*Clethra asplenifolia**Clethra fargesii**Acer triflorum**Acer mandshuricum**Acer fargesii**Acer tschonoskii**Acer tartaricum**Acer erianthum**Rhus canadensis**Diervilla styracea**Hypericum aureum**Hypericum hircinum**Cornus macrophylla**Cornus stolonifera* 'Flaviramea'*Salix fargesii**Salix alba* 'Vitellina'*Photinia beauverdiana*Near Emmenopterys*Quercus incana**Halesia monticola**Crataegus uniflora**Tsuga yunnanensis*Near junipers*Parrotiopsis jacquemontii**Fagus japonica**Malus baccata* var. *macrocarpa**Malus baccata* var. *mandshurica**Malus* 'Lady Northcliffe'*Malus* 'Wisley Crab'*Pyrus wilsoniana**Sorbus aria* 'Majestica'Cabbage tree walk*Acer japonicum**Acer davidii**Viburnum fragrans**Styrax japonicum**Enkianthus pulverulentus*

Hamamelis mollis
Malus purpurea
Hymenosporum sp.

Notes in Bean

Acer trautvetteri
Anthyllis barba-jovis
Buddleia davidii rosea-floribunda
Carpinus carolinianus
Castanea sativa 'Maron de Lyon'
Crataegus crus-galli
Euonymus suave
Jasminium nudiflorum
Lonicera syringantha
Prunus conradinae 'Flore Plena'
Quercus ilicifolia
Quercus macrocarpa
Quercus pontica
Ulmus carpinifolia 'Pendula'

Lonicera syringantha (bills)
Malus x micromalus
Malus toringoides (the ride)
Quercus garryana (3 in PP, sheep yards gate)
Quercus imbricaria
Quercus libani
Quercus macrocarpa
Quercus myrsinaefolia
Quercus robur 'Purpureaescens'
Sorbus chrysophylla
Sorbus majestica
Sorbus aucuparia 'Fructo Lutea'
Viburnum dentatum (the ride)
Viburnum fragrans (bills garden)

According to notebook 20

Abies nordmannia
Acer rubrum sanguinuem (the ride)
Acer saccharum (the ride)
Amelanchier canadensis
Anagyris foetida (under buddleia below bills)
Anthyllis barba-jovis (below bills)
Callicarpa purpurea (below bills)
Camellia 'Bonomania', 'Candidissima' (bills)
 'Prince Frederick William' (at bills on bank)
 'Spencers Pink', 'Wabusuki'
Crataegus ivensae
Crataegus macranthera
Crataegus punctata
Euonymus alatus (bills)
Euonymus atropurpureus (below bills)
Euonymus intermedius (below bills)
Euonymus suave (below bills)
Euonymus maacki (the ride, bills)
Fraxinus nigra (down drive, sheep yards)
Fraxinus oregona (Douglas Park, Pear Park)
Fraxinus heterophylla
Fraxinus griffithi
Fraxinus americana (sheep yards, drive edge)
Fraxinus angustifolia
Fraxinus angustifolia lentiscifolia
Fraxinus angustifolia oxycarpa
Fraxinus americana acuminata?
Gymnocladus dioicus (the ride)
Laburnum alpinum (bills path)

SECTION FIVE: DEVELOPMENT OF THE COLLECTION - BUSH AREA

Table 5.1 Species already in the bush area

Planted

Agathis australis
Coprosma australis
Cordyline australis
Dacrydium cupressinum
Griselinia littoralis
Knightia excelsa
Pittosporum crassifolium
Pittosporum eugenoides
Pittosporum sp
Podocarpus totara
Phyllocladus sp
Pseudopanax crassifolium
Nothofagus fusca
Nothofagus solandri
Schefflera sp
Sophora sp

Self-seeded species

Betula pendula
Celastrus sp
Coprosma sp
Cotoneaster sp
Cornus capitata
Leptospermum scoparium
Prunus campanulata
Prunus cerasifera 'Atropurpurea'
Pinus radiata
Salix sp.

Trees planted on the margins

Cedrus atlantica f. glauca
Fagus sylvatica
Quercus palustris
Fagus sylvatica 'Purpurea'
Taxodium distichium

Table 5.2 South American Flora already at Eastwoodhill

<i>Abutilon striatum</i> 'Thompsoni'	<i>Quillaja saponaria</i>
<i>Alnus jorulensis</i>	<i>Rhaphithamnus spinosus</i>
<i>Araucaria araucana</i>	<i>Schinus molle</i>
<i>Aristotelia chilensis</i>	<i>Schinus terebinthifolius</i>
<i>Austrocedrus chilensis</i>	<i>Solanum rantonetti</i>
<i>Azara integrifolia</i>	<i>Tibouchina semidecandra</i>
<i>Azara lanceolata</i>	<i>Tibouchina urvilleana</i>
<i>Azara microphylla</i>	
<i>Azara petiolaris</i>	MEXICO
<i>Azara serrata</i>	<i>Abies concolor</i> + 3
<i>Berberidopsis corallina</i>	<i>Abies religiosa</i>
<i>Berberis actinacantha</i>	<i>Acer negundo</i> var. <i>mexicana</i>
<i>Berberis darwinii</i>	<i>Beleoporone guttata</i>
<i>Berberis linearifolia</i>	<i>Beschorneria yuccoides</i>
<i>Bomarea caldesiana</i>	<i>Calliandra portoricensis</i>
<i>Bomarea multiflora</i>	<i>Cestrum elegans</i>
<i>Buddleia globosa</i>	<i>Cestrum aurantiacum</i>
<i>Calliandra tweedii</i>	<i>Choisya ternata</i>
<i>Cantua buxifolia</i>	<i>Crataegus mexicana</i>
<i>Cantua bicolor</i>	<i>Cupressus benthami</i> + 1
<i>Cissus striata</i>	<i>Cupressus lusitanica</i>
<i>Crinodendron hookerianum</i>	<i>Cyrilla racemiflora</i>
<i>Cupressus guadaloupeensis</i>	<i>Eupatorium ligustrifolia</i>
<i>Desfontanea spinosa</i>	<i>Garrya laurifolia</i> sp. <i>macrophylla</i>
<i>Doxantha unguis-cati</i>	<i>Juniperus flaccida</i>
<i>Duranta repens</i>	<i>Phaedranthus</i> sp
<i>Eccremocarpus scaber</i> + 1	<i>Philadelphus mexicana</i>
<i>Embothrium coccineum</i>	<i>Picea mexicana</i>
<i>Erythrina crsita-galli</i>	<i>Pinus ayachauite</i>
<i>Escallonia bifida</i>	<i>Pinus coulteri</i>
<i>Escallonia laevis</i>	<i>Pinus culminicola</i>
<i>Eucryphia cordifolia</i>	<i>Pinus durangensis</i>
<i>Feijoa</i> sp	<i>Pinus greggi</i>
<i>Lantana camara</i>	<i>Pinus jeffreyi</i>
<i>Lardizabala biternata</i>	<i>Pinus lambertiana</i>
<i>Lathyrus pubescens</i>	<i>Pinus lawsonii</i>
<i>Lomatia ferruginea</i>	<i>Pinus lumholtzii</i>
<i>Maytenus boaria</i>	<i>Pinus montezume</i>
<i>Myrtus lechlerana</i>	<i>Pinus nelsoni</i>
<i>Myrtus luma</i>	<i>Pinus oocarpa</i>
<i>Myrtus ugni</i>	<i>Pinus patula</i>
<i>Nothofagus alpina</i>	<i>Platanus mexicana</i>
<i>Nothofagus antartica</i>	<i>Prunus salicifolia</i>
<i>Nothofagus dombeyi</i>	<i>Quercus crassifolia</i>
<i>Nothofagus obliqua</i>	<i>Quercus mexicana</i>
<i>Passiflora antioquiensis</i>	<i>Quercus reticulata</i>
<i>Podocarpus andinus</i>	<i>Salvia mexicana</i>
<i>Podocarpus salignus</i>	

Table 5.3 New Zealand flora already at Eastwoodhill

<i>Agathis australis</i>	<i>Myrtus bullata</i>
<i>Alectryon excelsus</i>	<i>Myrtus obcordata</i>
<i>Beilschmiedia tarairi</i>	<i>Myrtus ralphi</i>
<i>Brachyglottis repanda</i>	<i>Nestigis cunninghamii</i>
<i>Carpodetus serratus</i>	<i>Nestigis montana</i>
<i>Clematis paniculata</i>	<i>Nothofagus fusca</i>
<i>Clianthus puniceus</i>	<i>Nothofagus menziesii</i>
<i>Coprosma</i> 'Rebecca'	<i>Nothofagus cliffortioides</i>
<i>Coprosma repens</i>	<i>Nothofagus solandri</i>
<i>Coprosma rhamnoides</i>	<i>Nothofagus truncata</i>
<i>Coprosma rigida</i>	<i>Olearia</i> , 2 spp.
<i>Coprosma robusta</i> + 1 cultivar	<i>Pennantia corymbosa</i>
<i>Cordyline australis</i> + 2 cultivars	<i>Phormium tenax</i> 2 cultivars
<i>Coriaria arborea</i>	<i>Phyllocladus alpinus</i>
<i>Corynocarpus laevigata</i>	<i>Phyllocladus glaucus</i>
<i>Cyathodes fasciculata</i>	<i>Phyllocladus trichomanoides</i>
<i>Dacrycarpus dacrydioides</i>	<i>Pittosporum colensoi</i>
<i>Dacrydium biforme</i>	<i>Pittosporum crassifolium</i>
<i>Dacrydium colensoi</i>	<i>Pittosporum dallii</i>
<i>Dacrydium cupressinum</i>	<i>Pittosporum eugenioides</i>
<i>Dodonaea viscosa</i>	<i>Pittosporum ralphii</i>
<i>Elaeocarpus hookerianus</i>	<i>Pittosporum tenuifolium</i>
<i>Griselinia littoralis</i>	<i>Podocarpus ferrugineus</i>
<i>Hebe cupressoides</i>	<i>Podocarpus hallii</i>
<i>Hebe speciosa</i>	<i>Podocarpus spicatus</i>
<i>Hebe stricta</i>	<i>Podocarpus totara</i> + 2 cultivars
<i>Hoheria populnea</i> + 2 cultivars	<i>Pomaderris apetela</i>
<i>Knightia excelsa</i>	<i>Pomaderris rugosa</i>
<i>Libocedrus decurrens</i>	<i>Pseudopanax arboreus</i>
<i>Libocedrus plumosa</i>	<i>Pseudopanax crassifolius</i>
<i>Metrosideros excelsa</i>	<i>Pseudopanax discolor</i>
<i>Metrosideros umbellata</i>	<i>Sophora microphylla</i>
<i>Myoporum laetum</i>	<i>Sophora tetraptera</i>
<i>Myrsine australis</i>	<i>Tecomanthe speciosa</i>

Table 5.4 Flora from South American - potential subjects for the area

Broadleaf			
<i>Abelia floribunda</i>	Shrub	Caprifoliaceae	Mexico
<i>Abutilon darwinii</i>	Shrub	Malvaceae	Brazil
<i>Abutilon megapotamicum</i>	Shrub	Malvaceae	Brazil
<i>Abutilon vitifolium</i>	Shrub	Malvaceae	Chile
<i>Allamanda cathartica</i>	Climber	Bignoniaceae	Brazil
<i>Aloysia triphylla</i>	Shrub	Verbenaceae	Chile, Argentina
<i>Amicia zygomeris</i>	Shrub	Fabaceae	Mexico

<i>Anemopaegma chamberkaynii</i>	Climber	Bignoniaceae	Brazil
<i>Araujia sericifera</i>	Climber	Asclepiadaceae	S.America
<i>Azara</i> sp	Trees	Flacourtiaceae	S.America
<i>Berberidopsis corallina</i>	Shrub	Flacourtiaceae	Chile
<i>Brunfelsia pauciflora</i>	Shrub	Solanaceae	Brazil
<i>Caesalpinia gilliesii</i>	Shrub	Fabaceae	Argentina
<i>Caldcluvia paniculata</i>	Tree	Cunoniaceae	Chile
<i>Calliandra tweedii</i>	Shrub	Fabaceae	Brazil
<i>Cantua</i> sp	Shrub	Polemoniaceae	Peru, Bolivia, Chile
<i>Cestrum</i> sp	Shrub	Solanaceae	subtropical S.America
<i>Chilopsis linearis</i>	Tree	Bignoniaceae	Mexico
<i>Choisya ternata</i>	Shrub	Rutaceae	Mexico
<i>Chorisia speciosa</i>	Tree	Bombaceae	Brazil
<i>Cleyera</i>	Shrub	Theaceae	Panama
<i>Clytostoma callistegioides</i>	Climber	Bignoniaceae	Brazil
<i>Crinodendron hookerianum</i>	Tree	Elaeocarpaceae	Chile
<i>Crinodendron patagua</i>	Tree	Elaeocarpaceae	Chile
<i>Desfontainea spinosa</i>	Shrub	Desfontainiaceae	Chile
<i>Drimys winteri</i>	Tree	Winteraceae	Chile
<i>Duranta plumeri</i>	Shrub	Verbenaceae	Mexico
<i>Ehretia</i> sp		Ehretiaceae	S.America
<i>Elytropus chilensis</i>	Climber	Apocynaceae	Chile, Argentina
<i>Embothrium</i> sp	Tree	Proteaceae	Chile
<i>Ercilla volubilis</i>	Climber	Phytolaceaea	Chile, Peru
<i>Erythrina americana</i>	Tree	Fabaceae	Mexico
<i>Erythrina corallodendron</i>	Tree	Fabaceae	Mexico
<i>Escallonia</i> all	Shrubs	Saxifragaceae	S.America
<i>Eucryphia cordifolia</i>	Tree	Eucryphiaceae	Chile
<i>Eucryphia glutinosa</i>	Tree	Eucryphiaceae	Chile
<i>Eugenia pungens</i>	Shrub	Myrtaceae	Brazil
<i>Fabiana imbricata</i>	Shrub	Solanaceae	Chile
<i>Fendlera wrightii</i>	Shrub	Philadelphaceae	Mexico
<i>Hydrangea serratifolia</i>	Shrub	Saxifragaceae	Chile, Argentina
<i>Jacaranda mimosiaefolia</i>	Tree	Fabaceae	Argentina
<i>Lapergeria rosea</i>	Climber	Philesiaceae	Chile
<i>Laurelia sempervirens</i>	Tree	Atherospermataceae	Chile, Argentina
<i>Lomatia ferruginea</i>	Tree	Proteaceae	Chile
<i>Lomatia dentata</i>	Tree	Proteaceae	Chile
<i>Lomatia hirsuta</i>	Tree	Proteaceae	Chile, Peru, Arg, Euc.
<i>Nothofagus betuloides</i>	Tree	Fagaceae	Chile
<i>Nothofagus nitida</i>	Tree	Fagaceae	Chile
<i>Nothofagus glauca</i>	Tree	Fagaceae	Chile
<i>Nothofagus procera</i>	Tree	Fagaceae	Chile
<i>Nothofagus dombeyi</i>	Tree	Fagaceae	Chile
<i>Nothofagus pumilo</i>	Shrub	Fagaceae	Chile
<i>Nothofagus leonii</i>	Tree	Fagaceae	Chile
<i>Petreaa volubilis</i>	Climber	Verbenaceae	Mexico, C.America
<i>Phaedranthus buccinatorus</i>	Climber	Bignoniaceae	Mexico
<i>Philesia magellanica</i>	Shrub	Philesiaceae	Chile
<i>Prunus salicifolia</i>	Tree	Rosaceae	Mexico, Peru

<i>Pyrostegia venusta</i>	Climber	Bignoniaceae	Brazil
<i>Quercus</i> sp	Tree	Fagaceae	Mexico
<i>Ribes gayanum</i>	Shrub	Saxifragaceae	Chile
<i>Russelia equisetiformis</i>	Shrub	Scrophulariaceae	Mexico
<i>Schinus</i> all	Tree	Anacardiaceae	Mex, Arg
<i>Sesbania punicea</i>	Shrub	Fabaceae	Brazil
<i>Solandra</i> all	Climbers	Solanaceae	Mexico
<i>Sophora macrocarpa</i>	Tree	Fabaceae	Chile
<i>Tibouchina</i> all	Shrub	Melastomataceae	Brazil
<i>Tipuana tipu</i>	Tree	Fabaceae	S America
<i>Weinmannia trichosperma</i>	Tree	Cunoniaceae	Chile
Conifers			
<i>Araucaria angustifolia</i>	Tree	Araucariaceae	Brazil, Arg
<i>Araucaria araucana</i>	Tree	Araucariaceae	Chile, Arg
<i>Austrocedrus chilensis</i>	Tree	Cupressaceae	Chile
<i>Dacrydium fonkii</i>	Shrub	Podocarpaceae	Chile
<i>Fitzroya cupressoides</i>	Tree	Cupressaceae	Chile
<i>Pilgerodendron uviferum</i>	Shrub	Cupressaceae	Chile
<i>Podocarpus andinus</i>	Shrub	Podocarpaceae	Chile
<i>Podocarpus cardenasii</i>	Tree	Podocarpaceae	Bolivia
<i>Podocarpus curvifolius</i>	Tree	Podocarpaceae	Chile
<i>Podocarpus glomeratus</i>	Tree	Podocarpaceae	Peru, Ecuador
<i>Podocarpus harmsicuus</i>	Tree	Podocarpaceae	Columbia, Ven
<i>Podocarpus lambertii</i>	Tree	Podocarpaceae	Brazil
<i>Podocarpus magnifolius</i>	Tree	Podocarpaceae	Brazil, Ven
<i>Podocarpus matudiai</i>	Tree	Podocarpaceae	Mexico
<i>Podocarpus montanus</i>	Tree	Podocarpaceae	Columbia, Ecuador
<i>Podocarpus nubigenus</i>	Tree	Podocarpaceae	Chile, Patagonia
<i>Podocarpus oleifolius</i>	Tree	Podocarpaceae	Mexico, Peru, Bol
<i>Podocarpus pendulifolius</i>	Tree	Podocarpaceae	Venezuela
<i>Podocarpus pittieri</i>	Tree	Podocarpaceae	Venezuela
<i>Podocarpus roraimae</i>	Tree	Podocarpaceae	Venezuela, Brazil
<i>Podocarpus rospigliosii</i>	Tree	Podocarpaceae	Venezuela
<i>Podocarpus salignus</i>	Tree	Podocarpaceae	Chile
<i>Podocarpus selloi</i>	Tree	Podocarpaceae	Brazil
<i>Podocarpus sprucei</i>	Tree	Podocarpaceae	Ecuador, Columbia
<i>Podocarpus tepuiensis</i>	Tree	Podocarpaceae	Venezuela
<i>Podocarpus utilior</i>	Tree	Podocarpaceae	Peru, Bolivia
<i>Saxegothea conspicua</i>	Shrub	Podocarpaceae	Chile

(Information from Krussman, 1984,1985)

APPENDIX: Rating scales used in field exercises

HEALTH

- 1 Unlikely to survive
- 2 Alive, poorly furnished, signs of stress, dying back
- 3 Fully furnished, signs of stress, not growing
- 4 Well furnished, healthy, no stress signs, growing slowly.
- 5 Well furnished, healthy, no stress signs, growing vigorously, .

AS AN EXAMPLE OF THE SPECIES

- 1 Not representative of the species, all factors unsatisfactory
- 2 Poor example of the species, three factors unsatisfactory
- 3 Identifiable example of the species, two factors unsatisfactory.
- 4 Good example of the species, only one factor unsatisfactory
- 5 Excellent, all factors good.

Factors

- health
- association with other trees
- form (shape)
- form (structure)

GROWTH PHASE

- 1 Senescent - not growing, declining canopy.
- 2 Mature - adult features, growth regenerative
- 3 Immature vigorous - adult features, growth vigorous
- 4 Juvenile vigorous - established, in rapid growth, juvenile features
- 5 Establishment - Plant still establishing, not yet growing

APPENDIX: List of Participants in the second workshop

Mr Bob Berry, Plantsman and Farmer, Hackfalls Arboretum, Gisborne.
Mr Spencer Bush, Arboretum Supervisor, Gisborne.
Mr Peter Cave, Nurseryman, Cambridge.
Professor David Chalmers, Professor of Horticultural Science, Massey University.
Mr Garry Clapperton, Curator, Eastwoodhill.
Mr Gordon Collier, Consultant and Plantsman, Taihape. (Surveys only)
Mr Rodney Faulkner, Farmer and Arboretum Trust Board, Gisborne.
Mr Ron Gordon, Farmer and Plantsman, Taihape.
Mr Michael Hudson, Plantsman and Farmer, Hawkes Bay.
Mr Allan Jellyman, Community Services Director, New Plymouth. (Surveys only)
Mrs Marion MacKay, Department of Horticultural Science, Massey University.
Mr Ian McKean, Farmer and Plantsman, Rangiwaehe.
Mr Paul Pollock, Nurseryman and Arboretum Trust Board, Gisborne.
Dr Bill Sykes, Botanist, D.S.I.R. Land Resources Division, Christchurch.

Report of the third workshop



Camellia 'C.H.Hovey', Cabin Park, September 1988.

**REPORT OF THE THIRD EASTWOODHILL ARBORETUM WORKSHOP:
ASPECTS OF COLLECTION DEVELOPMENT AND EXPANSION**

Held at Eastwoodhill on 16-17 March 1991

**Marion MacKay
Massey University, Palmerston North**

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Contents

SECTION ONE:	Issues.
SECTION TWO:	Development of the genus <i>Acer</i> at Eastwoodhill.
SECTION THREE:	Development of the new area.
SECTION FOUR:	Management plan for Orchard Hill.
SECTION FIVE:	Management plan for Basinhead.
SECTION SIX:	Conclusions.
APPENDIX ONE:	Programme.
APPENDIX TWO:	Tables referred to in the text.
APPENDIX THREE:	Rating scales used for field exercises.
APPENDIX FOUR:	List of participants.

Footnote: The workshop report in this thesis has been slightly modified from the original. Format has been modified slightly for this thesis. Content has been modified with respect to the plans of Orchard Hill and Basinhead, which have been removed in this version. The reader is referred to the same plans in thesis Appendix Two. Content has also been modified with the addition of the programme as an extra appendix.

Resume

In March 1991 the Eastwoodhill Plant Management Committee met for the third time to consider aspects of management and development of the collection of plants at the Eastwoodhill Arboretum. These deliberations are subsequent to the second workshop.

The genus *Acer* was given detailed consideration at this workshop. Preliminary surveys established the most important members of the genus at Eastwoodhill, field exercise and subsequent discussion resulted in the formulation of a strategy for the development of this genus at the Arboretum.

The management of Orchard Hill was carefully considered using park evaluation and decision making methods developed at previous workshops. The current plantings in the park were considered in light of the objectives for the park. Individual trees were assessed for a number of factors, the results being used as a planning basis for the park. A long term strategy for the park is proposed.

The Committee was introduced to the 150 acres of land which belongs to the Arboretum but which as yet is unplanted and requires development planning. Important character elements of the present Arboretum, and the principle of key genera, were examined with respect to development of this new area. A method for the formulation and implementation of development plans for this area was proposed.

Following on from an exercise initiated at the second workshop, the committee re-examined the Basinhead area. A full assessment of the area was carried out and the results used as a basis for a management proposal.

This workshop was conducted under the auspices of the Eastwoodhill Arboretum Trust Board.

SUMMARY OF RECOMMENDATIONS

Section One: Issues

- That the renovation of Birch Hill be undertaken in the manner described in section 1.2.5.
- That a landscape architect be appointed as part of the subgroup who are examining the new area.
- That the key genera list, as stated in the report of the second workshop, be reconfirmed.

Section Two: The genus *Acer*

- That the actions recommended from the *Acer* field exercise, as outlined in table 2.3.2, be implemented.
- That the genus *Acer* be developed according to the recommendations in section 2.5.

Section Three: New area development

- That the new area should be of compatible character to the present Arboretum.
- That the incorporation of all, or some, of the elements listed in table 3.3.1.1 into the new area will ensure that it has similar character to the present Arboretum.
- That the incorporation of the elements listed in table 3.3.1.2 is important to the successful development of the new area.
- That the principle of key genera be continued in any development of the new area. This should follow the guidelines described in section 3.3.2.
- That a method for site development be formulated based on the principles outlined in section 3.3.3.
- That the procedure for site development, as outlined in table 3.3.3.1 be implemented.
- That a subcommittee of Mr Clapperton, Mr Jellyman, and Mr Collier be charged with undertaking step one of the method in table 3.3.3.1, in time for consideration at the next workshop.

Section Four: Management of Orchard Hill

- That the development of Orchard Hill follow the themes outlined in section 4.3.
- That the general identity of Orchard Hill should be retained, i.e. spring blossom featuring *Malus*, *Prunus*, and *Magnolia*, with coniferous background of *Picea*, *Abies*, and *Pinus*.
- That the plan of action for Orchard Hill, as outlined in section 4.5.2, be implemented.
- That after recommended trees have been removed from the park, a reconsideration of the plantings should be done.
- That the renovated planting scheme should feature: (i) Spring display and autumn colour highlights, (ii) A range of high impact *Malus* and *Prunus* types, (iii) *Prunus* types that tend towards species rather than cultivars.
- That a proposal for reselected *Prunus* and *Malus* species be brought to the committee for consideration at its next meeting.

Section Five: Basinhead

- That the plan of action for Basinhead, as outlined in table 5.4.2, be implemented.
- That a plan for the redevelopment of Basinhead, which takes account of permanent and transitory elements, and spring display, be undertaken.

Section Six: Conclusion

- That the fourth workshop be held in March 1992.
- That the fourth workshop address issues such as suggested in section 6.2.

SECTION ONE: Issues**1.1 Aim**

To consider any issues relating to previous workshops, reports, and associated progress at the arboretum. Three issues that arose during the workshop are also reported here.

1.2 Issues discussed**1.2.1 Douglas Cook Centre for Education**

Mr Pollock reported on the development of the Douglas Cook Centre for Education. This study centre has been established at the Arboretum over the last year. Community fundraising by the Friends of Eastwoodhill has resulted in a fully funded and constructed centre which contains library, laboratory, herbarium, offices, kitchen, and public facilities. This successful development is exciting progress for the Arboretum. The committee visited the centre and inspected the facilities.

1.2.2 Student activities

Professor Chalmers reported on student activities at the Arboretum. The activities of Massey University students using the Arboretum for educational purposes was described. Mr Clapperton then outlined the activities of the Waikato polytechnic group.

1.2.3 Gondwana development

Mr Clapperton reported on the Gondwana development within the native planting area. Progress to date was outlined. So far the majority of the noxious weeds have largely been eliminated, sheep will now be used to keep the ground tidy. Some information on possible planting regimes for this area will be forthcoming from Mr B. Clarkson D.S.I.R., and a contact in MAF who has a collection of South American plants.

1.2.4 Progress in Pear Park

Mr Clapperton reported on the progress made in Pear Park with respect to the recommendations from last year's report. The committee visited the park and were acquainted with the developments. The Waikato polytechnic group had done much of the work as part of their annual exercises. The area of the old nursery site had been substantially cleaned out and much seedling material removed. Major work had been undertaken in the area of *Quercus ludoviciana* with trees targeted for removal now gone. The fence between this area and the sheep yards has been removed and a large branch removed from a red oak, substantially altering the appearance of this area.

1.2.5 Birch Hill

The question of the renovation of the Birch grove on Birch Hill was raised. The current species is *B. pubescens* which is not suited to the site and has done poorly. Many of the trees are in poor condition and the overall quality of the hill is in decline. On examination of the Hill it was agreed that Douglas Cook's intentions were quite clear, i.e. a planting of one species for trunk effect. It was also agreed that to achieve unity one clone should be selected and used for the whole Hill. After discussion it was agreed that the following procedure be followed:

1. Remove crowding trees immediately.
2. Replant the whole Hill when a suitable number of trees have been obtained.
3. Use a clone of a white bark birch; *B. papyrifera* is suggested.

4. The removal of the shoulder off the edge of Birch Hill, on the pond side, would draw attention to the space and make it more open.
5. The use of copper bark birch on the flat area on top would add interest.

It was agreed that more information on a suitable clone and its availability was needed. A number of species were considered for the site. *B.costata* has a good trunk but was considered too broad in its shape. *B.x fetisowii* was thought to be too upright. *B.pendula* is too short lived. *B.papyrifera* was considered suitable because it has a slim shape and a good trunk.

1.2.6 Landscape architect

The incorporation of a landscape architect into the workshop group was discussed, particularly with respect to the new area. It was agreed that a landscape architect should be appointed to the subgroup that is working on the new area development.

1.2.7 Key genera

The key genera list, as listed in the second workshop report, was reconfirmed.

Summary of recommendations:

That the renovation of Birch Hill be undertaken in the manner described in section 1.2.5.

That a landscape architect be appointed as part of the subgroup who are examining the new area.

That the key genera list be reconfirmed.

SECTION TWO: Development of the collection - The genus *Acer*

2.1 Aim

To consider in detail the genus *Acer* at Eastwoodhill and formulate a development plan for the genus within the collection.

2.2 Background information and field exercise

The background information for this exercise was considered (Appendix Tables 2.1-2.8). The current Eastwoodhill collection contains 131 species and cultivars of *Acer*. This represents about 6% of the total species and cultivars in the collection. In addition another 45 species and cultivars were purchased by Mr Cook, but are no longer in the collection (Appendix Table 2.6).

In the overall assessment of the collection *Acer* ranked 3rd in terms of overall importance, *Magnolia* and *Tetracentron* were higher. Of the key genera *Acer* falls into the highest bracket of importance with an Average score of 9.2. In terms of number of species and cultivars at Eastwoodhill *Acer* is the leading genus. As a representation of the genus Eastwoodhill holds about 51% of the species within the genus (77 species present in the Arboretum).

The information on extent of the genus in New Zealand was examined (Appendix Table 2.7). In fact there are very few types present in New Zealand that are not represented at Eastwoodhill. The only species in New Zealand but not at Eastwoodhill are *A.franchettii*, *A.ningapense*, *A.sieboldianum* var. *macrophyllum* and *A.tartaricum*. In addition there are three *A.platanoides* cultivars and two *A.pseudoplatanus* cultivars.

The information on the subgroups within the genus was examined. Table 2.2.1 illustrates the divisions of the genus. Eastwoodhill has species from nearly all groups. Bill Sykes reports that of those which Eastwoodhill does not have, 70% are Chinese and most of the others are of Russian origin.

The preliminary assessment results for the genus were then considered (Appendix Tables 2.1-2.4). It is notable that the majority of the plants which ranked highly are represented by only one example. Many of the important species are generally poorly represented throughout New Zealand.

A field exercise to assess the quality of the actual plants on site was undertaken. Species for consideration were those that ranked highly in one or both of the preliminary assessments. In the field exercise individual examples were rated for health and as an example of the species. Rating scales can be found in Appendix Three.

2.3 Results

The results of the field exercise were calculated and discussed. It was agreed that a health score below 3.5 was unacceptable, and an 'example of species' score below 3.0 was unacceptable. Taking these levels into account, the recommendations from the field exercise were made. Table 2.3.1 contains the preliminary and field results for the species considered.

Table 2.2.1 Divisions within the genus *Acer*

This information is from DeJong, P.C. 1990. Taxonomy and distribution of *Acer*. International Dendrology Society Yearbook, 1990, pp 6-10.

Distribution of *Acer*

	species	series	sections
C. & E. Asia	98 (96)	24 (18)	16 (6)
Europe, W. Asia, N. Afr.	12 (10)	4 (1)	3 (0)
N. & C. America	9 (9)	8 (4)	8 (0)
China	73 (43)	18 (1)	14 (0)
Japan	22 (14)	13 (3)	11 (1)
N. Hemisphere	117	28	16

I Section *Parviflora* KoidzumiSeries *Parviflora**Acer nipponicum* IlaraSeries *Distyla* Murray*Acer distylum* Sieb. & Zucc.Series *Caudata* Pax*Acer spicatum* Lam.*Acer caudatum* Wallich ssp. *caudatum**Acer caudatum* ssp. *ukurunduense*

(Trautv. & Meyer)

De Jong 1989 (Comb. nov.)

Acer caudatum ssp. *multiserratum* (Max.)

De Jong 1989 (Comb. nov.)

II Section *Palmata* PaxSeries *Palmata**Acer ceriferum* Rehd.*Acer circinatum* Pursh*Acer japonicum* Thunb.*Acer palmatum* Thunb. ssp. *palmatum**Acer palmatum* ssp. *amoenum* (Carr.)

Hara

Acer palmatum ssp. *matsumurae*

Koidzumi

Acer palmatum ssp. *pubescens* (Li) Murr.*Acer pauciflorum* Fang*Acer pseudosieboldianum* (Pax) Komarovssp. *pseudosieboldianum**Acer pseudosieboldianum* ssp. *takesimense*

(Nakai) De Jong 1988 (Comb. nov.)

Acer pubipalmatum Fang*Acer robustum* Pax*Acer shirasawanum* Koidzumi var.*shirasawanum**Acer shirasawanum* var. *tenuifolium*

Koidzumi

Acer sieboldianum MiquelSeries *Sinensia* Pojarkova*Acer calcaratum* Gagn.*Acer campbellii* Hook. f. & Thomson ssp.*campbellii**Acer campbellii* ssp. *flabellatum* (Rehd.)

Murr.

Acer campbellii ssp. *sinense* (Pax) De Jong

1988 (Comb. nov.)

Acer campbellii ssp. *wilsonii* (Rehd.) De

Jong 1988 (Comb. nov.)

Acer chapaense Gagnepain*Acer confertifolium* Merrill & Metcalf*Acer elegantulum* Fang & Chiu*Acer erianthum* Schwerin*Acer fenzlianum* Hand.-Mazz.*Acer kuomeii* Fang & Fang f.*Acer linganense* Fang & Chiu*Acer mapiniense* Fang*Acer olivaceum* Fang & Chiu*Acer oliverianum* Pax ss. *oliverianum**Acer oliverianum* ssp. *formosanum*

(Koidz.) Murr.

Acer schneiderianum Pax & Hoffm.*Acer shangzeense* Fang & Soong*Acer sichouense* Fang & Fang f.*Acer taipuiense* Fang*Acer tonkinense* Lecomte*Acer titcheri* Duthie*Acer wuyunaense* Fang & Wu*Acer yaoshanicum* FangSeries *Penninervia* Metcalf*Acer cordatum* Pax*Acer crassum* Hu & Cheng*Acer eucalyptoides* Fang & Wu*Acer fabri* Hance*Acer hainanense* Chun & Fang*Acer laevigatum* Wall.*Acer lucidum* Metcalf*Acer oligocarpum* Fang & Hu*Acer sino-oblongum* Metcalf*Acer yunkunii* FangIII Section *Wardiana* De Jong*Acer wardii* W. W. SmithIV Section *Macrantha* Pax*Acer capillipes* Maxim.*Acer caudatifolium* Ilay.*Acer crataegifolium* Sieb. & Zucc.*Acer davidii* Franch. ssp. *davidii**Acer davidii* ssp. *grosseri* (Pax) De Jong

1988 (Comb. nov.)

Acer laisuense Fang & Hu*Acer micranthum* Sieb. & Zucc.*Acer morifolium* Koidzumi*Acer pectinatum* Wall. ssp. *pectinatum**Acer pectinatum* ssp. *forrestii* (Diels)

Murr.

Acer pectinatum ssp. *laxiflorum* (Pax)

Murr.

Acer pectinatum ssp. *maximowiczii* (Pax)

Murr.

Acer pectinatum ssp. *taronense* (Hand.-

Mazz.) Murr.

Acer pennsylvanicum L.*Acer rubescens* Ilay.*Acer rufinerve* Sieb. & Zucc.*Acer sikkimense* Miquel ssp. *sikkimense**Acer sikkimense* ssp. *metcalfi* (Rehd.) De

Jong 1988 (Comb. nov.)

Acer tegmentosum Maxim.*Acer tschonoskii* Maxim. ssp. *tschonoskii**Acer tschonoskii* ssp. *koreanum* Murr.V Section *Glabra* PaxSeries *Glabra**Acer glabrum* Torrey ssp. *glabrum**Acer glabrum* ssp. *diffusum* (Greene)

Murr.

Acer glabrum ssp. *douglasii* (Hooker)

Wesmael

Acer glabrum ssp. *neomexicanum* (Greene)

Murr.

Acer glabrum ssp. *siskiyouense* Murr.Series *Arguta* Rehd.*Acer acuminatum* Wall. ex Don*Acer argutum* Maxim.*Acer barbinerve* Maxim.*Acer stachyophyllum* Hiern ssp.*stachyophyllum**Acer stachyophyllum* ssp. *betulifolium*

(Maxim.) De Jong 1988 (Comb. nov.)

VI Section *Negundo* Maxim.Series *Negundo* Maxim.*Acer negundo* L. ssp. *negundo**Acer negundo* ssp. *borcale* Murr.*Acer negundo* ssp. *californicum* (Torr. &

Gray) Wesm.

Acer negundo ssp. *interius* (Britton) A. &

D. Loeve

Acer negundo ssp. *mexicanum* (DC)

Wesm.

Series *Cissifolia* (Koidz.) Pojarkova*Acer cissifolium* (Sieb. & Zucc.) Koch*Acer henryi* Pax

Table 2.2.1 continued

VII Section <i>Indivisa</i> Pax <i>Acer carpiniifolium</i> Sieb. & Zucc.	IX Section <i>Pentaphylla</i> (Hu & Cheng) De Jong Series <i>Pentaphylla</i>	XII Section <i>Platanioidea</i> Pax. <i>Acer campestre</i> L. ssp. <i>campestre</i> <i>Acer campestre</i> ssp. <i>leiocarpon</i> (Wallr.) Pax
VIII Section <i>Acer</i> Series <i>Acer</i>	<i>Acer pentaphyllum</i> Diels	<i>Acer campestre</i> ssp. <i>mariscum</i> (Guss.) Hayek
<i>Acer caesium</i> Wall. ex. Brandis ssp. <i>caesium</i> <i>Acer caesium</i> ssp. <i>giraldii</i> (Pax) Murr. <i>Acer heldreichii</i> Boiss ssp. <i>heldreichii</i> <i>Acer heldreichii</i> ssp. <i>trautvetteri</i> (Medv.) Murr. <i>Acer pseudoplatanus</i> L. <i>Acer velutinum</i> Boiss.	Series <i>Trifida</i> Pax <i>Acer buergerianum</i> Miquel ssp. <i>buergerianum</i> <i>Acer buergerianum</i> ssp. <i>formosanum</i> (Hayata) Murr. & Lauener <i>Acer buergerianum</i> ssp. <i>ningpoense</i> (Hance) Murr. <i>Acer coriaceifolium</i> Levl. <i>Acer discolor</i> Maxim. <i>Acer fengii</i> Murr. <i>Acer oblongum</i> Wall. ex DC <i>Acer paxii</i> Franch.	<i>Acer cappadocicum</i> Gled. ssp. <i>cappadocicum</i> <i>Acer cappadocicum</i> ssp. <i>divergens</i> (Pax) Murr. <i>Acer cappadocicum</i> ssp. <i>lobelii</i> (ten.) De Jong 1988 (Comb. nov.) <i>Acer cappadocicum</i> var. <i>tricaudatum</i> (Rehd.) Rehd.
Series <i>Monspessulana</i> Pojarkova	<i>Acer coriaceifolium</i> Levl. <i>Acer discolor</i> Maxim. <i>Acer fengii</i> Murr. <i>Acer oblongum</i> Wall. ex DC <i>Acer paxii</i> Franch. <i>Acer shihwaensis</i> Chun & Fang <i>Acer sycopseoides</i> Chun <i>Acer wangchii</i> Fang, ssp. <i>wangchii</i> <i>Acer wangchii</i> ssp. <i>tsinyunense</i> Fang <i>Acer yuii</i> Fang	<i>Acer cappadocicum</i> ssp. <i>sinicum</i> (Rehd.) Hand.-Mazz. <i>Acer longipes</i> Franch ssp. <i>longipes</i> <i>Acer longipes</i> ssp. <i>amplum</i> (Rehd.) De Jong 1988 (Comb. nov.) <i>Acer longipes</i> ssp. <i>catalpisifolium</i> (Rehd.) De Jong 1988 (Comb. nov.) <i>Acer longipes</i> ssp. <i>firmanoides</i> (Cheng ex Fang) De Jong 1986 (Comb. nov.) <i>Acer miyabei</i> Maxim ssp. <i>miyabei</i> <i>Acer miyabei</i> ssp. <i>miyabeiense</i> (Tsoong) Murr.
<i>Acer hyrcanum</i> Fisch. & Meyer ssp. <i>hyrcanum</i> <i>Acer hyrcanum</i> ssp. <i>intermedium</i> Bornm. <i>Acer hyrcanum</i> ssp. <i>keckianum</i> (Pax) Yaltirik <i>Acer hyrcanum</i> ssp. <i>reginae-amaliae</i> (Orph. & Boiss.) De Jong 1988 (Comb. nov.)	X Section <i>Trifoliata</i> Pax Series <i>Grisea</i> Pojark	<i>Acer mono</i> Maxim. ssp. <i>mono</i> <i>Acer mono</i> ssp. <i>ambiguum</i> (Pax) Rehd. <i>Acer mono</i> var. <i>mayrii</i> (Schwer.) Nakai <i>Acer mono</i> ssp. <i>okamotoanum</i> (Nakai) De Jong 1988 (Comb. nov.)
<i>Acer hyrcanum</i> ssp. <i>sphaerocarpum</i> Yalt. <i>Acer hyrcanum</i> ssp. <i>stevanii</i> (Pojark.) Murr. <i>Acer hyrcanum</i> ssp. <i>tauricum</i> (Boiss. & Balansa) Yaltirik <i>Acer monspessulanum</i> L. ssp. <i>monspessulanum</i> <i>Acer monspessulanum</i> ssp. <i>assyriacum</i> (Pojark.) Rech.	Series <i>Grisea</i> Pojark <i>Acer griseum</i> (Franch.) Pax <i>Acer maximowiczianum</i> Miq. <i>Acer sutchuenense</i> Franch. <i>Acer triflorum</i> Kum.	<i>Acer mayongense</i> Fang <i>Acer platanoides</i> L. ssp. <i>platanoides</i> <i>Acer platanoides</i> ssp. <i>turkestanicum</i> (Pax) De Jong 1988 (Comb. nov.) <i>Acer tenellum</i> Pax <i>Acer tibetense</i> Fang <i>Acer truncatum</i> Bunge
<i>Acer monspessulanum</i> ssp. <i>cinerascens</i> (Boiss.) Yalt. <i>Acer monspessulanum</i> ssp. <i>microphyllum</i> (Boiss.) Bornm. <i>Acer monspessulanum</i> ssp. <i>oksalianum</i> Yaltirik <i>Acer monspessulanum</i> ssp. <i>persicum</i> (Pojark.) Rech. <i>Acer monspessulanum</i> ssp. <i>turcomanicum</i> (Pojark.) Murr. <i>Acer obtusifolium</i> Sibth. & Smith <i>Acer opalus</i> Miller ssp. <i>opalus</i> <i>Acer opalus</i> ssp. <i>hispanicum</i> (Pourt.) Murr. <i>Acer opalus</i> ssp. <i>obtusatum</i> (Willd.) Gams <i>Acer sempervirens</i> L.	Series <i>Mandschurica</i> Pojark. <i>Acer mandschuricum</i> Maxim.	XIII Section <i>Pubescentia</i> De Jong 1986 <i>Acer pentapomicum</i> Stew. ex Brandis <i>Acer pilosum</i> Maxim.
Series <i>Saccharodendron</i> (Ref.) Murr. <i>Acer saccharum</i> Marsh. ssp. <i>saccharum</i> <i>Acer saccharum</i> ssp. <i>floridanum</i> (Chapm.) Desm. <i>Acer saccharum</i> ssp. <i>grandidentatum</i> (Torr. & Gray) Desm. <i>Acer saccharum</i> ssp. <i>leucoderme</i> (Small) Desm. <i>Acer saccharum</i> ssp. <i>nigrum</i> (Michx f.) Desm. <i>Acer saccharum</i> ssp. <i>ozarkense</i> Murr. <i>Acer saccharum</i> var. <i>rugelii</i> (Pax) Rehd. <i>Acer saccharum</i> var. <i>schneckii</i> Rehd. <i>Acer saccharum</i> var. <i>sinuosum</i> (Rehd.) Sarg. <i>Acer saccharum</i> ssp. <i>skuthii</i> (Rehd.) Murr.	XI Section <i>Lithocarpa</i> Pax Series <i>Lithocarpa</i> <i>Acer diabolicum</i> Blume ex Koch <i>Acer sinopurpureum</i> Cheng <i>Acer sterculiaceum</i> Wall. ssp. <i>sterculiaceum</i> <i>Acer sterculiaceum</i> ssp. <i>franchetii</i> (Pax) Murr. <i>Acer sterculiaceum</i> ssp. <i>thomsonii</i> (Miq.) Murr.	XIV Section <i>Ginnala</i> Nakai <i>Acer tataricum</i> L. ssp. <i>tataricum</i> <i>Acer tataricum</i> ssp. <i>aidzuense</i> (Franch.) De Jong 1988 (Comb. nov.) <i>Acer tataricum</i> ssp. <i>ginnala</i> (Maxim.) Wesm. <i>Acer tataricum</i> ssp. <i>semenovii</i> (Reg. & Herd.) Pax
Series <i>Saccharodendron</i> (Ref.) Murr. <i>Acer saccharum</i> Marsh. ssp. <i>saccharum</i> <i>Acer saccharum</i> ssp. <i>floridanum</i> (Chapm.) Desm. <i>Acer saccharum</i> ssp. <i>grandidentatum</i> (Torr. & Gray) Desm. <i>Acer saccharum</i> ssp. <i>leucoderme</i> (Small) Desm. <i>Acer saccharum</i> ssp. <i>nigrum</i> (Michx f.) Desm. <i>Acer saccharum</i> ssp. <i>ozarkense</i> Murr. <i>Acer saccharum</i> var. <i>rugelii</i> (Pax) Rehd. <i>Acer saccharum</i> var. <i>schneckii</i> Rehd. <i>Acer saccharum</i> var. <i>sinuosum</i> (Rehd.) Sarg. <i>Acer saccharum</i> ssp. <i>skuthii</i> (Rehd.) Murr.	Series <i>Macrophylla</i> Pojark. <i>Acer macrophyllum</i> Pursh	XV Section <i>Rubra</i> Pax <i>Acer pycnanthum</i> Koch <i>Acer rubrum</i> L. <i>Acer saccharinum</i> L.
Series <i>Saccharodendron</i> (Ref.) Murr. <i>Acer saccharum</i> Marsh. ssp. <i>saccharum</i> <i>Acer saccharum</i> ssp. <i>floridanum</i> (Chapm.) Desm. <i>Acer saccharum</i> ssp. <i>grandidentatum</i> (Torr. & Gray) Desm. <i>Acer saccharum</i> ssp. <i>leucoderme</i> (Small) Desm. <i>Acer saccharum</i> ssp. <i>nigrum</i> (Michx f.) Desm. <i>Acer saccharum</i> ssp. <i>ozarkense</i> Murr. <i>Acer saccharum</i> var. <i>rugelii</i> (Pax) Rehd. <i>Acer saccharum</i> var. <i>schneckii</i> Rehd. <i>Acer saccharum</i> var. <i>sinuosum</i> (Rehd.) Sarg. <i>Acer saccharum</i> ssp. <i>skuthii</i> (Rehd.) Murr.	XVI Section <i>Hyptiocarpa</i> Fang <i>Acer garrettii</i> Craib <i>Acer laurinum</i> Hasskarl	XVI Section <i>Hyptiocarpa</i> Fang <i>Acer garrettii</i> Craib <i>Acer laurinum</i> Hasskarl

Table 2.3.1: Preliminary and field assessments for selected members of the genus *Acer*

Species	Reference	Preliminary assessment				Field assessment			Action status
		Botanic score	Aesthetic Score	Average score	Rank for Average score	Health	Example of species	Average of field scores	
<i>A. macrophyllum</i>	BHill Pond	8.5	7.8	8.1	33=	4.3	3.5	3.9	Okay
<i>A. pseudosieboldianum</i>	BHill Pond	9.4	9.4	9.4	1	2.9	3.2	3.1	Action
<i>A. fargesii</i>	Blackwater	8.7	7.8	8.3	26=	3.6	3.4	3.5	Okay
<i>A. sterculiaceum</i>	Blackwater	9.0	8.0	8.5	16=	2.8	2.6	2.7	Action
<i>A. x zoeschense</i>	Blackwater	6.6	6.7	9.1	4=	4.6	4.4	4.5	Excell.
<i>A. nikoense</i> (upper)	Birch Hill	8.7	9.2	9.0	9=	3.6	3.6	3.6	Okay
<i>A. nikoense</i> (lower)	Birch Hill	8.7	9.2	9.0	9=	3.3	3.7	3.5	Action
<i>A. campbelli</i>	Circus	8.5	7.9	8.2	26=	3.2	3.5	3.4	Action
<i>A. cappadocicum ssp. lobelii</i>	Circus	8.2	7.6	7.9	48=	4.5	4.0	4.3	Excell.
<i>A. carpinifolium</i>	Circus	8.4	8.1	8.3	26=	2.9	2.6	2.8	Action
<i>A. grosseri var. hersii</i>	Circus	7.9	8.3	8.1	33=	3.7	3.2	3.5	Okay
<i>A. henryi</i>	Circus	8.7	9.0	8.9	11	4.6	4.0	4.3	Excell.
<i>A. hookeri</i>	Circus	8.2	8.8	8.5	18=	4.1	3.6	3.9	Okay
<i>A. platanoides</i> 'Palmatifidum'	Circus	5.7	8.4	7.1	90=	4.3	3.9	4.1	Excell.
<i>A. plat.</i> 'Goldsworth Purple'	Circus	6.0	8.9	7.4	74=	4.7	4.1	4.4	Excell.
<i>A. rufinerve f. albolimbatum</i>	Circus	6.7	9.0	7.8	48=	3.8	3.8	3.8	Okay
<i>A. saccharinum</i> 'Fastigiatum'	Circus	5.3	7.7	6.5	110=	4.8	3.4	4.1	Excell.
<i>A. velutinum var. vanvolxemi</i>	Circus	5.8	7.2	6.5	110=	4.1	3.4	3.8	Okay
<i>A. diabolicum</i>	Circus crnr	8.8	7.8	8.3	26=	2.8	2.5	2.7	Action
<i>A. miyabei</i>	Circus crnr	8.4	7.1	7.8	53=	3.8	3.5	3.7	Okay
<i>A. rubrum</i>	Circus crnr	7.5	8.2	7.8	48=	4.3	3.8	4.1	Excell.
<i>A. saccharum ssp. nigrum</i>	Circus crnr	7.8	7.0	7.4	74=	4.2	3.5	3.9	Okay
<i>A. buergerianum</i>	Priestleys	6.6	7.5	7.1	90=	4.2	4.3	4.3	Excell.
<i>A. saccharum</i>	Corner P.	8.0	7.9	8.0	42=	2.7	2.7	2.7	Action
<i>A. circinatum</i>	Pear Park	7.4	7.9	7.7	63=	3.3	2.6	2.9	Action
<i>A. diabolicum f. purpurescens</i>	Pear Park	8.0	8.5	8.3	26=	4.1	3.5	3.8	Okay
<i>A. monspessulanum</i>	Pear Park	7.2	6.1	6.7	107=	4.3	3.2	3.8	Okay
<i>A. rubrum</i> 'Brilliant'	Pear Park	6.4	9.0	7.7	53=	4.3	4.4	4.4	Excell.
<i>A. sacharum</i> Arnold Arb.form	Pear Park	8.0	8.7	8.3	21=	4.8	5.0	4.9	Excell.
<i>A. wilsoni</i>	Pear Park	8.1	7.8	8.0	42=	4.0	4.0	4.0	Excell.

Table 2.3.2: Acer field exercise - Recommendations

A. macrophyllum All scores acceptable. No action necessary.

A. pseudosieboldianum This was the highest rated of the maples in the initial assessment, however the actual specimen is not particularly notable. The growth is not marked and the tree appears to be suffering from borer. The health rating is below the acceptable level. This example also seems to be the only one of its type in the country so it is important that it should be propagated. The tree will need to be propagated from itself, preferably grafted onto its own seedlings and then several trees planted out.

A. fargesii This tree has suffered serious suppression and dieback due to insect attack. Several limbs have been ringbarked and have died about the point of attack, however strong new growths have occurred and the tree is capable of making good recovery if appropriately managed. The tree should be dead wooded again and then reshaped from the new vigorous growths.

A. sterculiaceum Both health and example scores are below the acceptable level. This tree urgently needs propagating and replanting onto a wetter site. It is particularly sensitive to dry and drops its leaves during dry periods. This tree also has some propagation difficulties and should be tried on *A. macrophyllum* as stock. Propagation should also be done from the tree at Hackfalls and the two types of material planted together.

A x zoeschense The tree is spindly and unthrifty. Both field scores are below the acceptable level. Other examples should be obtained and planted into other sites.

A. griseum All scores acceptable. No action necessary.

A. nikoense There are two trees at the site near Birch Hill. The lower tree, nearer the stream, has an unacceptable health level and requires some action. Both trees should be left. The surrounding trees should be trimmed to give better light to these two maples. Specifically the Rhododendrons should be pruned back and the apples tidied up. The Japanese maples should be selectively pruned away from the Nikko maples. The maple grouping was favoured ahead of the Rhododendrons for this area. The birches on the other side of the track should be thinned to give the maples more room and light. These maples are small for their age, probably due to the poor pumice soil on the site.

A. campbellii The identity of this tree is debatable as it does not fit all the characteristics expected of the type. No fruits are produced and it could possibly be a hybrid. Material should be sent to van Gelderen for identification. Health is below par and some action is necessary. It has been propagated by Peter Cave but is very weak.

A. cappadocicum ssp. lobelii An excellent example. No action necessary.

.....continued

A. carpinifolium This tree is not growing well as it likes a wetter site. At present both field scores are below the acceptable level. This tree has been seriously suppressed by a conifer behind it which has since been removed. Subsequent to the removal of the suppressing tree this acer is recovering strongly. It should be tidied up. New seed material of Chinese origin has been supplied by Peter Cave.

A. grosseri var. hersi Field scores acceptable. No action necessary.

A. henryi Field scores acceptable. No action necessary.

A. hookeri This tree is quite crowded at the back and is suffering from some dieback and poor branches within the crown. At the same time, however, it is making strong recovery growth and therefore achieves a good health score. The dieback and twiggy branches should be removed. The crowding Rowan should be removed.

A. platanoides 'Palmatifidum' An excellent example. No action needed.

A. platanoides 'Goldsworth Purple' An excellent example. No action needed.

A. saccharinum 'Fastigiatum' An excellent example. No action needed.

A. velutinum var. vanvolxemi Both ratings satisfactory. No action needed.

A. diabolicum Both ratings unacceptable. This tree is rather crowded and appears in poor condition. However a *Cornus* has been removed which was strongly impinging on this tree and therefore the tree may make some improvement in the future. The tree should be tidied up and retained until another example is established.

A. miyabei Both ratings satisfactory. No action needed.

A. rubrum Excellent example. No action needed.

A. saccharum ssp. nigrum Both ratings satisfactory. No action needed.

A. buergerianum Excellent example. No action needed.

A. saccharum. This tree is in poor condition with both field ratings below par. Although this tree is more important than the surrounding *Liquidamber*, which are quite healthy, it was felt that the *Liquidamber* should be retained and some action taken on the *Acer*. Wild source seed should be obtained and the species replanted. This particular genetic source should be retained by propagating from this tree as well. The specimen examined should be removed once a new plant is established.

....continued

A. circinatum Although this tree is growing in a situation that might be considered typical for its type, the specific tree is not a good example of the species. Both ratings are below acceptable levels. The surrounding *Buddleia* should be rejuvenated to allow more light into the maple, and a branch lifted on the overtopping *Quercus mongolica*. In addition new wild source material should be obtained, it is readily available in the wild and it is not difficult to import seed. New Zealand material has a much more lobed leaf than this example and it is likely that the New Zealand types are hybrids with *A. palmatum*, this material should therefore be avoided.

A. diabolicum f. purpurescens Both ratings were satisfactory for this tree. There is a difficulty in the propagation of this species in that there is no suitable rootstock for grafting. It was suggested that *A. macrophyllum* might be tried as this is in the same series.

A. monspessulanum Both ratings acceptable. No action needed.

A. rubrum 'Brilliant' Excellent example. No action needed.

A. saccharum (Arnold Arboretum form) Excellent example. No action needed.

A. wilsoni Both ratings good. No action needed.

2.5 Development plan for the genus *Acer* at Eastwoodhill

The general discussion will be presented as a development plan.

Recommendations on the current collection.

- Types originally imported should be retained where possible. If a tree is declining then propagation should be carried out.
- Those special to Eastwoodhill, or rare in New Zealand, should be represented by more than one example.

Recommendation on the criteria for acquisition.

- Using the same criteria as were established for *Magnolia*; the policy should follow the following guidelines:
 - Concentrate on species. Try everything. If a species will not grow, then a herbarium specimen should be kept.
 - There is an obligation to hold unusual types for reference and educational purposes.
 - Any plant acquisition should pay attention to good form, climatic range, climatic suitability, site selection.

Recommendation of the acquisition of actual species and expansion of the genus.

- Those species that are in New Zealand should be obtained. Efforts should be made to ensure that obtained material is true to type. Seed grown material should be approached with caution as hybrids are very likely. Preferably material should be vegetatively propagated from true stock. If seed material is obtained then herbarium material should also be obtained for verification purposes.

- Any other species that become available should be obtained. The expedition to China later this year may make some new species available to New Zealand and Eastwoodhill. A list of the species not at Eastwoodhill should be forwarded to those on the China expedition.
- Wild source seed material should be obtained where possible.
- Where wild source seed is obtained several trees should ultimately be planted so that a true seed source can be generated. It is likely that wild source seed will become more difficult to obtain in the future so the development of a New Zealand seed source is useful. If this device is used then closely related species should be separated to try and avoid hybridization.

Recommendation on growth and siting of maples.

- Generally moister sites should be chosen for *Acer*. The area at the base of the new pinetum may be suitable for its richer and moister soil.
- Clay based soils should be chosen for *Acer* plantings. Some species such as *A.nikoense* and *A.griseum* are very poor on the pumice soils, and as a general observation the maples do not like the pumice soils. It is possible that the difficulties on pumice soils are fertility problems.
- Species that do not do well at Eastwoodhill should be repeated at Hackfalls to take advantage of the cooler climate.
- The incorporation of a shade canopy may be an advantage for many plantings. For example, the snakebarks in the Circus may improve if a tall canopy is planted on the sunny side. Equally the *Acer* on IDS ridge may benefit from a tall canopy.
- *Acer* as a genus seems to be environmentally sensitive for the Gisborne area. Most maples come from areas of moist summers. Information should be developed on those which will tolerate dry, moist, cool conditions etc.
- Climatic suitability must be the most important siting criterion. More data is needed on habitat.

2.6 Conclusions

There are some difficulties associated with the culture of the genus *Acer* at Eastwoodhill. This relates mostly to environmental sensitivity. Field results show that, even though some species are sensitive, others have performed very well. Careful siting, and further research into habitat and tolerances can overcome many of these problems.

Summary of recommendations:

That the actions recommended from the *Acer* field exercise, as outlined in table 2.3.2, be implemented.

That the genus *Acer* be developed according to the recommendations in section 2.5

SECTION THREE: Development of the collection - the next 150 acres**3.1 Aim**

To develop a general philosophy and objectives for the development of the unplanted land at the Arboretum.

3.2 Background information and site visit

The background information was reviewed (Appendix Tables 3.1-3.5). First, the objectives for the Arboretum, as stated by Douglas Cook, were examined. Although Mr Cook never implicitly stated objectives, his writing contains statements that outline his intentions, (Appendix Table 3.1). Further to this information, the objectives as set out in the previous workshops were considered, (Appendix Table 3.2).

Next, the important physical characteristics were considered. The nature of the landscape elements that border the new area were listed, (Appendix Table 3.4). Generally there is a notable portion of coniferous material along the boundaries of the existing Arboretum, with some mixed deciduous elements.

After the initial briefing a site visit was made. {Readers of this thesis refer to Figure 1.4 in Volume I.} Mr Clapperton explained developments to date. Some planting has been done on the unstable slope which slipped in 1985, a DSIR poplar trial has been used to stabilise this ground (Wickham Hill). Adjacent and above the poplars is a planting of *Cupressus lusitanica* which will hold the hard dry slope behind. Because of the steepness of the site a pattern of planting was proposed. On the upper portions of the slopes, where it is too steep for easy pedestrian access, the coniferous backdrop plantings would be installed. Once the upper land is stabilised then deciduous highlights can be interplanted. The lower slopes would then be used for 'arboretum' planting. {The poplar trial is visible in the top left of Figure 5.1 in Volume I.}

It was proposed that the method described above be used on the western slopes and the central basin and slopes. The far 50 acres (Big Hill) must be treated differently. This area poses a considerable problem because the whole area is moving. A DSIR proposal for stabilisation of this ground should be received shortly. The priority for this area is deep stabilisation which must be achieved before any arboretum planting can be carried out.

A small area of remnant native vegetation was pointed out {Centre top of Figure 5.1 in Volume I}. It is planned that this area be left to regenerate into the vegetation of the area. This will be an asset to the region as there are very few places where local lowland vegetation is accessible to the public. It will also be of scientific interest.

The climatic features of the site were outlined. The basin is generally sheltered and shady. The western areas are windy.

3.3 Discussion

Following the site visit the development of the new area was debated at some length. Clearly any development will have to consider aspect, soil type, and slope and relate planting to those factors. There are, however, a number of issues that must be resolved before planting can be considered. These are the

development of the character of the site, the continuation of key genera, and the formulation of a method through which details of site development can be addressed. Each of these is considered below.

3.3.1 Aspects of arboretum character

In the current Arboretum there are a number of elements that give it a particular character.

In the first instance the principle of compatibility must be discussed. Should the new area have the same character as the present Arboretum, or should it be of quite different character? If the new planting is to blend in with the existing Arboretum, then it is important that these character elements be repeated in the new area. On the other hand if contrast is desirable then quite different elements would be used. After discussion it was agreed that the character should be similar in both areas.

Recommendation: That the new area should be of compatible character to the present Arboretum

If this principle is to be employed the elements that make up that character must be determined so that they may be utilised in the new plantings. Group discussion identified the following elements as being important in the present Arboretum.

Table 3.3.1.1 Character elements important in the present Arboretum

- | |
|--|
| <ul style="list-style-type: none"> ● Repeated evergreen elements, e.g. <i>Cedrus atlantica</i>, <i>Magnolia grandiflora</i>, <i>Magnolia delavayi</i> ● Conifer backdrop with deciduous highlights. ● Conifers on ridgetops. ● Varying concentration of conifers in each park. ● Features of particular evergreen plantings in some areas, e.g. the patula pines, pencil cypress. ● Backbone of red oaks. ● 'Forests' such as the beech wood, Black forest, the oak wood, and the maple forest. ● Planting groups with high impact, e.g. <i>Magnolia</i> and <i>Malus</i>, colourful plantings around the lakes. ● Specific special elements, such as the daffodil patch and miniature conifers. ● Open space areas such as the daffodil patch, the creation of small flat areas. ● Loosely clustered genera plantings, e.g. <i>Tilia</i>, <i>Ilex</i>, <i>Abies</i>, <i>Picea</i>, contrasted with other spread plantings. ● Occasional symmetrical elements within the park, e.g. fountain, shallos. ● Presence of lakes in valley bottoms. ● Lookout points and high tracks. ● Tracks which follow contour rather than cut across contour. |
|--|

Recommendation: That the incorporation of all, or some, of the elements listed in table 3.3.1.1 into the new area will ensure that it has similar character to the present Arboretum.

Having derived this list, discussion was held on the elements that were most desirable for the new area. The following were determined to be the factors most needed in the new area, stated in order of highest vote.

Table 3.3.1.2 Character elements that should be given priority in the development of the new area.

- Vistas and open space.
- Conifer backbone.
- Genera plantings.
- Demonstration areas where plant material for various uses can be grown, e.g. shelter trees, specimen trees, use of unusual species for woodlots, trees suitable for the district etc.
- 'Forests'.
- Red oak and cedar backbone.
- Theme elements.

Recommendation: That the incorporation of the elements listed in table 3.3.1.2 is important to the successful development of the new area.

It is important that the distinction between the two lists above is noted. The first list gives a range of elements that could, and probably should, be employed to give the new area a similar look to the old area. The second list gives those elements that must be given careful consideration in the development of any plan for the new area, as these elements are seen as either lacking in the present Arboretum and/or important to successful development of the new area.

3.3.2 Key genera

The important issue here is whether or not the principle of key genera should be continued in the new area. If so, which key genera are most appropriate to develop. If not, then what other genera should be used.

Some discussion ensued. It was considered that there might be some pressure to deviate from the principle of key genera. First, there will be large quantities of new material coming into New Zealand from seed collecting expeditions and the interest in new material may not be compatible with the key genera principle. Second, it was felt that demonstration areas should not be constrained by the necessity of using key genera. However after some discussion it was agreed that the key genera should be continued.

Recommendation: That the principle of key genera be continued in any development of the new area.

Each genus was then considered individually and the following points made:

- | | |
|-----------------|---|
| <i>Acer</i> | It is feasible to extend this genus, seed is readily available. |
| <i>Alnus</i> | This genus should be extended. |
| <i>Aesculus</i> | This genus should be extended. |
| <i>Betula</i> | This genus should be extended. |
| <i>Camellia</i> | This genus can be expanded but it can not be expected that all types can be collected. Many are too tropical for this area and would not be suitable. This genus could be extended quite soon as the material is available. |
| <i>Cedrus</i> | Continue with this genus. |

<i>Crataegus</i>	This is a very large genus and most would grow here. It is not feasible to collect all though, so outstanding examples only should be acquired. Eastwoodhill is on the warmer end of the <i>Crataegus</i> range. This is an important small tree genus, which can fill an important visual role in the arboretum.
<i>Cupressus</i>	This genus should be extended, all species should be sought.
<i>Fagus</i>	This genus should be extended, all species should be sought.
<i>Ilex</i>	Many of this genus are tropical and will not grow here, so we could not expect to acquire any large portion of the genus.
<i>Juniperus</i>	This genus should be continued, but better sites chosen.
<i>Malus</i>	Continue with this genus.
<i>Magnolia</i>	This genus should be extended. <i>Magnolia</i> relatives should be acquired.
<i>Pinus</i>	Continue with this genus.
<i>Populus</i>	Continue with this genus.
<i>Prunus</i>	This genus is very difficult to import to New Zealand because of quarantine restrictions, it is therefore not feasible to extend this genus beyond what can be obtained in NZ.
<i>Quercus</i>	Continue with this genus.
<i>Tilia</i>	Continue with this genus.

Recommendation: That the key genera be continued into the new area in the manner described in section 3.3.2.

3.3.3 The formulation of a method for site development.

The committee discussed at length the mechanisms for site development. Mr Jellyman suggested that the brief that directed site development should show shelter planting, space definition, access, water features, and key spaces. It was not necessary to show specific planting sites. Essentially the main structure of the site must be correctly developed, and then the development of detail will follow.

It was agreed that a method must be formulated for site development. The method should:

1. Ensure that main structure and concepts are developed first, thus broad areas are defined.
2. Develop detail only after broad areas have been defined, then each subarea can be considered in detail. This step should consider the components and capabilities of each area, and look at habitat opportunities.
3. Utilise the combined skills of the committee to provide input into the planning of site development.

Recommendation: That a method for site development be formulated based on the principles outlined in section 3.3.3.

Recognising that such a procedure is desirable, it was proposed that the method outlined in Table 3.3.3.1 be followed. This method has a number of advantages. It sets broad guidelines for the whole area, and then more particular guidelines for each subarea. At the same time it does not constrain the curator by producing detail down to the planting location of a particular tree, neither does it constrain activities by having to wait for committee input before a particular tree can be planted.

Using this method means that a number of possibilities for each area can be explored, and the options fully discussed by the expert group. Group input should ensure that the best possible solution is reached and

justified. The guidelines developed will allow progress to be made in the periods between committee workshops.

Recommendation: That the procedure for site development, as outlined in table 3.3.3.1 be implemented.

Recommendation: That a subcommittee of Mr Clapperton, Mr Jellyman, and Mr Collier be charged with undertaking step one of the method in table 3.3.3.1, in time for consideration at the next workshop.

Table 3.3.3.1 Method for site development for the new area

Concept development#	Step	Committee inputs*
(i) Assessment of whole area. (ii) Identify a number of concepts for each subarea. (iii) Identify plant list for each concept, (categorise into dominant, understorey, focal).	1	
	2	(i) Examine area in question. (ii) Select concept. (iii) Evaluate planting proposal. (iv) Select plants to be used (dominant, theme, understorey). (v) Identify action plan for planting.
(i) Implement selected plan. (ii) Identify any issues.	3	(iii) Discuss and resolve.
Implementation.	4	

Concept development stages to be done by a subcommittee of Mr Clapperton, Mr Jellyman, and Mr Collier.

* Full committee input during workshop sessions.

3.4 Conclusion

The development of the new area is an exciting but complex part of Arboretum development. To ensure that the activities undertaken always make a positive contribution to that development it is suggested that the recommendations outlined below be followed.

Summary of recommendations:

That the new area should be of compatible character to the present arboretum.

That the incorporation of all, or some, of the elements listed in table 3.3.1.1 into the new area will ensure that it has similar character to the present arboretum.

That the incorporation of the elements listed in table 3.3.1.2 is important to the successful development of the new area.

That the principle of key genera be continued in any development of the new area. This should follow the guidelines described in section 3.3.2.

That a method for site development be formulated based on the principles outlined in section 3.3.3.

That the procedure for site development, as outlined in table 3.3.3.1 be implemented.

That a subcommittee of Mr Clapperton, Mr Jellyman, and Mr Collier be charged with undertaking step one of the method in table 3.3.3.1, in time for consideration at the next workshop.

SECTION FOUR: Park Management for Orchard Hill

4.1 Aim

The aim of this section was to develop a management strategy for Orchard Hill.

4.2 Description

Orchard Hill is on the eastern side of the arboretum facing Hihiroa Road. It is on a steep eastern facing slope with a basin at the bottom. The highest point within the Arboretum is at the top of the hill. The difficulties of terrain and the current state of the planting mean that the park is little visited, however there is some significant plant material on the site. Similarly, because Orchard Hill is the interface between the present Arboretum and the new area, the importance of this park will increase as the new area of the Arboretum is developed.

At approximately 5ha Orchard Hill is a relatively small park within the Arboretum. It is accessed from the main walk to Douglas Park and has three main walking tracks cut into the hill face. The ground is unstable in places and has slipped a number of times, Orchard Hill is not conducive to pedestrian access unless tracks are formed. The site is cool and shaded compared with the rest of the arboretum as it receives only morning sun. The soil is very poor where the underlying rock is close to the surface, however, there are some areas of rich soils. The soils of the hill have been modified by slipping action.

The coolness and part shade of the site influenced Mr Cook to plant cool loving species there, e.g. *Ilex*, *Picea* and *Abies*. Planting on Orchard Hill began in the late 1950s. The current planting includes the main sites of Spruce, Fir and Pine within the Arboretum. *Malus*, *Prunus* and *Magnolia* are present in some concentration. The lower basin is presently not planted although it was the original site of Mr Cook's orchard and cherry plantings.

Plants currently in the park are illustrated by the park plans, sheets 16-17 of the arboretum set, and by the part plans A-D attached to this report. {Plans A-D are not included in this version of the report. Readers of this thesis should refer to the plans in thesis Appendix Two.} Plants that have been in the park, but which are no longer present are outlined in Appendix Table 4.8.

Because of the large number of *Malus* and *Prunus* on Orchard Hill, a large portion of the planting is reaching the end of its useful life. On the other hand, there are many trees which will continue to be viable for many years. As with other parts of the Arboretum, much of the planting is crowded. To ensure that the park as a whole is viable in the long term, management planning must be undertaken.

4.3 Objectives and theme for Orchard Hill

First, the reader is reminded of the relevant objectives for the Arboretum, as resolved at the first workshop: 'The theme of the Arboretum was that of temperate and warm temperate flora, focussing on the key genera plant groups that have already been identified', and that the role of the Arboretum is: 'To maintain and further the collection of Douglas Cook.'

With these objectives in mind the case of Orchard Hill can be examined. The manuscript 'Hollies at Eastwoodhill' (Appendix Table 4.1) illustrates that Douglas Cook had a number of objectives for this park. Mr Cook saw this park as a suitable site for *Magnolia*, *Ilex*, *Picea*, *Abies*, and *Pinus*. He intended that it should be formed with an evergreen background high on the Hill, interspersed with seasonal highlights such as *Prunus campanulata* and *Eucalyptus ficifolia*. *Abies*, *Picea* and *Pinus* were incorporated into the evergreen background, while *Ilex* and *Magnolia* were part of the 'arboretum' plantings on the lower part of the slope.

Much of Cook's intended outcome is apparent in Orchard Hill today. The following are important to the theme of this park:

1. Structurally, the evergreen background with seasonal highlights, and 'arboretum' plantings below is characteristic of this park.
2. Visually the element of spring display is important in this park.
3. The park is the key site for *Abies*, *Picea* and *Pinus* collections, which form an important element of the evergreen belt.
4. The bulk of the *Ilex* collection for the whole arboretum is found here.
5. The park is a suitable site for *Magnolia*.
6. Orchard Hill holds a large portion of the *Malus* and *Prunus* collections at the arboretum, these contributing significantly to the spring display.

Recommendation: That the development of Orchard Hill should follow the themes outlined in section 4.3.

4.4 Park evaluation - method

To evaluate the park the following procedure was followed:

1. Consideration of the current composition of the park and the background information relating to that composition.
2. Definition of permanent and transitory elements.
3. Field exercise.
4. Discussion of results and development of consensus on park management.

Background information

The composition of plant material on Orchard Hill was examined. The list of current plant material can be seen in Table 4.5.1, with the list of additional plants that were previously on the Hill found in Appendix Table 4.8.

Examination of these lists shows that 14 out of 19 key genera are represented on Orchard Hill. This park is an important site in the Arboretum for *Ilex* (47% on OH), *Pinus* (28% on OH), *Prunus* (19% on OH), and *Fagus* (17% on OH).

The distribution of other genera on Orchard Hill was considered. Orchard Hill is an important site for *Abies* (37% on OH), *Berberis* (42% on OH), and *Picea* (35% on OH). These figures clearly reflect Douglas Cook's intentions as stated in the previously mentioned manuscript.

The genera existing in greatest number today are *Prunus*, *Pinus*, *Abies*, and *Ilex*, (in descending order). Referring to the information on previous plantings, and rates of survival, (Appendix Tables 4.8,4.9) shows that *Magnolia*, *Acer*, *Abies* and *Euonymus* once existed in greater numbers than are present today.

The ratings of the plants on Orchard Hill for botanical and aesthetic merit were considered (Appendix Tables 4.2-4.6). It is notable that the highest ranking plants included a number of *Picea*, *Abies*, and *Magnolia*, this pattern is repeated for botanical score. Of the 25 highest rating plants overall, only 8 were key genera. This trend is repeated for botanical score, suggesting that key genera are not the most important group in this park. When aesthetic score is considered the pattern changes as the *Prunus* assume high positions and, being a key genus, do not continue the previous trend.

Permanent and transitory elements

Permanent elements are described as those that, when in an acceptable situation, are sufficiently long lived to be considered permanent. Transitory elements are described as those that are not long lived and will require regular replacement in relation to the permanent elements.

The discussion at the second workshop highlights the importance of the definition of permanent and transitory elements.

‘The definition of elements in this way allows the manager to distinguish those that will need regular attention and replacement from those that will not need such replacement. It is desirable that the framework of the park be formed from permanent elements, thus the framework of the park is always retained and is not disturbed by the need to recycle short lived material. The definition of the genera in this way does not necessarily mean that any will be removed from the park, it simply means that the transitional groups will need more intensive management to keep them at their best at all times.’

With respect to Orchard Hill a plan of the park was examined and the pattern of permanent (long lived) plantings was highlighted. The permanent elements were agreed to be: *Abies*, *Acer*, *Castanea*, *Fagus*, *Fraxinus*, *Juniperus*, *Magnolia*, *Picea*, *Pinus*, *Pseudotsuga*, *Quercus*. The transitory elements were agreed to be: *Crataegus*, *Ilex*, *Malus*, *Prunus*, and all other genera.

Generally the pattern shows that most of the upper plantings are of a permanent nature, while the majority of those on the lower slope are transitory (short lived).

Field exercise

Having considered the background information the trees were examined in the field. For each tree information on botanical and aesthetic score, height index, and number of individuals at Eastwoodhill was provided. The group then assessed each tree according to health, example of species, and contribution to scene. The rating scales for each of these indices is found in Appendix Three.

4.5 Park evaluation - Results

The results of the field exercise are reported in table 4.5.1. The overall results of the park evaluation can be found in table 4.5.2 and shown in areas A-F, which should be referred to concurrently. {Areas A-F are indicated on page 726, detail can be seen in plans in thesis Appendix Two}.

The consensus of the committee was that if a plant rated below 3.0 for field scores, then it should be removed, unless its botanical rating required that it be retained. A score of 4 or 5 is satisfactory. Field ratings have been summed and then an action category for each plant indicated. Field scores have been converted to a mark out of 10 for analysis. Using the levels just indicated the total scores were treated as follows:

- (i) average of field scores less than 2.0 (4.0) - urgent action required.
(ii) average of field scores less than 3.0 (6.0) - action required in 0-5 years.
(iii) average of field scores 3.0 to 4.0 (6.0-8.0)- okay, no immediate action required.
(iv) average of field scores 4.0 (8.0) or more - tree excellent, no action required.

Table 4.5.1: Results sheet for field exercise

The Hollies and Abies: Area A

Plant	Ref. no.	Preliminary assessment					Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Height index	Status at EWH	Health	Example of species	Scene	Field average	
<i>Magnolia veitchii</i>	OH652	-	5.2	7.8	1.5	1/3	4.3	3.5	4.1	3.9	Okay
<i>Poliiothyrus sinensis</i>	OH617	8=	9.0	8.0	3.0	1/5	4.6	4.7	4.4	4.6	Exc.
<i>Malus</i>	OH618	-	-	-	-	1/1	4.2	4.0	3.2	3.8	Okay
<i>Broussonetia papyrifera</i>	OH653	36=	8.2	7.0	2.0	1/1	3.0	-	1.0	2.0	Urgent
<i>Ilex corallina</i>	OH620	36=	7.2	8.0	3.0	1/2	4.8	4.0	4.5	4.4	Exc.
<i>Ilex cornuta</i>	OH621	-	6.2	6.2	5.0	1/3	4.0	2.7	2.2	2.9	Action
<i>Ilex 622</i>	OH622	-	-	-	-	1/1	2.8	2.3	1.7	2.3	Action
<i>Ilex wilsoni</i>	OH630	-	-	-	-	1/1	4.7	2.7	2.9	3.4	Okay
<i>Ilex casine</i>	OH623	-	7.4	6.0	3.0	1/2	3.7	2.5	2.5	2.9	Action
<i>Ilex fargesii</i>	OH624	68=	6.8	7.2	4.0	1/2	3.6	3.2	2.5	3.1	Okay
<i>Ilex 625</i>	OH625	-	-	-	-	1/1	4.5	4.2	3.7	4.1	Exc.
<i>Ilex platyphylla</i>	OH626	40=	7.6	7.4	5.0	1/1	4.3	4.3	4.0	4.2	Exc.
<i>Ilex insignis</i>	OH627	17=	8.0	8.2	4.0	1/1	3.7	2.7	3.1	3.2	Okay
<i>Ilex latifolia</i>	OH628	40=	7.6	7.4	2.0	1/1	2.6	2.5	2.4	2.5	Action
<i>Abies concolor</i>	OH632	40=	7.1	8.0	2.5	1/6	(3.1)	-	(3.3)	(3.2)	Okay
<i>Glochidion sp.</i>	OH629	-	8.4	5.4	-	1/1	3.0	-	2.0	2.5	Action
<i>Abies cephalonica</i>	OH631	-	7.4	6.4	3.0	1/1	(3.9)	-	(3.7)	(3.8)	Okay
<i>Abies bracteata</i>	OH637	31=	8.0	7.4	2.5	1/1	(4.9)	-	(4.9)	(4.9)	Exc.
<i>Abies firma</i>	OH636	40=	7.1	7.8	1.5	1/2	(3.6)	-	(3.7)	(3.7)	Okay
<i>Abies concolor</i> 'Glauca'	OH635	21=	8.0	8.0	2.5	1/1	(4.2)	-	(4.4)	(4.3)	Exc.
<i>Abies veitchii</i>	OH634	10=	8.0	8.8	2.0	1/1	(4.6)	-	(4.3)	(4.5)	Exc.
<i>Abies 633</i>	OH633	-	-	-	-	1/1	(0.4)	-	(0.5)	(0.5)	Urgent
<i>Abies holophylla</i>	OH668	21=	9.2	7.0	2.0	1/1	(4.7)	-	(4.3)	(4.5)	Exc.
<i>Abies amabilis</i>	OH667	21=	8.0	7.8	1.0	1/1	(1.5)	-	(1.3)	(1.4)	Urgent
<i>Abies numidica</i>	OH669	59=	8.0	6.4	1.5	1/1	(1.0)	-	(0.8)	(0.9)	Urgent
<i>Abies concolor</i>	OH670	40=	7.1	8.0	2.5	2/6	(3.0)	-	(3.2)	(3.1)	Okay
<i>Abies spect. var. brevifolia</i>	OH671	14=	8.0	8.5	0.5	1/1	(2.0)	-	(2.2)	(2.1)	Action
<i>Abies georgii</i>	OH672	68=	8.0	6.0	1.5	1/1	(1.9)	-	(2.1)	(2.0)	Action

() indicates a score from workshop one.

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Table 4.5.1 continued

Picea group: Area B

Plant	Ref. no.	Preliminary assessment					Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Height index	Status at EWH	Health	Example of species	Scene	Field average	
<i>Picea obovata</i>	OH640	17=	9.6	6.4	1.0	1/1	(1.0)	-	(1.5)	(1.3)	Urgent
<i>Picea bicolor</i>	OH642	40=	9.0	6.0	1.0	1/1	(3.4)	-	(3.3)	(3.4)	Okay
<i>Picea brachytyla</i>	OH639	53=	7.4	7.2	2.5	1/1	(3.2)	-	(3.2)	(3.2)	Okay
<i>P. compl. f. latisquamea</i>	OH644	21=	9.0	7.0	-	1/1	(4.7)	-	(4.6)	(4.7)	Exc.
<i>Picea wilsoni</i>	OH646	-	8.0	6.6	1.5	1/1	(1.7)	-	(1.9)	(1.8)	Urgent
<i>Cupressus duclouxiana</i>	OH663	66=	7.4	6.8	3.0	1/1	-	-	-	-	-
<i>Juglans cinerea</i>	OH707	-	6.6	6.2	3.0	1/1	-	-	-	-	-
<i>Picea morrisonicola</i>	OH643	14=	9.0	7.4	1.5	1/1	(4.1)	-	(4.4)	(4.3)	Exc.
<i>Picea sitchensis</i>	OH673	-	6.0	6.0	1.0	1/2	-	-	-	-	-
<i>Picea spinulosa</i>	OH645	10=	8.0	8.8	1.0	1/2	(3.1)	-	(3.3)	(3.2)	Okay

() indicates a score from workshop one

Notes on *Picea* and *Abies* component as assessed at workshop one.

Decisions at that time were:

1. Urgent.

- Remove OH633
- Obtain new stock of *Abies amabilis*.
- Retain *Abies numidica*
- Remove *Abies wilsoni*.
- Propagate *Picea obovata*.

2. Action

- Obtain new stock of *Abies spectabilis* var. *brevifolia*.
- Obtain new stock of *Abies georgiana*.

3. Other

- Remove the Douglas Fir from above *Picea bicolor*.
- Remove the pine above *Picea morrisonicola*.
- Remove the Douglas Fir in association with *Picea spinulosa*
- Remove the smaller *Picea sutchuenensis*.

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Table 4.5.1...contd

The Pines: Area C

Plant	Ref. no.	Preliminary assessment					Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Height index	Status at EWH	Health	Example of species	Scene	Field average	
<i>Rhamnus californica</i>	OH575	-	6.0	5.2	5.0	1/1	-	-	-	-	-
<i>Picea koyami</i>	OH674	10=	9.4	7.4	3.0	1/1	(3.6)	-	(3.5)	(3.6)	Okay
<i>Pinus rigida</i>	OH584	-	7.0	6.2	3.0	1/1	4.5	3.7	4.5	4.2	Exc.
<i>Picea orientalis</i>	OH576	31=	7.4	8.0	2.0	1/2	(4.8)	-	(4.8)	(4.8)	Exc.
<i>Pinus tab. yunnanensis</i>	OH676	53=	7.4	7.2	3.0	1/1	4.2	3.0	3.5	3.6	Okay
<i>Pinus sylv. f. argentea</i>	OH675	-	6.6	6.8	-	1/1	3.6	2.3	3.0	2.9	Action
<i>Juniperus</i> 'Blaauw'		-	5.0	5.8	-	1/1	-	-	-	-	-
<i>Juniperus</i> 'Meyeri'		-	5.0	6.4	-	1/1	-	-	-	-	-
<i>Pin. mon. var. uncinata</i>		53=	7.6	6.8	1.0	1/1	1.0	0.8	0.7	0.8	Urgent
<i>Juniperus chinensis</i>		-	5.6	5.6	-	1/many	-	-	-	-	-
<i>J. chin.</i> 'Pyramidalis'	OH664	-	5.2	5.8	-	1/many	-	-	-	-	-
<i>Pinus canariensis</i>	OH579	49=	7.2	7.6	3.0	1/2	4.0	3.0	4.1	3.7	Okay
<i>Pinus jeffreyi</i>	OH578	66=	6.8	7.4	3.0	1/1	3.3	2.5	3.4	3.1	Okay
<i>Pinus tabuliformis</i>	OH577	59=	7.6	6.8	3.0	1/1	3.8	2.5	2.9	3.1	Okay
<i>Pinus nigra var. caram.</i>	OH600	-	7.6	5.6	1.5	1/1	3.5	2.3	2.2	2.7	Action
<i>Pinus nigra var. corsic.</i>	OH503	-	6.0	5.8	1.5	1/1	3.3	2.3	2.9	2.8	Action
<i>Pinus densiflora</i>	OH504	-	7.2	6.2	3.0	1/1	2.7	2.3	2.3	2.4	Action
<i>Pin. den. umbraculifera</i>	OH502	49=	7.2	7.6	5.0	1/1	3.0	2.7	2.4	2.7	Action
<i>Pinus parviflora</i>	OH505	31=	8.0	7.4	3.0	1/1	3.0	2.7	2.5	2.7	Action
<i>Pinus halepensis</i>	OH501	-	6.6	6.2	3.5	1/2	4.3	3.5	4.2	4.0	Exc.
<i>Pinus koraiensis</i>	OH580	59=	7.6	6.8	-	1/1	-	-	-	-	-

() indicates a score from workshop one

.....continued

Table 4.5.1 continued

Far end below track: Area D

Plant	Ref. no.	Preliminary assessment					Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Height index	Status at EWH	Health	Example of species	Scene	Field average	
<i>Pinus koraiensis</i>	OH580	59=	7.6	6.8	-	1/1	-	-	-	-	-
<i>Gleditsia japonica</i>	OH591	-	6.8	5.8	1.5	1/2	4.7	3.5	3.8	4.0	Exc.
<i>Ligustrum lucidum</i>	OH586	-	4.8	5.8	1.5	1/2	4.2	2.3	2.3	2.9	Action
<i>Ligustrum sinensis</i>	OH585	-	5.4	5.8	2.0	1/2	4.3	2.3	2.0	2.9	Action
<i>Ligustrum confusum</i>	OH592	-	6.6	5.6	2.0	1/1	4.5	3.3	3.0	3.6	Okay
<i>Gleditsia triacanthos</i>	OH595	-	6.2	6.8	3.0	1/many	4.8	4.3	4.2	4.4	Exc.
<i>Ginkgo biloba</i>		17=	7.8	8.4	-	1/7	4.5	3.5	2.2	3.4	Okay
<i>Cham. laws.</i> 'Naberi'	OH662	-	4.0	5.2	1.0	1/1	1.2	0.5	0.7	0.8	Urgent
<i>Pistachia chinensis</i>	OH500	40=	7.0	8.0	1.5	1/many	3.2	2.5	3.3	3.0	Okay
<i>Bet. platy. var. japonica</i>	OH677	27=	7.4	8.2	3.0	1/1	4.0	2.7	4.3	3.7	Okay
<i>Aesculus hip.</i> 'Pumilum'	OH573	-	6.4	5.0	-	1/1	3.0	2.0	1.6	2.2	Action
<i>Pistachia chinensis</i>	OH678	40=	7.0	8.0	1.5	1/many	4.0	3.2	2.6	3.3	Okay
<i>Crataegus punctata</i>	OH601	-	5.2	5.4	2.5	1/1	3.0	-	3.0	3.0	Okay
<i>Crat. oxy.</i> 'Puniceus'	OH598	-	5.2	6.6	5.0	1/2	3.0	-	3.0	3.0	Okay
<i>Crat. oxy.</i> 'Fructo Lutea'		-	5.2	5.8	3.5	1/1	3.0	-	3.0	3.0	Okay
<i>Crataegus missouriensis</i>	OH602	-	5.6	6.0	3.0	1/2	2.7	2.0	1.3	2.0	Action
<i>Photinia beauverdiana</i>	OH679	-	6.8	7.2	3.5	1/4	3.8	3.3	3.3	3.5	Okay
<i>Quercus baetica</i>	OH680	68=	7.6	6.4	2.5	1/1	4.2	4.3	4.2	4.2	Exc.
<i>Berberis hypokerina</i>	OH603	-	6.2	6.4	-	1/1	4.0	-	4.0	4.0	Exc.
<i>Berberis 604</i>	OH604	-	-	-	-	1/1	3.0	-	3.0	3.0	Okay
<i>Phot. villosa var. laevis</i>	OH606	68=	7.0	6.4	4.0	1/1	2.8	2.7	1.9	2.5	Action
<i>Cham. laws.</i> 'Wislizanii'	OH681	-	-	-	-	1/?	3.7	3.3	3.8	3.6	Okay
<i>Picea</i>	OH682	-	-	-	-	1/?	2.0	1.5	1.0	1.5	Urgent
<i>Juniperus</i> 'Meyeri'		-	-	-	-	1/many	2.4	1.8	1.6	1.9	Urgent
<i>Metas. glyptostroboides</i>		4=	9.0	9.2	-	1/2	3.0	1.5	1.3	1.9	Urgent
<i>Quercus cocc. splendens</i>		26=	7.0	8.8	3.0	1/4	5.0	5.0	4.8	4.9	Exc.
<i>Berberis sargentiana</i>	OH608	-	6.0	6.2	3.5	1/1	4.0	2.0	2.0	2.7	Action
<i>Berberis panlanensis</i>	OH609	-	5.6	4.4	5.0	1/1	4.0	2.0	2.0	2.7	Action

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Table 4.5.1...contd

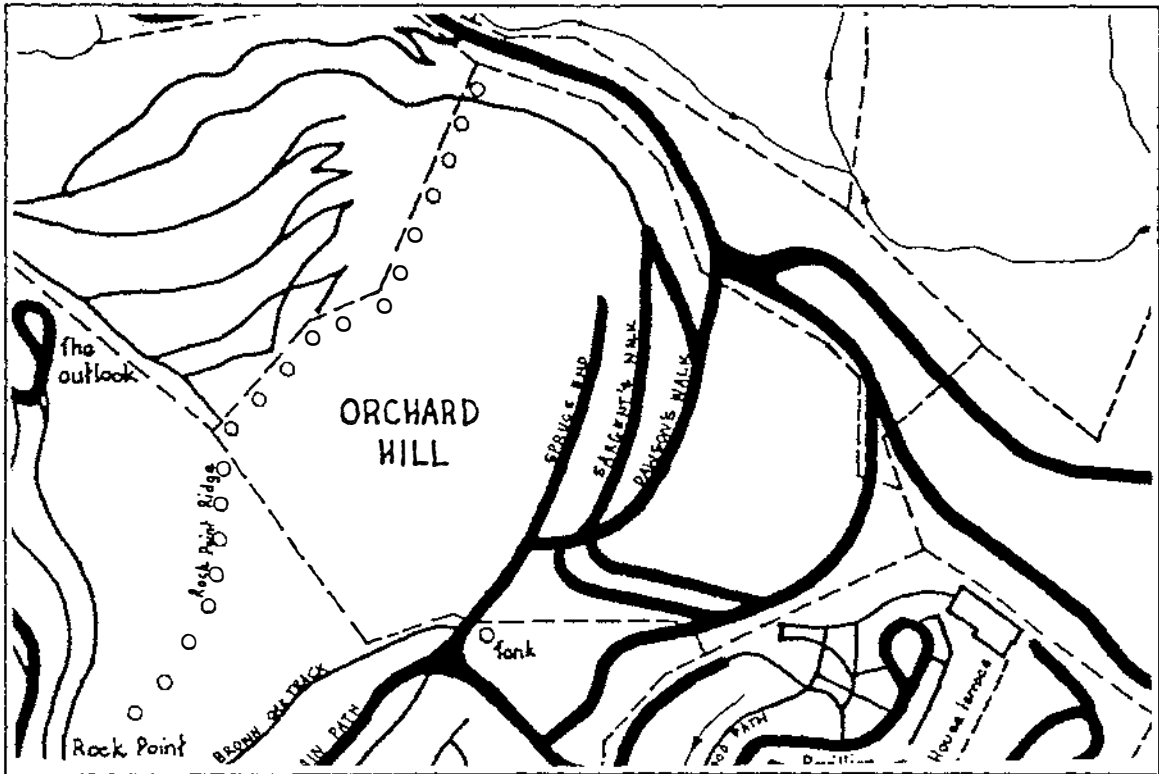
Between the tracks - lower: Area E

Plant	Ref. no.	Preliminary assessment					Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Height index	Status at EWH	Health	Example of species	Scene	Field average	
<i>Fagus sylv.</i> 'Rohanni'	OH572	68=	6.2	7.8	-	1/2	5.0	4.0	4.5	4.5	Exc.
<i>A.ruf.f.albolimbatum</i>	OH569	21=	7.0	9.0	-	1/2	4.0	3.5	3.7	3.7	Okay
<i>Pr.serr.</i> 'Hisakura'	OH683	-	5.2	7.2	3.0	1/many	2.3	2.0	2.1	2.1	Action
<i>Fagus lucida</i>	OH570	49=	7.8	7.0	3.5	1/1	3.5	2.3	2.5	2.7	Action
<i>Carpinus japonica</i>	OH571	27=	7.8	7.8	3.0	1/2	4.0	3.7	3.5	3.7	Okay
<i>Magnolia kobus</i>	OH649	-	6.4	7.2	3.5	1/many	3.8	2.7	2.7	3.1	Okay
<i>Pr.serr.</i> 'Hisakura'	OH684	-	5.2	7.2	3.0	1/many	3.6	3.0	3.3	3.3	Okay
<i>Lardizabala biternata</i>	OH648	49=	9.0	5.8	-	1/1	4.2	4.3	3.0	3.8	Okay
<i>Dichot. tristaniicarpa</i>	OH647	53=	9.0	5.6	2.0	1/1	2.8	1.3	1.2	1.8	Urgent
<i>Fagus grandifolia</i>	OH567	27=	8.2	7.4	1.0	1/1	2.2	1.5	1.9	1.9	Urgent
<i>Prunus sargentiana</i>	OH541	14=	7.4	9.0	1.0	1/?	3.0	3.5	3.2	3.2	Okay
<i>Mag.sarg. var.robusta</i>	OH568	3	8.6	9.8	4.0	1/1	3.8	4.0	4.9	4.2	Exc.
<i>Distylum racemosum</i>	OH563	40=	8.8	6.2	1.5	1/1	3.5	4.0	2.8	3.4	Okay
<i>Azara integrifolia</i>	OH650	-	6.4	6.0	3.0	1/1	2.7	2.7	2.1	2.5	Action
<i>Pr.serr.</i> 'Hisakura'	OH685	-	5.2	7.2	3.0	1/many	3.2	3.0	3.8	3.3	Okay
<i>Photinia</i> 'Robusta'	OH561	-	6.0	7.6	-	1/1	4.3	3.5	4.1	4.0	Exc.
<i>Euonymus tingens</i>	OH564	-	7.2	6.6	4.5	1/1	4.2	4.3	4.3	4.3	Exc.
<i>Symplocos paniculata</i>	OH562	27=	8.8	6.8	5.0	1/1	-	-	-	-	-
<i>Malus</i>	OH533	-	-	-	-	1/?	-	-	-	-	-
<i>Malus</i> 'Simcoe'	OH534	-	4.8	6.2	-	1/1	-	-	-	-	-
<i>Sorbus pinnatifida</i>	OH565	-	-	-	-	1/1	-	-	-	-	-
<i>Pr.camp. formosa f.</i>	OH559	10=	7.6	9.2	3.5	1/1	2.5	2.3	2.3	2.4	Action
<i>Prunus</i> 'Ivensii'	OH588	-	5.6	7.4	-	1/1	3.5	4.5	3.8	3.9	Okay
<i>Emmenopterys henryi</i>		?	-	-	-	1/2	1.8	1.0	1.0	1.3	Urgent
<i>Carpinus betulus</i>	OH557	-	6.8	6.8	2.5	1/5	4.6	4.0	4.0	4.2	Exc.
<i>Acer pensylvanica</i>	OH686	?	-	-	-	1/3?	-	-	-	-	-
<i>Acer amplum</i>	OH555	40=	8.4	6.6	3.0	1/1	3.7	3.5	3.5	3.6	Okay
<i>Acer henryi</i>	OH556	4=	9.2	9.2	2.0	1/2	2.7	2.7	3.5	3.0	Okay

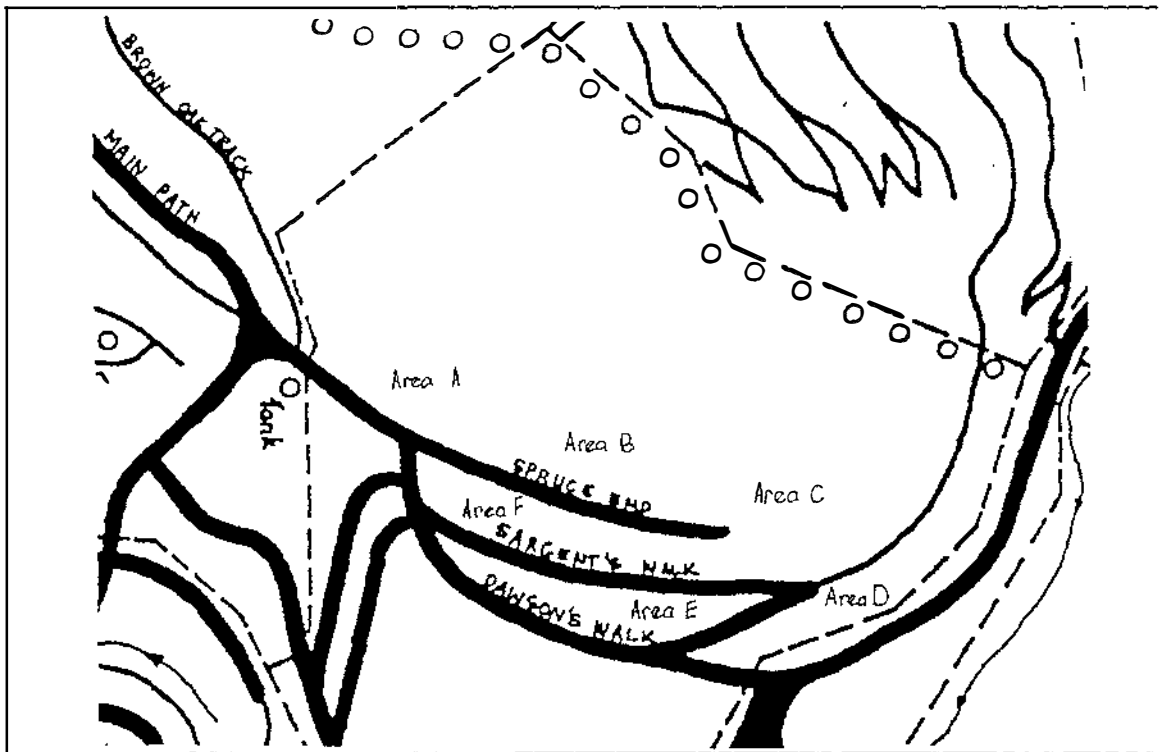
.....continued

Between the tracks - upper: Area F (Table 4.5.1 continued)

Plant	Ref. no.	Preliminary assessment					Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Height index	Status at EWH	Health	Example of species	Scene	Field average	
<i>Prunus ilicifolia</i>	OH553	59=	8.0	6.4	3.0	1/1	3.5	3.5	3.2	3.4	Okay
<i>Magnolia cordata</i>	OH536	-	6.8	5.6	5.0	1/1	3.6	3.5	3.9	3.7	Okay
<i>Mag. soul.</i> 'Brozonii'	OH654	-	4.8	7.0	2.5	1/3	4.5	4.3	4.5	4.4	Exc.
<i>Mag. s.</i> 'Rustica Rubra'	OH655	-	-	-	-	1/many	3.8	3.5	3.9	3.7	Okay
<i>Prunus camp.</i> 'Plena'	OH546	40=	6.8	8.2	3.0	1/1	1.6	1.3	1.2	1.4	Urgent
<i>Prunus sub.</i> 'Pendula'	OH529	-	5.8	8.0	3.0	1/3	3.6	2.5	2.8	3.0	Okay
<i>Prunus juddii</i>	OH530	-	5.6	7.0	3.0	1/1	3.2	2.7	3.0	3.0	Okay
<i>Mag. sprengeri var. diva</i>	OH550	2	8.8	9.8	3.0	1/2	3.8	3.3	3.8	3.6	Okay
<i>Abelia grandiflora</i>	OH700	-	5.2	9.0	4.5	1/many	3.8	3.3	2.2	3.4	Okay
<i>Malus spec.</i> 'FlorePlena'	OH523	-	4.6	6.6	2.0	1/many	2.8	2.0	2.2	2.3	Action
<i>Malus</i> 'Red Tip'	OH522	-	4.8	6.4	-	1/1	2.4	1.8	1.9	2.0	Action
<i>Malus</i> 'Gibbs G Gem'	OH524	-	4.2	6.6	3.0	1/1	2.2	1.8	1.8	1.9	Urgent
<i>Magnolia dawsoniana</i>	OH538	6	8.4	9.0	3.5	1/1	3.8	4.3	4.8	4.3	Exc.
<i>Malus glaucescens</i>	OH519	-	-	-	-	1/1	2.4	2.0	1.8	2.1	Action
<i>Malus soulardii</i>	OH517	-	5.4	6.4	-	1/1	2.4	3.0	2.8	2.7	Action
<i>Mal. prunif.</i> 'Fastigiata'	OH518	-	6.2	6.4	2.5	1/1	2.0	2.3	1.8	2.0	Action
<i>Ligustrum sinense</i>	OH651	-	5.4	5.8	-	1/2	3.4	2.0	2.0	2.5	Action
<i>Prunus</i> 'Benden'	OH512	-	5.0	6.6	3.0	1/1	3.3	3.3	3.5	3.4	Okay
<i>Prunus yedoensis hyd.</i>	OH511	-	5.6	8.0	-	1/1	2.6	2.5	2.5	2.5	Action
<i>Acer orientale</i>	OH510	59=	9.0	5.5	4.5	1/?	3.2	3.5	2.8	3.2	Okay
<i>Carpinus betulus</i>	OH509	-	6.8	6.8	2.5	1/5	4.0	3.7	3.6	3.8	Okay
<i>Arbutus unedo</i>	OH506	-	5.0	6.4	3.0	1/3	2.2	1.7	1.3	1.7	Urgent
<i>Prunus sub.</i> 'Fukubana'	OH508	-	6.0	7.6	3.0	1/1	0.5	1.0	0.7	0.7	Urgent
<i>Prunus serr.</i> 'Asano'	OH507	-	-	-	3.0	1/1	2.7	2.3	2.7	2.6	Action
<i>Prunus sub.</i> 'Ascendens'	OH513	59=	6.2	8.2	2.0	1/1	1.8	2.0	1.6	1.8	Urgent
<i>Ehretia macrophylla</i>	OH516	8=	9.2	7.8	5.0	1/1	3.8	4.0	4.8	4.2	Exc.
<i>Parasyringa sempervir.</i>	OH542	53=	8.6	6.0	3.5	1/1	2.7	1.5	1.4	1.9	Urgent
<i>Crataegus 543</i>	OH543	-	-	-	-	1/?	4.0	2.3	2.6	3.0	Okay
<i>Prunus dulcis</i> 'DXL'	OH521	-	5.6	6.0	2.0	1/3	1.8	2.0	2.6	2.1	Action
<i>Olea verrucosa</i>	OH537	-	6.6	5.6	-	1/1	3.2	2.5	2.5	2.7	Action
<i>Prun. dulcis</i> 'Monovale'	OH528	-	5.2	6.0	2.5	1/1	2.2	1.7	2.5	2.1	Action
<i>Prunus serr.</i> 'Kanzan'	OH527	-	5.2	6.6	2.0	1/2	2.0	2.3	2.4	2.2	Action
<i>Mag. kobus var. borealis</i>	OH544	-	6.0	7.0	2.0	1/2	4.2	4.0	4.7	4.3	Exc.
<i>Pr. cerasoides var. rubea</i>	OH687	7	8.0	9.0	2.0	1/3	3.3	3.0	3.9	3.4	Okay
<i>Philadelphus pubescens</i>	OH548	-	6.4	6.6	3.5	1/1	3.2	3.0	2.6	2.9	Action
<i>Olea europaea</i>	OH657	-	-	-	-	1/1	2.7	1.7	1.5	2.0	Action
<i>Prunus serrula</i>	OH551	36=	6.8	8.4	1.5	1/1	3.2	3.0	3.5	3.2	Okay
<i>Prunus</i> 'Pandorea'	OH531	-	-	-	-	1/2	3.8	3.5	3.5	3.6	Okay
<i>Malus</i> 'Mammoth'	OH549	-	4.4	6.2	-	1/1	4.3	3.0	3.7	3.7	Okay
<i>Philadelphus</i>	OH656	-	-	-	-	1/1	2.5	1.7	1.7	2.0	Action
<i>Prunus serr.</i> 'Tai Haku'	OH688	-	6.0	7.8	3.0	1/many	3.7	3.7	4.5	4.0	Exc.
<i>Eucryphia moorei</i>	OH533	36=	7.6	7.6	3.0	1/2	3.8	3.7	4.3	3.9	Okay
<i>Cornus nutallii</i>	OH552	17=	7.2	9.0	1.6	1/6	3.8	3.5	4.5	3.9	Okay



Segment of the arboretum plan showing the location of Orchard Hill.



Orchard Hill showing the location of the areas referred to in the results. Refer to the plans in thesis appendix two for detail.

After consideration of the field exercise it was agreed that if a tree rates below 3.0 (6.0) for field scores, then it should be removed, unless the botanical rating suggests otherwise. The recommendations below have taken this consensus into consideration.

Table 4.5.2 Results Orchard Hill exercise - Recommendations

<p>If a plant is not mentioned specifically in the recommendations then no immediate action is required.</p> <p>The Hollies and Abies (See area A.)</p> <p>Urgent action required according to field results</p> <p style="padding-left: 40px;"><i>Broussonetia papyrifera</i> (OH653), average of field scores 2.0</p> <p>Action required according to field results</p> <p style="padding-left: 40px;"><i>Ilex cornuta</i>, (OH621) average of field scores 2.9</p> <p style="padding-left: 40px;"><i>Ilex</i> (OH622) average of field scores 2.3</p> <p style="padding-left: 40px;"><i>Ilex casine</i>, (OH623), average of field scores 2.9</p> <p style="padding-left: 40px;"><i>Ilex latifolia</i>, (OH628) average of field scores 2.5</p> <p>Recommendations - urgent.</p> <ol style="list-style-type: none"> 1. Lift the branches of the overshadowing oak to give more light to the hollies. This should improve the situation of <i>I. latifolia</i>, (OH628). 2. Re-site the three small Hollies to a more spacious site. (OH615, 616, 619). These bushes are relatively easily moved, and if left will make the current overcrowding worse. <p>Recommendations 0-5 years</p> <ol style="list-style-type: none"> 1. Propagate and eventually remove the three centre hollies, (OH623, 622, 621). This will open out the centre of the group and give more room to the remaining plants. 2. The empty valley above the hollies should be used to replant species that need resiting from the existing group. 3. Propagate and resite the <i>Glochidion</i> (OH629). 4. Propagate <i>Broussonetia papyrifera</i> (OH653), to generate another of this sex in the arboretum. <p>Recommendations 5-10 years</p> <ol style="list-style-type: none"> 1. Propagate <i>I. platyphylla</i> and <i>I. insignis</i> (OH626, 627) to anticipate the need for eventual re-siting when they outgrow this site. <p>Comments</p> <p>In general it was agreed that the Hollies are very healthy and are growing in an understory situation that is suitable for this genus. However they are crowded and need to be propagated and the group as a whole given more room.</p> <p>The Picea group (See area B)</p> <p>This area was examined in 1989. It was not considered in need of further assessment as yet. Recommendations made for this area, at workshop one, are listed in table 4.5.1.</p> <p style="text-align: right;">.....continued</p>

The Pines (See area C)

Urgent action required according to field scores

Pinus montana var. *uncinata*, average of field scores 0.8

Action required according to field scores

Pinus sylvestris 'Argentea' (OH675), average of field scores 2.9

Pinus nigra var. *caramanica*, (OH600), average of field scores 2.7

Pinus nigra var. *coriscana*, (OH503), average of field scores 2.8

Pinus densiflora, (OH504), average of field scores 2.4

Pinus densiflora 'Umbraculifera', (OH502), average of field scores 2.7

Pinus halepensis, (OH501), average of field scores 2.7

Pinus parviflora, (OH505), average of field scores 2.7

Recommendations - urgent

1. Remove *Pinus montana* var. *uncinata*.
2. Propagate *Rhamnus californica* (OH575), in anticipation of removing it from its current position which blocks the track.

Recommendations 0-5 years.

1. Actions for complete removal of the species.
 - (i) Remove, without replacement, *Pinus montana* var. *uncinata*, and *Pinus densiflora* (OH504).
 - (ii) Remove from the upper slope *Juniperus x media* 'Blaauw', *Juniperus squamata* 'Meyeri', *Juniperus chinensis*, and *Juniperus chinensis* 'Pyramidalis'.
2. Actions for eventual replacement of the species, but removal of the existing specimen.
 - (i) Propagate, for replacement, *Pinus tabulaeformis* (OH577), *Pinus densiflora* 'Umbraculifera' (OH502). Remove existing specimens once propagating material is established.
3. Actions needed on species to be retained
 - (i) Propagate *Pinus koraiensis* (OH580) to generate a better example as the existing tree has lost its top.
 - (ii) Propagate, or obtain new stock of, *Pinus sylvestris* 'Argentea' (OH 675) for eventual replacement, as the existing specimen is a poor example.
 - (iii) Undertake cleanup arboricultural work on *Pinus nigra* var. *corsicana* (OH503), *Pinus nigra* var. *caramanica* (OH600).

Far end below track (See area D)

Urgent action required according to field scores

Chamaecyparis lawsoniana 'Naberi', (OH662) average of field scores 0.8

Picea, (OH682) average of field scores 1.5

Juniperus 'Meyeri', average of field scores 1.9

Metasequoia glyptostroboides, average of field scores 1.9

Action required according to field scores

Ligustrum lucidum, (OH586), average of field scores 2.9

.....continued

Ligustrum sinensis, (OH585), average of field scores 2.9
Aesculus hippocastanum 'Pumilum', (OH573), average of field scores 2.2
Crataegus missouriensis, (OH602), average of field scores 2.0
Photinia villosa var. *laevis*, (OH606), average of field scores 2.5
Berberis species

Recommendations - urgent

1. Send propagating material of *Chamaecyparis lawsoniana* 'Naberi' (OH662) to Sampsons in New Plymouth and then remove the tree.
2. Remove *Juniperus* 'Meyeri'.
3. Propagate and resite *Crataegus missouriensis* (OH602).
4. Propagate, for eventual re-siting, all other *Crataegus* species.
5. Propagate the unknown *Picea* (OH682).
6. Propagate all *Berberis* in anticipation of eventual removal. (This action has already been taken.)

Recommendations 0-5 years.

1. Remove *Ligustrum lucidum* (OH586), *Ligustrum sinensis* (OH585), and seedling *Gleditsia*.
2. Propagate *Ligustrum confusum* (OH592), and then remove when new material is established.
3. Propagate and resite *Aesculus hippocastanum* 'Pumilum' (OH573), and *Photinia villosa* var. *laevis* (OH606).
4. Repair weak crotch on *Gleditsia triacanthos* (OH595).
5. Take action over *Metasequoia glyptostroboides*.
6. Remove *Berberis* and *Crataegus* when new material is established.
7. Undertake arboricultural work on *Betula platyphylla* var. *japonica* (OH677), to improve structure.
8. Remove the *Ginkgo*.

Between the tracks - lower portion (See area E)

Urgent action required according to field scores

Dichotomanthes tristaniicarpa, (OH647), average of field scores 1.8
Fagus grandifolia, (OH567), average of field scores 1.9
Emmenopterys henryi, average of field scores 1.3

Action required according to field scores

Prunus serrulata 'Hisakura', (OH683), average of field scores 2.1
Fagus lucida, (OH570), average of field scores 2.7
Azara integrifolia, (OH650), average of field scores 2.5
Prunus campanulata Formosa form, (OH559), average of field scores 2.4

Recommendations - urgent

1. Propagate *Dichotomanthes tristaniicarpa* (OH647), *Fagus grandifolia* (OH567), *Fagus lucida* (OH570), *Prunus campanulata* 'Formosa form' (OH559), *Azara integrifolia* (OH650).
2. Remove *Emmenopterys henryi*.continued

Recommendations 0-5 years

1. Re-site new material of those propagated in 1 above.
2. Propagate *Acer henryi* (OH556), to generate another female plant at the arboretum.
3. Monitor the state of *Acer henryi* as its health rating falls below the acceptable limit.
4. Remove *Prunus serrulata* 'Hisakura' (OH683), as it scores below the agreed limit.
5. Investigate the possible removal of *Magnolia kobus* (OH649), as it rates below the acceptable limit for both 'example of species', and 'contribution to scene'.

Comments

A number of issues were raised in relation to this area and the following area. Comments applying to both are included after the next section.

Between the tracks upper (See area F)

Urgent action required according to field scores

Prunus campanulata 'Plena', (OH546), average of field scores 1.4

Malus 'Gibbs Golden Gem', (OH524), average of field scores 1.9

Arbutus unedo, (OH506), average of field scores 1.7

Prunus subhirtella 'Fukubana', (OH508), average of field scores 0.7

Prunus subhirtella 'Ascendens', (OH513), average of field scores 1.8

Parasyringa sempervirens, (OH542), average of field scores 1.9

Action required according to field scores

Malus spectabilis 'Flore Plena', (OH523), average of field scores 2.3

Malus 'Red Tip', (OH522), average of field scores 2.0

Malus glaucescens, (OH519), average of field scores 2.1

Malus soulardii, (OH517), average of field scores 2.7

Malus prunifolia 'Fastigiata', (OH518), average of field scores 2.0

Ligustrum sinensis, (OH651), average of field scores 2.5

Prunus yedoensis hybrid, (OH511), average of field scores 2.5

Prunus serrulata 'Asano', (OH507), average of field scores 2.6

Prunus dulcis 'IXL', (OH521), average of field scores 2.1

Olea verrucosa, (OH537), average of field scores 2.7

Prunus dulcis 'Monovale', (OH525), average of field scores 2.1

Prunus serrulata 'Kanzan', (OH527), average of field scores 2.2

Philadelphus pubescens, (OH548), average of field scores 2.9

Olea europaea, (OH657), average of field scores 2.0

Philadelphus, (OH656), average of field scores 2.0

Recommendations - urgent

1. Propagate *Prunus campanulata* 'Plena', *Parasyringa sempervirens*, *Malus* 'Gibbs Golden Gem', *Prunus subhirtella* 'Fukubana'. Hold for possible replanting.continued

2.	Propagate all other <i>Malus</i> and <i>Prunus</i> listed above for action or urgent action.
3.	Propagate for re-siting, both <i>Philadelphus</i> .
4.	Remove <i>Arbutus unedo</i> , <i>Prunus subhirtella</i> 'Ascendens', <i>Ligustrum sinensis</i> (OH651).
Recommendations 0-5 years.	
1.	Propagate, or obtain new stock of, those plants which while not below the acceptable average score at present, do have one field rating below 3.0. This includes <i>Prunus subhirtella</i> 'Pendula', <i>Prunus x juddii</i> , and <i>Crataegus</i> OH543.
2.	The committee should undertake a reselection of <i>Prunus</i> and <i>Malus</i> species to generate an approved list of these genera to be used on Orchard Hill.
3.	The approved list should be used to generate a replanting plan for <i>Prunus</i> and <i>Malus</i> .
4.	Gradually remove selected old <i>Prunus</i> and <i>Malus</i> specimens, and replant with newly chosen material according to the approved list

Recommendation: That the plan of action for Orchard Hill, outlined in table 4.5.2 be implemented.

4.6 Park evaluation - discussion

Some discussion ensued on the way in which Orchard Hill should be treated. The two areas between the tracks, which contain a large body of *Prunus* and *Malus*, were the focus of this discussion.

On the visual qualities of the Hill it was agreed that spring blossom is most important to the character of the park. Although many of the existing trees must be removed because they are at the end of their life, it is important that this element be returned. Generally the Hill is a high impact viewing area, especially from the main lawn, and this should be taken to its full potential. Mr Clapperton suggested that the park had both spring blossom and autumn colour highlights.

On the composition of this part of the Hill the following points were raised. It was agreed that the *Malus* and *Prunus* were most important to the flowering composition. Mr Cave and Mr McKean favoured a trend towards more *Magnolia* planting because 1) this moves towards Douglas Cook's objective of a *Magnolia* area, and 2) while *Malus* are attractive in flower, they are not particularly aesthetic when not in flower, *Magnolia* is a superior genus in this regard. Mr Sykes suggested that the *P.serrulata* cultivars were of low importance to the hill, and that generally they should be removed and the flowering character be replaced with something else.

It was generally agreed that a major clean-up is required through the *Malus* and *Prunus* genera on Orchard Hill. The species of these genera should then be reselected to achieve best results for both the botanical aspects of the collection and its visual impact in this park.

It was also agreed that once the clean-up and reselection process is complete, that a slightly different planting arrangement should be made. At present permanent elements tend to be at the top of the Hill, with transitory elements lower down. Similarly those of high visual impact tend to be on the lower portion, with few highlights amongst the evergreen belt higher up. The effect of this situation is that Orchard Hill has two distinct bands, one evergreen and permanent, the other deciduous and transitory. Ideally this situation needs to be rectified in the long term development of the park. Therefore, when replanting of *Prunus*, *Malus* and

Magnolia is done these elements should be interlaced into the plantings high on the Hill as well as moving further down the Hill. Thus both autumn colour and spring blossom highlights will occur more evenly over the whole of the vista.

Recommendation: That the general identity of Orchard Hill should be retained, i.e. Spring blossom featuring *Malus*, *Prunus*, and *Magnolia*, with coniferous background of *Picea*, *Abies* and *Pinus*.

Recommendation: That after recommended trees have been removed from the park a reconsideration of the plantings should be done.

Recommendation: That the renovated planting scheme should feature: (i) spring display and autumn colour highlights, (ii) a range of high impact *Prunus* and *Malus* types, (iii) *Prunus* types that tend towards species rather than cultivars.

Recommendation: That a proposal for the reselected *Prunus* and *Malus* species be brought to the committee at its next meeting for consideration.

4.7 Conclusion

The key problems on Orchard Hill are those associated with the *Prunus* and *Malus* types on the Hill, and their present degeneration due to old age. Associated with this is the need to better organise the permanent and transitory elements of the Hill, and to improve the visual effect of the display plantings by blending these further up the Hill.

The recommendations in this report call for the removal of the least important and poorest quality plants, and a major reconsideration of the arrangement of transitory plantings on the Hill. Subsequent workshops will deliberate on the proposed new plant list for these plantings, and the arrangement thereof.

Summary of recommendations

That the development of Orchard Hill should follow the themes outlined in section 4.3.

That the plan of action for Orchard Hill, outlined in table 4.5.2 be implemented.

That the general identity of Orchard Hill should be retained, i.e. Spring blossom featuring *Malus*, *Prunus*, and *Magnolia*, with coniferous background of *Picea*, *Abies* and *Pinus*.

That after recommended trees have been removed from the park a reconsideration of the plantings should be done.

That the renovated planting scheme should feature: (i) Spring display and autumn colour highlights, (ii) A range of high impact *Malus* and *Prunus* types, (iii) *Prunus* types should tend towards species rather than cultivars.

That a proposal for the reselected *Prunus* and *Malus* species be brought to the committee for consideration at its next meeting.

SECTION FIVE: Basinhead

5.1 Aim

To resolve management problems at Basinhead. This consideration is subsequent to an initial investigation of this area at the second workshop.

5.2 Background information

Basinhead is a small area within Douglas Park and is on the main thoroughfare when on Douglas Cook walk. It is a small basin with a flat centre surrounded by small ridges and open at the south end. The plantings are set around the perimeter of what was, prior to 1985, a small pond. In 1985 a severe rainstorm set in motion a deep slip on the farmland above Basinhead which resulted in the pond being completely filled in, the basin being covered in 1-2m of clay and several trees being surrounded by slip debris. A number of trees died as a result of this inundation. This, and the loss of the pond, have reduced the visual appeal of the area making improvement necessary. {Readers of this thesis are referred to plan 6 of thesis Appendix Two for a map of the area.}

At the second workshop an initial examination of this area was made. At this time important features of the area were identified and a number of ideas for the renovation of the area were put forward. The important features identified were:

1. An important physical feature was the ridge on the western side that separates Basinhead from the adjacent area. This is an open slope with scattered *Eucalyptus leucoxylon* 'Rosea'. This piece of ground was considered very visually appealing and should be enhanced.
2. An example of *Pinus durangensis* at the lower end of Basinhead is an important specimen tree {Later identified as *P. montezumae*}. Equally, the specimen of *Populus deltoides* 'Carolin' at the upper end of Basinhead is an important example.
3. Other plantings of note include a fine white trunked birch, (species unknown), several blue atlas cedar, *Acer macrophyllum*, and a bunya pine which is recovering from top loss. A series of poplars, (identity not confirmed), run along the fence line at the back of Basinhead.
4. A number of more transitory elements are included in the planting. There are some *Prunus*, (plums peaches and cherries), and a selection of lilacs.

The ideas put forward at the second workshop for renovation of Basinhead were:

1. With respect to the sloping ridge with the *Eucalyptus*:
 - Leave the area alone but remove the poorer trees.
 - Underplant with shrubby material.
 - Install a low planting across the lower slope, and remove the poorer trees.
 - Enhance the ridge top by selectively pruning up the douglas fir, thereby emphasizing the smooth ridge top.
2. With respect to the basin itself:
 - The area is important as an open space, of which there are few in this part of the Arboretum.
 - The margins of the basin appear suitable for mollis azaleas, a planting of azalea about the margin of the basin would enhance the spring display.
 - The central grassy area should be smoothed off.

3. With respect to the view through the basin to the farmland beyond:

- The fenceline across the rear of Basinhead should be planted with small material in order to hide the fence, but allow for the view into the hillside beyond.

4. With respect to plant material:

- *Populus deltoides* 'Carolin' should be pruned of broken branches, but otherwise be left as is.
- The various flowering plum cultivars be removed, along with the dying conifers, to give a better view of the poplar.
- The planting along the Pepper flat side of the basin be rearranged in order to take better advantage of microclimate. At present many smaller plants are heavily overshadowed by larger plants along the side of the track, relocating the smaller plants into the edge of the basin (rather than along the track) would ensure better growth and display.
- The yellow plum be removed.
- The cherries along the track should be repropagated

It was agreed at the second workshop that a full assessment of the area should be carried out. The results of this assessment should be used in combination with the ideas outlined above to resolve development issues for Basinhead.

Botanical and aesthetic assessment of the plants in Basinhead can be found in Appendix Tables 5.2-5.4. The most botanically important species was *Zelkova cretica*, with *Acer macrophyllum* and *Fraxinus latifolia* also rating highly. Aesthetically, the *Prunus* species were important. *Araucaria bidwillii* was, on average, the most important plant in Basinhead. *Populus deltoides* 'Carolin' did not rank for either botanical or aesthetic score. While this is notable given the high visual impact of the tree, it is also notable because the cut-off point for significance was lowered to 6.0, whereas normally it is 7.0. (This was done due to the comparatively low scores for this assessment.)

Permanent and transitory elements were examined. Permanent and transitory elements are as defined in section four for the Orchard Hill exercise. For Basinhead permanent elements were decided to be *Abies*, *Acer*, *Araucaria*, *Cedrus*, *Fraxinus*, *Pinus*, *Quercus*, *Zelkova* (?). Transitory elements were *Alnus*, *Betula*, *Forsythia*, *Populus*, *Prunus*, *Pyrus*, *Syringa*. Using this definition it is now apparent that Basinhead is largely composed of transitory elements. There are a few permanent elements around the edge of the track, but generally these are few in number. The lack of permanent trees is a serious problem in that the area will be rendered practically empty once all the short lived material dies. On the other hand, this very fact, if well planned for, presents a useful opportunity for the renovation of Basinhead.

There is no specific information on Douglas Cook's intentions for Basinhead. Mr Gordon reported at the second workshop that it was his understanding that this area should be the site of a lilac cultivar collection. This collection was installed, and the remnants of it are still present, however Eastwoodhill is not generally suitable for *Syringa vulgaris* and the specimens have mostly died out. No other information on Basinhead is known.

5.3 Field exercise

Having considered the background information the field exercise was conducted. Each tree was examined for 'health', 'example of species', and 'contribution to scene'. Rating scales for field assessment can be found in Appendix Three.

5.4 Results

The results of the field exercise can be found in table 5.4.1. The recommendations from the field exercise can be found in table 5.4.2. As a general rule it was agreed that it was necessary to provide space for high scoring species. Species that are repeated elsewhere should be given lower priority. Actions are outlined below, according to the field scores given for each plant. Combination of this information, and the suggestions from the second workshop, are discussed in the discussion section.

5.5 Discussion

The results of the field assessment for plants in Basinhead support the ideas put forward in the second workshop in all respects but one. Assessment supports the retention of the *Prunus cerasifera* var. *diversifolia*, rather than its removal as previously suggested. None of the other ideas previously put forward are at variance with the assessment results.

A number of plants within the Basinhead area have been targeted for immediate removal. Others have been tagged for propagation and then removal. Once these actions have been undertaken the rearrangement of the area can be started. It is apparent that the notion of spring display will play an important role in Basinhead. The number of *Prunus* already present in the area, plus the previous comments of the committee on spring display, support this direction. The *Prunus*, and other spring flowering elements are an important inclusion for this area.

In planning the rearrangement of Basinhead it is important that the distribution of permanent elements is carefully considered. Similarly, in the absence of any statement of firm objectives by Douglas Cook, objectives for the development of this area must be clearly elucidated.

5.6 Conclusion

The assessment of the plant material in Basinhead indicates which plants should be either removed or propagated and re-sited in the immediate future. The present arrangement of Basinhead clearly needs renovation, given the high quantity of transitory material, and the difficulties caused by the slip in 1985. A plan for redevelopment should be initiated once the action from this exercise have been carried out.

Recommendation: That the plan of action for Basinhead, as outlined in table 5.4.2, be implemented.

Recommendation: That a plan for the redevelopment of Basinhead, which takes account of the arrangement of permanent and transitory elements, and spring display, be undertaken.

Table 5.4.1: Preliminary and field assessment of plants in Basinhead

Plant	Ref. no.	Preliminary assessment				Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Status at EWH	Health	Example of species	Scene	Field average	
<i>Abies pinsapo 1st</i>	BH33	9=	6.0	6.8	1/many	4.6	2.2	4.0	3.6	Okay
<i>Abies pinsapo 2nd</i>	BH34	9=	6.0	6.8	1/many	4.3	3.0	3.5	3.6	Okay
<i>Abies pinsapo 3rd</i>	BH35	9=	6.0	6.8	1/many	4.5	3.8	3.9	4.1	Exc.
<i>Abies pinsapo 4th</i>	BH36	9=	6.0	6.8	1/many	3.8	3.0	3.6	3.5	Okay
<i>Acer buergerianum 1st</i>	BH43	-	6.2	6.4	1/many	3.8	2.7	3.7	3.4	Okay
<i>Acer buergerianum 2nd</i>	BH45	-	6.2	6.4	1/many	3.1	2.2	2.5	2.6	Action
<i>Acer macrophyllum</i>	BH48	12=	7.2	6.0	1/3	4.0	2.8	3.6	3.5	Okay
<i>Acer negundo form</i>	BH5	-	5.0	5.8	1/3	-	-	-	-	-
<i>Acer palmatum</i>	BH17	-	5.2	6.8	1/many	3.8	2.8	3.0	3.2	Okay
<i>Acer palmatum</i>	BH19	-	5.2	6.8	1/many	4.0	3.3	3.2	3.5	Okay
<i>Araucaria bidwillii</i>	BH55	2=	6.8	7.2	1/1	4.4	2.5	3.5	3.5	Okay
<i>Betula ermanni</i>	BH41	-	-	-	-	2.6	2.3	2.3	2.4	Action
<i>Betula platyphylla form</i>	BH58	-	6.0	5.6	1/?	4.0	3.8	3.1	3.6	Okay
<i>Betula platy. szechuanica</i>	BH57	-	6.0	6.0	1/?	fallen				
<i>Buddleia alternifolia</i>	BH1	14=	6.6	6.4	1/2	3.1	2.2	2.4	2.6	Action
<i>Buddleia alternifolia</i>		14=	6.6	6.4	2/2	2.8	1.5	1.9	2.1	Urgent
<i>Cedrus atlantica f. glauca</i>	BH52	14=	5.8	7.2	1/many	4.0	2.8	2.5	3.1	Okay
<i>Cedrus atlantica f. glauca</i>	BH53	14=	5.8	7.2	1/many	4.1	3.3	3.3	3.6	Okay
<i>Cedrus atlantica f. glauca</i>	BH56	14=	5.8	7.2	1/many	3.8	3.0	4.0	3.6	Okay
<i>Cedr. atl. glauca pendula</i>		4=	6.2	7.8	1/1	-	-	-	-	-
<i>Cham. pisifera plumosa</i>	BH20	-	5.4	6.4	1/?	1.2	0.5	0.6	0.8	Urgent
<i>Cham. pisifera squarrosa</i>	BH22	-	5.4	6.4	1/?	3.0	2.3	1.7	2.3	Action
<i>Cham. pisifera squarrosa</i>	BH21	-	5.4	6.8	1/?	1.4	1.3	1.1	1.3	Urgent
<i>Cornus florida f. rubra</i>	BH8	7	6.2	7.6	1/many	3.4	2.5	2.8	2.9	Action
<i>Forsythia 'Arnold Giant'</i>	BH30	-	5.4	7.0	1/1	3.0	1.3	2.6	2.3	Action
<i>Fors. 'Beatrix Farrand'</i>	BH29	-	5.4	6.6	1/1	3.5	1.0	2.7	2.4	Action
<i>Forsythia 'Linwood'</i>	BH28	-	5.8	6.6	1/1	3.0	2.6	2.4	2.7	Action
<i>Fraxinus latifolia</i>	BH6	12=	7.2	6.0	1/3	2.1	2.3	2.2	2.2	Action
<i>Fraxinus 2nd</i>	BH47	-	-	-	-	2.0	1.8	1.2	1.7	Urgent
<i>Fraxinus 3rd</i>	BH49	-	-	-	-	2.6	2.3	2.4	2.4	Action
<i>Fraxinus ornus</i>	BH7	-	6.2	6.6	1/3	4.5	-	4.5	-	-
<i>Grevillea robusta</i>		9=	6.2	7.2	1/many	3.5	2.5	3.6	3.2	Okay
<i>Magnolia kobus</i>	BH9	2=	6.6	7.8	1/many	1.1	0.5	1.0	0.9	Urgent
<i>Magnolia loebneri</i>	BH10	-	6.6	5.8	1/many	3.5	2.7	3.0	3.1	Okay
<i>Pop. deltoides 'Carolin'</i>	BH2	-	5.8	5.8	1/1	4.6	5.0	4.8	4.8	Exc.
<i>Populus (on fence)</i>	BH59	-	-	-	-	5.0	-	4.5	-	-
<i>Populus (by fence)</i>	BH60	-	-	-	-	5.0	-	5.0	-	-
<i>Populus lasiocarpa</i>		1	7.2	7.4	1/1	-	-	-	-	-
<i>Populus villoscens</i>		4=	7.0	7.0	1/1	-	-	-	-	-

.....continued

Plant	Ref. no.	Preliminary assessment				Field assessment				Status
		Rank for Av. score	Botan. score	Aesth. score	Status at EWH	Health	Example of species	Scene	Field average	
<i>Prunus x bleirana</i>	BH54	-	5.8	7.0	1/many	3.0	2.3	2.2	2.5	Action
<i>Pr. cerasif. diversifolia</i>	BH37	-	4.8	5.0	1/many	3.8	3.3	2.8	3.3	Okay
<i>Pr. cerasif.</i> 'Pissardii'	BH51	-	5.4	6.0	1/many	3.2	2.0	2.5	2.6	Action
<i>Pr. cerasif.</i> 'Thundereld.'	BH50	-	-	-	-	2.7	2.3	2.6	2.5	Action
<i>Punus mume</i> 'Dawn'	BH42	-	5.8	6.8	1/?	3.4	3.3	3.7	3.5	Okay
<i>Pr. mume</i> 'Peggy Clark'	BH26	14=	5.8	7.2	1/1	3.3	2.8	3.1	3.1	Okay
<i>Pr. mume</i> 'The Geisha'	BH24	14=	5.8	7.2	1/?	2.3	2.0	1.6	2.0	Urgent
<i>Pr.pers.</i> 'Helen Borchers'	BH13	-	5.2	7.2	1/2	2.0	2.0	1.7	1.9	Urgent
<i>Prunus serr.</i> 'AshiBotan'	BH40	-	5.4	7.2	1/?	3.6	2.8	3.5	3.3	Okay
<i>Prunus serr.</i> 'Kanzan'	BH61	9=	5.4	8.0	1/many	3.5	3.0	3.8	3.4	Okay
<i>Prunus serr.</i> 'Kofugen'	BH62	-	5.4	7.2	1/?	3.8	2.0	3.3	3.0	Okay
<i>Prunus serr.</i> 'Mt Fuji'	BH38	14=	5.4	7.6	1/many	3.5	3.0	2.3	2.9	Action
<i>Pr.serr.</i> 'Rosea FlorePl.'	BH27	-	-	-	-	3.4	3.3	3.4	3.4	Okay
<i>Pr. serr.</i> 'YedoZakura'	BH39	-	5.4	7.2	1/?	2.8	2.8	2.3	2.6	Action
<i>Prunus serr.</i> 'Yukon'	BH44	14=	5.4	7.6	1/3	3.5	2.8	2.8	3.0	Okay
<i>Prunus serr.</i> 'Yukon'	BH46	14=	5.4	7.6	1/3	3.0	3.3	2.9	3.1	Okay
<i>Pyrus pashia</i>	BH14	-	6.2	6.4	1/many	4.5	4.0	4.0	4.2	Exc.
<i>Pyrus pashia</i>	BH15	-	6.2	6.4	1/many	4.1	3.0	3.2	3.4	Exc.
<i>Pyrus pashia</i>	BH16	-	6.2	6.4	1/many	4.0	3.5	3.6	3.8	Okay
<i>Stachyurus praecox</i>		8	6.2	7.4	1/2	1.5	1.3	1.3	1.4	Urgent
<i>Syringa</i> 'Buffon'		-	5.4	7.0	1/1	3.5	-	2.5	-	-
<i>Syringa</i> 'Edith Cavell'		-	5.4	7.4	1/1	2.5	-	3.0	-	-
<i>Syringa</i> 'Mme Lemonie'		14=	5.8	7.2	1/1	-	-	-	-	-
<i>Syr.</i> 'Svr. AliceHarding'		14=	5.8	7.2	1/1	-	-	-	-	-
<i>Viburnum</i> 'Bodnant'		4=	6.2	7.8	1/2	2.0	1.5	1.2	1.6	Urgent
<i>Zelkova cretica</i>	BH3	14=	7.8	5.2	1/1	3.8	2.8	3.4	3.3	Okay

Table 5.4.2: Recommendations from field exercise for Basinhead

Recommendations - urgent	
1.	Propagate, for eventual resiting, <i>Buddleia alternifolia</i> (BH1).
2.	<i>Fraxinus latifolia</i> (BH6,47,49). Grow seed from the tree to produce rootstock, then graft. Eventually remove. In the meantime prune out dead and dangerous wood to preserve the specimen while waiting for new material to come on.
3.	Propagate, for eventual removal and resiting, <i>Stachyurus praecox</i> , <i>Viburnum</i> 'Bodnant', and the three <i>Forsythia</i> . These species to be replanted along the lower side of the planting where they will get more sun.
4.	Propagate and remove <i>Prunus mume</i> 'The Geisha' (BH24), and <i>Prunus persica</i> 'Helen Borchers' (BH31,32).
continued

Recommendations 0-5 years

1. *Pyrus pashia* (BH15) to be removed.
2. *Pyrus pashia* (BH16) to be reshaped after the removal of BH15.
3. Remove 2nd *Acer buergerianum* (BH45).
4. Reduce the cluster of *Prunus cerasifera* var. *diversifolia* (BH37), to one plant.
5. Remove *Magnolia kobus* (BH9).
6. *Grevillea robusta* nearest *Araucaria* should be removed to allow more room for the *Araucaria*.
7. Remove *Chamaecyparis pisifera* 'Plumosa' (BH20) and *Chamaecyparis pisifera* 'Squarrosa' (BH21). Leave *Chamaecyparis pisifera* 'Squarrosa' (BH22) until it begins to encroach on the *Araucaria*, and then remove it.
8. Propagate or obtain new stock of *Betula ermannii* (BH41).
9. Remove *Prunus cerasifera* 'Thundercloud' (BH50), *Prunus cerasifera* 'Pissardi' (BH51), and *Prunus* 'Bleirana' (BH54).
10. Propagate *Prunus serrulata* 'Yedo Zakura' (BH39).
11. Propagate for eventual removal, all *Syringa* cultivars.
12. Propagate, for eventual re-siting, all *Prunus serrulata* cultivars.

Comments

1. *Prunus serrulata* 'Mt Fuji' is in need of action, however its situation should improve with the thinning of the adjacent *Prunus cerasifera* var. *diversifolia*.
2. Discussion was held on the possible removal of one or two of the *Cedrus atlantica* f. *glauca* in favour of the poplar at the back. Consensus was not reached. Field scores show all three *Cedrus* to have a total that is 'okay' and requires no action.
3. Discussion was held on the removal of all the *Prunus* except the *P.serrulata* types. This has only been recommended where the field ratings required some action to be taken.
4. *Syringa* cultivars were generally not rated by participants in the field exercise. The recommendation above is based on the increasing age of the plants in question.
5. The *Acer negundo* form, (BH5), is a three foliate form that is not typical. The type exists in two other trees at the Arboretum, neither of which is healthy. The strain should be retained through one of the other trees, or by propagation.

SECTION SIX: Conclusions

At the end of the workshop a concluding discussion was held. The business of the workshop over the previous two days was reconfirmed. Two other matters were raised.

6.1 Information

It was agreed that where a workshop member provided information relevant to the functioning of the workshop, it should be included in the official documents.

6.2 Next workshop

It was agreed that the next workshop should be timed so that decisions made could be implemented that season. It was proposed that the meeting be regularly held in March of any one year. The possibility of a second meeting should be considered. The fourth workshop should comprise one day on the development of the new area, and one day on the review of a park and/or genus. Specific issues that should be raised at the fourth workshop are:

- Cabin Park, Black Forest.
- A genus study, probably *Quercus*.
- Orchard Hill proposals for *Malus* and *Prunus* reselection.
- Basinhead proposals for new concepts
- New area, deliberations on initial concepts as proposed by the subgroup working on this issue.

Recommendation: That the fourth workshop be held in March 1992.

Recommendation: That the fourth workshop address issues such as suggested in section 6.2.

APPENDIX ONE: Programme

Programme for the third Eastwoodhill Arboretum workshop

To be held at Eastwoodhill on 16-17 March 1991

Saturday 16 March

8.30am	Welcome
8.45-9.45	Introduction and review Issues from previous reports Progress reports Update on Gondwana
10.15-12.15	Key genus study - Acer Introduction Field exercise
1.15-2.15	Key genus study - Acer Discussion and conclusion
2.45-5.00	New developments - new area
5.00	Viewing of Douglas Cook Centre for Education

Sunday 17 March

8.30-10.30	Park Management - Orchard Hill Introduction Field exercise
11.30-12.30	Park Management - Orchard Hill Discussion
1.30-2.30	Basinhead exercise
2.30-3.30	Black Forest walk
3.30-4.30	Issues and conclusions

APPENDIX TWO: Tables referred to in the text

SECTION TWO: ACERTable 2.1: Preliminary assessment for the genus *Acer*

Species	Botanical score	Aesthetic score	Average score
<i>Acer amplum</i>	8.1	7.0	7.6
<i>A. buergerianum</i>	6.6	7.5	7.1
<i>A. caesium</i>	8.5	7.0	7.8
<i>A. campbellii</i>	8.5	7.9	8.2
<i>A. campestre</i>	6.3	5.7	6.0
<i>A. campestre</i> 'Schwerinni'	5.7	7.2	6.5
<i>A. capillipes</i>	7.4	7.8	7.6
<i>A. cappadocicum</i>	7.0	6.9	6.9
<i>A. cappadocicum</i> 'Aureum'	6.5	7.6	7.0
<i>A. cappadocicum</i> ssp. <i>divergens</i>	8.3	8.0	8.1
<i>A. cappadocicum</i> ssp. <i>lobelii</i>	8.1	7.6	7.9
<i>A. cappadocicum</i> 'Rubrum'	6.1	8.0	7.0
<i>A. cappadocicum</i> var. <i>sinicum</i>	7.6	8.8	8.2
<i>A. cappadocicum</i> f. <i>tricaudatum</i>	8.7	8.0	8.3
<i>A. carpinifolium</i>	8.4	8.1	8.3
<i>A. caudatifolium</i>	8.9	8.3	8.6
<i>A. circinatum</i>	7.4	7.9	7.7
<i>A. cissifolium</i>	8.7	8.0	8.3
<i>A. coriacaefolium</i>	9.2	9.0	9.1
<i>A. davidii</i>	7.9	8.3	8.1
<i>A. davidii</i> 'George Forrest'	8.2	8.5	8.4
<i>A. diabolicum</i>	8.8	7.8	8.3
<i>A. diabolicum</i> f. <i>purpurascens</i>	8.0	8.5	8.3
<i>A. erianthum</i>	8.6	7.0	7.8
<i>A. fargesii</i>	8.7	7.8	8.3
<i>A. flabellatum</i>	8.7	7.0	7.9
<i>A. forrestii</i>	9.1	8.1	8.6
<i>A. ginnala</i>	7.5	8.3	7.9
<i>A. glabrum</i>	8.2	6.7	7.4
<i>A. griseum</i>	8.5	9.7	9.1
<i>A. grosseri</i>	7.6	7.7	7.7
<i>A. grosseri</i> var. <i>hersii</i>	7.9	8.3	8.1
<i>A. heldreichii</i>	8.8	7.0	7.9
<i>A. henryi</i>	8.7	9.0	8.9
<i>A. x hillieri</i> (<i>campestre</i> x <i>miyabei</i>)	6.8	7.7	7.2
<i>A. hookeri</i>	8.2	8.8	8.5
<i>A. x hybridum</i>	6.5	7.0	6.8
<i>A. hyrcanum</i>	8.4	6.2	7.3

.....continued

Species	Botanical score	Aesthetic score	Average score
<i>A. japonicum</i>	8.0	8.8	8.4
<i>A. japonicum</i> 'Aconitifolium'	6.5	6.7	6.6
<i>A. japonicum</i> 'Aureum'	6.6	8.3	7.9
<i>A. japonicum</i> 'Vitifolium'	6.1	8.4	7.3
<i>A. laxiflorum</i>	9.4	8.0	8.7
<i>A. macrophyllum</i>	8.5	7.8	8.2
<i>A. miyabei</i>	8.4	7.2	7.8
<i>A. mono</i>	8.2	7.4	7.9
<i>A. mono</i> var. <i>mayrii</i>	8.7	10.0	9.3
<i>A. monspessulanum</i>	7.2	6.1	6.7
<i>A. negundo</i>	6.9	5.9	6.4
<i>A. negundo</i> 'Auratum'	4.9	6.4	5.6
<i>A. negundo</i> 'Argenteomarginatum'	5.6	5.8	5.7
<i>A. negundo</i> 'Variegatum'	5.3	5.7	5.5
<i>A. negundo</i> var. <i>californicum</i>	7.0	6.2	6.6
<i>A. negundo</i> var. <i>mexicana</i>	7.3	7.0	7.2
<i>A. negundo</i> var. <i>violaceum</i>	7.1	8.4	7.8
<i>A. nikoense</i>	8.8	9.2	9.0
<i>A. opalus</i>	7.0	6.5	6.8
<i>A. palmatum</i>	7.2	8.6	7.9
'Atropurpureum'	6.3	8.7	7.5
'Crispii'	5.6	8.1	6.8
'Dissectum'	6.5	8.7	7.6
'Dissectum Atropurpureum'	6.5	8.9	7.7
'Hillieri'	5.4	8.5	6.9
'Isingaki'	4.8	8.3	6.6
'Koshimino' ('Sessiliflorum')	5.5	8.0	6.7
'Lutescens'	5.3	8.2	6.7
'Nigrum'	5.4	8.5	6.9
'Osakasuki'	5.0	9.5	7.3
'Oshiu Beni'	6.1	8.5	7.3
'Rubrum'	6.5	8.6	7.6
'Sango Kaku' ('Senkaki')	7.3	8.9	8.1
'Seigan'	7.7	8.0	7.9
'Septemlobum'	6.8	8.4	7.6
'Septemlobum Rubrum'	6.2	8.8	7.5
'Septemlobum Superbum'	6.4	8.5	7.5
'Shishigashira'	6.3	8.6	7.5
var. <i>coreanum</i>	6.7	8.0	7.3
<i>A. paxii</i>	9.3	8.2	8.7
<i>A. pensylvanicum</i>	7.8	7.7	7.8
<i>A. pensylvanicum</i> 'Erythrocarpum'	6.8	8.7	7.7
<i>A. pentaphyllum</i>	9.1	9.0	9.1
<i>A. platanoides</i>	7.1	7.4	7.3
'Crimson King'	6.2	8.8	7.5

.....continued

Species	Botanical score	Aesthetic score	Average score
<i>A. platanoides</i> 'Cucullatum'	6.3	5.8	6.0
<i>A. platanoides</i> 'Goldsworth Purple'	6.0	8.9	7.4
<i>A. platanoides</i> 'Palmatifidum'	5.7	8.4	7.1
<i>A. platanoides</i> 'Reitenbachii'	6.0	8.0	7.0
<i>A. platanoides</i> 'Schwedleri'	5.4	8.2	6.8
<i>A. platanoides</i> ssp. <i>turkestanicum</i>	8.6	8.0	8.3
<i>A. pseudoplatanus</i>	5.7	5.3	5.5
'Brilliantissimum'	5.5	7.5	6.5
'Esk Sunset'	5.4	6.7	6.0
'Esk Sunset II'	5.4	6.4	5.9
'Leopoldii'	5.4	7.6	6.5
'Prinz Handjery'	5.4	8.1	6.7
'Worleei'	5.7	8.1	6.8
<i>f. erythrocarpum</i>	4.7	6.7	5.7
<i>f. purpureum</i>	4.8	6.6	5.7
<i>A. pseudosieboldianum</i>	9.4	9.4	9.4
<i>A. pseudosieboldianum</i> var. <i>takesimense</i>	10.0	8.0	9.0
<i>A. rubrum</i>	7.5	8.2	7.9
'Brilliant'	6.4	9.0	7.7
'October Glory'	6.7	8.5	7.6
<i>Acer rufinerve</i>	8.2	8.2	8.2
<i>Acer rufinerve</i> f. <i>albolimbatum</i>	6.7	9.0	7.9
<i>A. saccharinum</i>	7.8	8.2	8.0
<i>f. laciniatum</i>	7.2	8.2	7.7
'Pulverulentum'	5.3	7.5	6.4
'Fastigiatum'	5.3	7.7	6.5
<i>A. saccharum</i>	8.0	7.9	8.0
<i>A. saccharum</i> Arnold Arboretum Form	8.0	8.7	8.3
<i>A. saccharum</i> ssp. <i>grandidentatum</i>	7.8	7.2	7.5
<i>A. saccharum</i> ssp. <i>leucoderme</i>	7.5	7.0	7.3
<i>A. saccharum</i> ssp. <i>nigrum</i>	7.8	7.0	7.4
<i>A. sempervirens</i>	8.6	5.6	7.1
<i>A. serrulatum</i>	9.0	9.5	9.3
<i>A. sieboldianum</i>	8.4	7.8	8.1
<i>A. sikkimense</i>	8.8	9.0	8.9
<i>A. spicatum</i>	8.2	8.0	8.1
<i>A. sterculianum</i>	9.0	8.0	8.5
<i>A. tegmentosum</i>	9.2	9.0	9.1
<i>A. trautvetteri</i>	8.7	7.7	8.2
<i>A. triflorum</i>	8.6	8.4	8.5
<i>A. truncatum</i>	9.2	8.0	8.7
<i>A. ukurunduense</i>	9.0	7.0	8.0
<i>A. velutinum</i> var. <i>vanvolxemi</i>	5.8	7.2	6.5
<i>A. vel.</i> var. <i>vanvolxemi</i> x <i>pseudoplatanus purpureum</i>	7.8	6.2	7.0
<i>A. wilsoni</i>	8.1	7.8	8.0
<i>A</i> x <i>zeoschense</i>	6.6	6.7	6.6

Table 2.2: Ranking of Acer for average score

Species	Average score	Rank
<i>Acer pseudosieboldianum</i>	9.4	1
<i>Acer mono</i> var. <i>mayrii</i>	9.3	2=
<i>Acer serrulatum</i>	9.3	2=
<i>Acer tegmentosum</i>	9.1	4=
<i>Acer coriaceifolium</i>	9.1	4=
<i>Acer griseum</i>	9.1	4=
<i>Acer pentaphyllum</i>	9.1	4=
<i>Acer pseudosieboldianum</i> var. <i>takasimense</i>	9.0	8=
<i>Acer nikoense</i>	9.0	8=
<i>Acer sikkimense</i>	8.9	10=
<i>Acer henryi</i>	8.9	10=
<i>Acer paxii</i>	8.7	12=
<i>Acer laxiflorum</i>	8.7	12=
<i>Acer forrestii</i>	8.6	14=
<i>Acer truncatum</i>	8.6	14=
<i>Acer caudatifolium</i>	8.6	14=
<i>Acer sterculiaceum</i>	8.5	17=
<i>Acer hookeri</i>	8.5	17=
<i>Acer triflorum</i>	8.5	17=
<i>Acer japonicum</i>	8.4	20=
<i>Acer davidii</i> 'George Forrest'	8.4	20=
<i>Acer cappadocicum</i> f. <i>tricaudatum</i>	8.3	22=
<i>Acer cissifolium</i>	8.3	22=
<i>Acer saccharum</i> , Arnold Arb form	8.3	22=
<i>Acer platanoides</i> ssp. <i>turkestanicum</i>	8.3	22=
<i>Acer carpinifolium</i>	8.3	22=
<i>Acer diabolicum</i>	8.3	22=
<i>Acer diabolicum</i> f. <i>purpurescens</i>	8.3	22=
<i>Acer fargesii</i>	8.3	22=
<i>Acer campbellii</i>	8.2	30=
<i>Acer rufinerve</i>	8.2	30=
<i>Acer trautvetteri</i>	8.2	30=
<i>Acer cappadocicum</i> var. <i>sinicum</i>	8.2	30=
<i>Acer macrophyllum</i>	8.2	30=
<i>Acer cappadocicum</i> ssp. <i>divergens</i>	8.1	35=
<i>Acer sieboldianum</i>	8.1	35=
<i>Acer davidii</i>	8.1	35=
<i>Acer grosseri</i> var. <i>hersii</i>	8.1	35=
<i>Acer spicatum</i>	8.1	35=
<i>Acer palmatum</i> 'Sango Kaku'	8.1	35=
<i>Acer ukurunduense</i>	8.0	41=
<i>Acer saccharinum</i>	8.0	41=
<i>Acer wilsonii</i>	8.0	41=
<i>Acer saccharum</i>	8.0	41=

Table 2.3: Ranking of *Acer* for botanical score

Species	Botanical score	Rank
<i>Acer pseudosieboldianum</i> var. <i>takesimense</i>	10.0	1
<i>Acer laxiflorum</i>	9.4	2=
<i>Acer pseudosieboldianum</i>	9.4	2=
<i>Acer paxii</i>	9.3	4
<i>Acer tegmentosum</i>	9.2	5=
<i>Acer truncatum</i>	9.2	5=
<i>Acer coraicefolium</i>	9.2	5=
<i>Acer forrestii</i>	9.1	8=
<i>Acer pentaphyllum</i>	9.1	8=
<i>Acer serrulatum</i>	9.0	10=
<i>Acer sterculiaceum</i>	9.0	10=
<i>Acer ukurunduense</i>	9.0	10=
<i>Acer caudatifolium</i>	8.9	13
<i>Acer sikkimense</i>	8.8	14=
<i>Acer heldreichii</i>	8.8	14=
<i>Acer diabolicum</i>	8.8	14=
<i>Acer nikoense</i>	8.7	17=
<i>Acer flabellatum</i>	8.7	17=
<i>Acer trautvetteri</i>	8.7	17=
<i>Acer fargesii</i>	8.7	17=
<i>Acer henryi</i>	8.7	17=
<i>Acer cappadocicum</i> f. <i>tricaudatum</i>	8.6	22=
<i>Acer cissifolium</i>	8.6	22=
<i>Acer mono</i> var. <i>mayrii</i>	8.6	22=
<i>Acer erianthum</i>	8.6	22=
<i>Acer platanoides</i> ssp. <i>turkestanicum</i>	8.6	22=
<i>Acer sempervirens</i>	8.6	22=
<i>Acer triflorum</i>	8.6	22=
<i>Acer campbellii</i>	8.5	29=
<i>Acer macrophyllum</i>	8.5	29=
<i>Acer caesium</i>	8.5	29=
<i>Acer griseum</i>	8.5	29=
<i>Acer carpinifolium</i>	8.4	33=
<i>Acer miyabei</i>	8.4	33=
<i>Acer sieboldianum</i>	8.4	33=
<i>Acer hyrcanum</i>	8.4	33=
<i>Acer cappadocicum</i> ssp. <i>divergens</i>	8.3	37
<i>Acer davidii</i> 'George Forrest'	8.2	38=
<i>Acer rufinerve</i>	8.2	38=
<i>Acer spicatum</i>	8.2	38=
<i>Acer hookeri</i>	8.2	38=
<i>Acer cappadocicum</i> ssp. <i>lobelii</i>	8.2	38=
<i>Acer glabrum</i>	8.2	38=
<i>Acer mono</i>	8.2	38=
<i>Acer amplum</i>	8.1	45=
<i>Acer wilsoni</i>	8.1	45=
<i>Acer diabolicum</i> f. <i>purpurescens</i>	8.0	47=
<i>Acer japonicum</i>	8.0	47=
<i>Acer saccharum</i>	8.0	47=
<i>Acer saccharum</i> Arnold form	8.0	47=

Table 2.4 Ranking of Acer for aesthetic score

Species	Aesthetic score	Rank	Species	Aesthetic score	Rank
<i>Acer mono</i> var. <i>mayrii</i>	10.0	1	<i>Acer davidii</i>	8.3	41=
<i>Acer griseum</i>	9.7	2	<i>Acer japonicum</i> 'Aureum'	8.3	41=
<i>Acer palmatum</i> 'Osakasuki'	9.5	3=	<i>Acer caudatifolium</i>	8.3	41=
<i>Acer serrulatum</i>	9.5	3=	<i>Acer saccharinum</i>	8.2	47=
<i>Acer pseudosieboldianum</i>	9.4	5	<i>Acer saccharinum</i> 'Laciniatum'	8.2	47=
<i>Acer nikoense</i>	9.2	6	<i>Acer palmatum</i> 'Lutescens'	8.2	47=
<i>Acer coriaceifolium</i>	9.0	7=	<i>Acer rubrum</i>	8.2	47=
<i>Acer henryi</i>	9.0	7=	<i>Acer platanoides</i> 'Schwedleri'	8.2	47=
<i>Acer pentaphyllum</i>	9.0	7=	<i>Acer paxii</i>	8.2	47=
<i>Acer rubrum</i> 'Brilliant'	9.0	7=	<i>Acer carpinifolium</i>	8.1	54=
<i>Acer rufinerve</i> f. <i>albolimbatum</i>	9.0	7=	<i>Acer forrestii</i>	8.1	54=
<i>Acer sikkimense</i>	9.0	7=	<i>Acer palmatum</i> 'Cripsii'	8.1	54=
<i>Acer tegmentosum</i>	9.0	7=	<i>Acer pseudo.</i> 'Prince Handjerg'	8.1	54=
<i>Acer palm.</i> 'Dissectum Atropurpureum'	8.9	14=	<i>Acer pseudoplatanus</i> 'Worleei'	8.1	54=
<i>Acer platanoides</i> 'Goldsworth Purple'	8.9	14=	<i>Acer cappadocicum</i> 'Rubrum'	8.0	59=
<i>Acer palmatum</i> 'Sango Kaku'	8.9	14=	<i>Acer cappad. ssp. divergens</i>	8.0	59=
<i>Acer palmatum</i> 'Septemlobum Rubrum'	8.8	17=	<i>Acer cappad. f. tricaudatum</i>	8.0	59=
<i>Acer hookeri</i>	8.8	17=	<i>Acer cissifolium</i>	8.0	59=
<i>Acer japonicum</i>	8.8	17=	<i>Acer laxiflorum</i>	8.0	59=
<i>Acer platanoides</i> 'Crimson King'	8.8	17=	<i>Acer palmatum</i> var. <i>coreanum</i>	8.0	59=
<i>Acer cappadocicum</i> var. <i>sinicum</i>	8.7	21=	<i>Acer palmatum</i> 'Koshimino'	8.0	59=
<i>Acer palmatum</i> 'Dissectum'	8.7	21=	<i>Acer palmatum</i> 'Seigan'	8.0	59=
<i>Acer palmatum</i> 'Atropurpureum'	8.7	21=	<i>Acer plat.</i> 'Reitenbachii'	8.0	59=
<i>Acer pensylvanicum</i> 'Erythrocarpum'	8.7	21=	<i>Acer plat. sp. turkestanicum</i>	8.0	59=
<i>Acer saccharum</i> Arnold form	8.7	21=	<i>Acer pseudosieb. var. takesimense</i>	8.0	59=
<i>Acer palmatum</i>	8.6	26=	<i>Acer spicatum</i>	8.0	59=
<i>Acer palmatum</i> 'Shishigashira'	8.6	26=	<i>Acer sterculiaceum</i>	8.0	59=
<i>Acer palmatum</i> 'Rubrum'	8.6	26=	<i>Acer truncatum</i>	8.0	59=
<i>Acer davidii</i> 'George Forrest'	8.5	29=			
<i>Acer diabolicum</i> f. <i>purpurescens</i>	8.5	29=			
<i>Acer palmatum</i> 'Hillieri'	8.5	29=			
<i>Acer palmatum</i> 'Nigrum'	8.5	29=			
<i>Acer palmatum</i> 'Oshio Beni'	8.5	29=			
<i>Acer palm.</i> 'Septemlobum Superbum'	8.5	29=			
<i>Acer rubrum</i> 'October Glory'	8.5	29=			
<i>Acer negundo</i> var. <i>violaceum</i>	8.4	36=			
<i>Acer palmatum</i> 'Septemlobum'	8.4	36=			
<i>Acer triflorum</i>	8.4	36=			
<i>Acer japonicum</i> 'Vitifolium'	8.4	36=			
<i>Acer platanoides</i> 'Palmatifidum'	8.4	36=			
<i>Acer ginnala</i>	8.3	41=			
<i>Acer grosseri</i> var. <i>hersi</i>	8.3	41=			
<i>Acer palmatum</i> 'Isingaki'	8.3	41=			

Table 2.5 List of current species and cultivars at Eastwoodhill.

Current list of species can be found in Table 2.1, {and in thesis Appendix One}.

Table 2.6: List of Acer species previously held at Eastwoodhill

{Sources of these previous plants can be found in thesis Appendix Three, the previous collection.}

Acer palmatum 'Dissectum Flavescens'

Acer distylum

Acer divergens *quinquelobum* ?

Acer hersii sp1183

Acer hookerianum *hillier* ?

Acer laevigatum

Acer palmatum 'Lutescens'

Acer mandshuricum

Acer maximowiczii

Acer micranthum

Acer negundo 'Albo Variegatum'

'Aureo Variegata'

'Crispum'

'Elegantissimum'

Acer oblongum

Acer omastoni

Acer palmatum

'Bicolor'

'Dissectum Rubrum'

'Dissectum Washi-mo-o'

'Elegans Purpurea'

'Luteum'

'Nigricans'

'Roseum'

'Sanguineum Chishio'

'Sanguineum Seigan'

'Septemlobum Atropurpureum'

'Septemlobum Elegans Purpureum'

'Swminagashi

'Tsumigaki'

Acer pseudoplatanus

f. purpureum spaethii

reticulatum

violaceum

Acer purpurescens

Acer quinquelobum

Acer x rotundilobum

Acer saccharum *ssp. schneckii*.

Acer sikkimense

Acer syriacum

Acer tarongense

Acer tartaricum

Acer tenellum

Acer truncatum

Acer tschonoski

Acer villosum

Acer zoeschense *var. georgiana*

Acer sp KW9511

Table 2.7: Other species of Acer held in IDS collections

Acer circinatum x palmatum

Acer franchetti

Acer micranthum

Acer nikoense x griseum

Acer ningapense

Acer palmatum several varieties

Acer platanoides 'Lacinatum'

Acer platanoides 'Rubrum'

Acer platanoides 'Walderseei'

Acer pseudoplatanus 'Prince Handjerg'

Acer pseudoplatanus 'Victoria'

Acer rubrum 'Scanlon'

Acer sieboldianum *var. macrophyllum*

Acer tartaricum

SECTION THREE: NEW AREATable 3.1: Statements of intent for Eastwoodhill, extracted from the writing of William Douglas Cook

<p>“During the war I stayed in several beautiful country homes in Britain and this left me with a growing desire to create something worthwhile in New Zealand” (Cook, 1948).</p> <p>“I loved the country scene in England and its beautiful parks and wondered how far I could get in the creation of a park in one lifetime. I determined to make a start” (Cook, 1949).</p> <p>“Eastwoodhill is very young but has made a good start and my ambition is to grow every worthwhile tree and shrub which will grow in our conditions” (Cook, 1949).</p> <p>“Our work goes to make New Zealand more beautiful and future New Zealanders’ happier. I’m not working for myself - I’m working for my country and its people whom I love” (Cook, 1963).</p> <p>“I’d got the idea after staying with wealthy relatives and their friends that I too could have lovely surroundings even if I could never have a fine home and live as they did. That was the start of the park” (Cook, 1963).</p> <p>“I first got everything the New Zealand catalogues had to offer and then searched England for new material” (Cook, undated b).</p> <p>“We hope in the near future to be growing at Eastwoodhill practically every tree and shrub available in Britain” (Cook, 1949).</p> <p>“Very large numbers of Acers are doing well here and also a great many species and varieties of Aesculus, Betula, Fagus, Fraxinus, Buddleia, Euonymus, Juniperus, Larix, Nothofagus and many other genera. We hope shortly to be growing almost all that is available in Britain in trees and shrubs and in such things as Camellias a very large collection, which you do not grow” (Cook, 1949).</p> <p>“I insist that it is an arboretum pure and simple, and a sanctuary for quiet living people and birds” (Cook, 1964b).</p> <p>“I’ve suffered all the setbacks any man could. Poor food living alone, depression through lack of money and at times through ill health through worry. I’ve never squandered money but I’ve always been in debt. I always felt I had lots of security if not money and the family motto being “Forward”. I’ve always gone forward - I’d never let it done. If to be poor is to prove oneself a failure then I’ve failed but I’ve left a heritage behind me for future generations of New Zealanders’ to enjoy” (Cook, 1963).</p>

Table 3.2 Objectives for Eastwoodhill as proposed at the first workshop

{In the third workshop report the relevant statements were extracted from the first workshop report and repeated in Table 3.2. The reader of this thesis can refer to the report of Workshop One. }

Table 3.4 Elements bordering the new area

Three Kings	Conifer backdrop with deciduous mix in front.
Orchard Hill	Conifer ridgetop, <i>Chamaecyparis lawsoniana</i> .
Outlook	Conifers with flowering gums, <i>Pinus pinea</i> , <i>Cupressus macrocarpa</i> , <i>Pinus</i> species, <i>Pinus patula</i> , <i>Eucalyptus leucoxylon</i> .
Blackwater	<i>Chamaecyparis lawsoniana</i> and mixed deciduous material
Oregon Flat	Conifers, douglas fir and lawson cypress
Pepper Flat	Conifers, lawson cypress
Basinhead	Poplars along existing fenceline, then douglas fir
China Corner	Taxodium, some pine, some deciduous, then <i>Cedrus deodara</i> and <i>Cedrus atlantica</i> below the tank.
Cook's Corner	The upper portion of Cooks corner which borders the new area is largely open with very little planting
Mexico Corner	Young planting, mixed deciduous.

Table 3.5 Proportion of each key genus represented at Eastwoodhill

Genus	No. of species at Eastwoodhill	Number in genus	Proportion represented	Concentrated plantings
<i>Acer</i>	77	150	51%	
<i>Aesculus</i>	16	13	most?	Circus, Pear Park
<i>Alnus</i>	24	35	68%	Glen Douglas
<i>Betula</i>	37	60	61%	
<i>Camellia</i>	19	82	23%	
<i>Cedrus</i>	4	4	100%	
<i>Crataegus</i>	29	100-200	13-29%	Pear Park
<i>Cupressus</i>	12	20	60%	
<i>Fagus</i>	5	10	50%	
<i>Fraxinus</i>	27	65	41%	Pear Park
<i>Ilex</i>	16	400	4%	Orchard Hill
<i>Juniperus</i>	22	60	36%	Pear Park
<i>Malus</i>	35	35	most?	
<i>Magnolia</i>	33	80	41%	
<i>Pinus</i>	60	100	60%	Orchard Hill
<i>Populus</i>	1	35	37%	
<i>Prunus</i>	43	430	10%	
<i>Pyrus</i>	6	30	20%	
<i>Quercus</i>	84	450	18%	
<i>Tilia</i>	16	50	32%	Circus, Pear Park

Notes

1. Species only considered for this comparison. Number in genus taken according to Krussman.
2. Figures should be taken as a guide only. The inclusion, or otherwise, of hybrids as species rank may distort some of the figures.

SECTION FOUR: ORCHARD HILL

Table 4.1 Known information on Douglas Cook's objectives for Orchard Hill

Hollies at Eastwoodhill: A manuscript written by Douglas Cook in 1957

"At last we have got round to the planting of our new material. The Southerly and South Easterly slopes of Orchard Hill have been fenced in and the paths, made some years ago, are now consolidated. Many more slips will no doubt occur but they can be cleared by hand. The upper two acres of the hill are extremely steep and what soil there is sits almost on rock. This upper area has been planted mostly in Douglas Fir with a few wattles for winter colour and a couple of dozen scarlet gum (*Eucalyptus ficifolia*) to brighten the dark background in summer. A block of silver birch were planted where the soil was very thin on the rock and just a few Douglas Firs divided them from a small block of perhaps a dozen scarlet oaks (*Q. coccinea*) from seed, then another break of firs and an irregular straggle wherever the soil was a little better. *Liquidamber styraciflua*..... above a small rock face we have planted *Vitis* 'Ailcanthe Bouchet' to festoon over the rock. On the far dry ridge running north east we had to resort to *Pinus radiata* to cut off the Westerly gales from our lower plantings.

When the steeper slopes were planted we came to a cold ridge facing south which I thought should suit hollies as I had never seen them doing better than in cold situations, so holes were dug 20ft apart and our hollies planted in an inverted V with the blunt end to the view point. There are over 100 species and varieties of holly but we had only 20 to put out, others common in New Zealand being in other parts of the grounds... *Ilex aquifolium* gave us three. We started with the rather coarse looking I. 'Camelliaefolia' with its large glossy dark green almost spineless leaves from 5 inches long by 2 inches wide. It is said to be one of the finest berrying hollies. *I. aquifolium* 'Ferox Aurea' extremely thorny with a yellow centre to the leaf and green spines and edge. *I. aquifolium* 'Regina Golden Queen' has a margin of gold and a green centre to the leaf, but being a male plant not much good for berry. Why not Golden King?. This is said to be the finest of the golden hollies.

I. corallina is an interesting looking species from China with lanceolate wavy spiny leaves and said to bear red berries. It is too new for much to be known about it but it is said to grow 25ft. *I. cornuta* is very old having been found in China by Fortune in 1846 but is a recent arrival in New Zealand. It is an evergreen growing only 8-10ft high and will stand remarkable dryness I find. Its leaves are very plain but have three spines. Its scarlet fruits are not generously borne.

I. dipyrrena is the Himalayan holly growing into a 40ft tree with large red berries sparsely borne. It strikes me as being just another evergreen and not by any means a 'must have'. *I. fargesii* is another Chinese evergreen up to 20ft with red berries but I think its long narrow leaves might make it a rather attractive tree. *I. fragilis*, *I. franchettii*, *I. forrestii* and *I. insignis* must be very new judging by their but little can be found about them in books. *I. insignis* comes from the Sikkim Himalayas and is certainly tender here in the young stages. If it likes its new home it should make a handsome tree. *I. latifolia* must be one of the largest growers as it attains a height of 60ft in Japan where it is said to be one of their handsomest evergreens. Its leaves are large but not spiny and its large berries are borne in great numbers. *I. pernyi* is another evergreen with red berries

from western and central China which bids fair claim to our attention in the future as a good evergreen for small gardens.

I. platyphylla var. *maderensis* is a soft evergreen from Madeira is called *I. perado* in Madeira and has dark red, almost black berries. *I. serrata* hails from Japan, is deciduous, bears quantities of red berries, branches of which are much used in Tokyo for decoration as the berries hang on well. *I. verticillata* was introduced into New Zealand by Stevens of Bulls in 1938. It is another deciduous holly from the eastern states where it is known as the black alder. It grows 6-10ft high but has a spreading habit. It is said to be the most ornamental of deciduous American hollies its glossy scarlet berries being well coloured before the leaves fall. *I. wilsoni* was discovered by Wilson in China but little is yet known about it. It has scarlet berries here. *I. rosmarinifolia* has foliage like rosemary.

In the open centre of the V up the hill was planted three *Prunus campanulata* which with their mid July rich coloured flowers should make a splash against such a sombre background. In front of these quite a large space is left for other genus as this is rather a special view point. It may later go into Magnolias. Next to the hollies a long shallow depression runs down the hill face almost due south and is in full view from the house terrace ten chains away. Here we decided to place our collection of 36 *Abies* leaving the view up the glade open so that each tree can be seen from the distance. Most *Abies* are tall rather than broad but I think even in 50 years time there may still be beauty here for, though a tree grows 150ft high it may not be more than 50ft of that in 50 years and I would expect less of most. The open glade will be left in grass and planted in daffodils.

Abies have not been much planted in New Zealand and less now than formerly because it has been found that so many are subject to bug diseases particularly in the north island. It is for that reason that I have chosen the coldest spot in the garden for them, lying steeply away from the sun and in fair ? (can't read last word). The few which have been commonly offered in New Zealand have, for the most part, been unsatisfactory and those I know are mostly half starved and of little beauty. *Abies pinsapo* in the north island seems happy and healthy and does well in the dry atmosphere at Eastwoodhill. *Picea smithiana* also thrives and makes graceful specimens but *Picea abies* is diseased as are *Picea sitchensis* and *Abies nordmanniana*. Quite probably these would be happier in the cold wet districts of our country as they hail from such climates. *Picea abies* the Norway spruce, *Picea sitchensis* largely from the western coast of Canada and *Abies nordmanniana* from the Caucasus. These we have not bothered with but are trying such things as:” (list follows here)

In summary from this manuscript I propose that the objectives for Orchard Hill were:

- evergreen background with seasonal highlights, (*Prunus campanulata*, *Eucalyptus ficifolia*).
- suitable site for a holly collection.
- the most suitable site on the arboretum for *Picea* and *Abies*.
- pine collection forming part of evergreen background.
- potential site for *Magnolia*.

Table 4.3 Ranking of plants on Orchard Hill according to Average score

Plant	Average score	Rank	Plant	Average score	Rank
<i>Abies concolor</i> 'Candicans'	9.5	1	<i>Abies firma</i>	7.5	40=
<i>Magnolia sprengeri</i> var. <i>diva</i> *	9.3	2	<i>Distylum racemosum</i>	7.5	40=
<i>Magnolia sargentiana</i> var. <i>robusta</i>	9.2	3	<i>Ilex latifolium</i> *	7.5	40=
<i>Acer henryi</i> *	9.1	4=	<i>Ilex platyphylla</i> *	7.5	40=
<i>Metasequoia glyptostroboides</i>	9.1	4=	<i>Picea bicolor</i>	7.5	40=
<i>Magnolia dawsoniana</i> *	8.7	6	<i>Pistachia chinensis</i>	7.5	40=
<i>Prunus cerasoides</i> var. <i>rubea</i> *	8.6	7	<i>Prunus campanulata</i> 'Plena' *	7.5	40=
<i>Ehretia macrophylla</i>	8.5	8=	<i>Fagus lucida</i> *	7.4	49=
<i>Poliothyrsis sinensis</i>	8.5	8=	<i>Lardizabala biternata</i>	7.4	49=
<i>Abies veitchii</i>	8.4	10=	<i>Pinus canariensis</i> *	7.4	49=
<i>Prunus</i> camp. <i>formosa</i> form*	8.4	10=	<i>Pinus densiflora umbraculifera</i> *	7.4	49=
<i>Picea koyami</i>	8.4	10=	<i>Dichotomanthes tristanii</i> carpa	7.3	53=
<i>Picea spinulosa</i>	8.4	10=	<i>Parasyringa sempervirens</i>	7.3	53=
<i>Abies spectabilis</i> var. <i>brevifolia</i>	8.2	14=	<i>Picea brachytyla</i>	7.3	53=
<i>Prunus sargentiana</i> *	8.2	14=	<i>Pinus montana</i> var. <i>uncinata</i> *	7.3	53=
<i>Picea morrisonicola</i>	8.2	14=	<i>Pinus tabul.</i> var. <i>yunnanensis</i> *	7.3	53=
<i>Cornus nutallii</i>	8.1	17=	<i>Quercus canariensis</i> *	7.3	53=
<i>Ginkgo biloba</i>	8.1	17=	<i>Acer orientale</i> *	7.2	59=
<i>Ilex insignis</i> *	8.1	17=	<i>Abies numidica</i>	7.2	59=
<i>Picea obovata</i>	8.1	17=	<i>Pinus koraiensis</i> *	7.2	59=
<i>Acer rufinerve</i> f. <i>albolimbatum</i> *	8.0	21=	<i>Pinus tabuliformis</i> *	7.2	59=
<i>Picea complanata</i> f. <i>latisquamea</i>	8.0	21=	<i>Prunus ilicifolia</i> *	7.2	59=
<i>Abies holophylla</i>	8.0	21=	<i>Prunus subhirtella</i> 'Ascendens'	7.2	59=
<i>Abies concolor</i> 'Glauca'	8.0	21=	<i>Quercus velutina</i> *	7.2	59=
<i>Abies amabilis</i>	8.0	21=	<i>Cupressus ducloxiana</i> *	7.1	66=
<i>Quercus coccinea splendens</i> *	7.9	26=	<i>Pinus jeffreyi</i> *	7.1	66=
<i>Symplocos paniculata</i>	7.8	27=	<i>Abies georgiana</i>	7.0	68=
<i>Betula platyphylla</i> var. <i>japonica</i> *	7.8	27=	<i>Fagus sylvatica</i> 'Rohanni' *	7.0	68=
<i>Carpinus japonica</i>	7.8	27=	<i>Hamamelis vernalis</i>	7.0	68=
<i>Fagus grandifolia</i> *	7.8	27=	<i>Ilex fargesii</i> *	7.0	68=
<i>Prunus campanulata</i> *	7.7	31=	<i>Photinia beauverdiana</i>	7.0	68=
<i>Pinus parviflora</i> *	7.7	31=	<i>Prunus lyonii</i> *	7.0	68=
<i>Picea orientalis</i>	7.7	31=	<i>Quercus baetica</i> *	7.0	68=
<i>Abies bracteata</i>	7.7	31=			
<i>Abies procera</i>	7.7	31=			
<i>Prunus serrula</i> *	7.6	36=			
<i>Broussonetia papyrifera</i>	7.6	36=			
<i>Eucryphia moorei</i>	7.6	36=			
<i>Ilex corallina</i> *	7.6	36=			
<i>Acer amplum</i> *	7.5	40=			
<i>Abies concolor</i>	7.5	40=			

* Key genus

Table 4.4 Ranking of plants on Orchard Hill according to Botanical score

Plant	Botanical score	Rank	Aesth score	Plant	Botanical score	Rank	Aesth score
<i>Picea obovata</i>	9.6	1	6.4	<i>Ginkgo biloba</i>	7.8	39=	8.4
<i>Picea koyami</i>	9.4	2	7.4	<i>Eucryphia moorei</i>	7.6	42=	7.6
<i>Acer henryi</i>	9.2	3=	9.2	<i>Ilex latifolia</i>	7.6	42=	7.4
<i>Abies holophylla</i>	9.2	3=	7.0	<i>Ilex platyphylla</i>	7.6	42=	7.4
<i>Ehretia macrophylla</i>	9.2	3=	7.8	<i>Pinus tabuliformis</i>	7.6	42=	6.8
<i>Abies concolor</i> 'Candicans'	9.1	6	9.8	<i>Pinus nigra ssp. caramanica</i>	7.6	42=	5.6
<i>Acer orientale</i>	9.0	7=	5.5	<i>Pinus koraiensis</i>	7.6	42=	6.8
<i>Dichotomanthes tristanii</i> carp.	9.0	7=	5.6	<i>Pinus montana var. uncinata</i>	7.6	42=	6.8
<i>Lardizabala bitemata</i>	9.0	7=	5.8	<i>Prunus camp. formosa f.</i>	7.6	42=	9.2
<i>Metasequoia glyptostroboides</i>	9.0	7=	9.2	<i>Quercus baetica</i>	7.6	42=	6.4
<i>Picea bicolor</i>	9.0	7=	6.0	<i>Abies cephalonica</i>	7.4	51=	6.4
<i>Picea comp. f. latisquamea</i>	9.0	7=	7.0	<i>Betula platy. var. japonica</i>	7.4	51=	8.2
<i>Picea morrisonicola</i>	9.0	7=	7.4	<i>Cupressus ducloxiana</i>	7.4	51=	6.8
<i>Poliathyrsis sinensis</i>	9.0	7=	8.0	<i>Ilex casine</i>	7.4	51=	6.0
<i>Distylum racemosum</i>	8.8	15=	6.2	<i>Picea brachytyla</i>	7.4	51=	7.2
<i>Magnolia sprengeri var. diva</i>	8.8	15=	9.8	<i>Picea orientalis</i>	7.4	51=	8.0
<i>Symplocos paniculata</i>	8.8	15=	6.8	<i>Prunus sargentiana</i>	7.4	51=	9.0
<i>Mag. sargentiana var. robusta</i>	8.6	18=	9.8	<i>Quercus velutina</i>	7.4	51=	7.0
<i>Parasyringa sempervirens</i>	8.6	18=	6.0	<i>Pinus tab. var. yunnanensis</i>	7.4	51=	7.2
<i>Acer amplum</i>	8.4	20=	6.6	<i>Cornus nutallii</i>	7.2	60=	9.0
<i>Glochidion sp.</i>	8.4	20=	5.4	<i>Euonymus tingens</i>	7.2	60=	6.6
<i>Magnolia dawsoniana</i>	8.4	20=	9.0	<i>Ilex corallina</i>	7.2	60=	8.0
<i>Broussonetia papyrifera</i>	8.2	23=	7.0	<i>Pinus canariensis</i>	7.2	60=	7.6
<i>Fagus grandifolia</i>	8.2	23=	7.4	<i>Pinus densiflora</i>	7.2	60=	6.2
<i>Abies amabilis</i>	8.0	25=	7.8	<i>Pinus dens. umbraculifera</i>	7.2	60=	7.6
<i>Abies bracteata</i>	8.0	25=	7.4	<i>Quercus canariensis</i>	7.2	60=	7.4
<i>Abies concolor</i> 'Glaucu'	8.0	25=	8.0	<i>Acer ruf. f. albolimbatum</i>	7.0	67=	8.0
<i>Abies georgii</i>	8.0	25=	6.0	<i>Abies concolor</i>	7.0	67=	8.0
<i>Abies numidica</i>	8.0	25=	6.4	<i>Abies firma</i>	7.0	67=	7.8
<i>Abies procera</i>	8.0	25=	7.4	<i>Hamamelis vernalis</i>	7.0	67=	7.0
<i>Abies spect. var. brevifolia</i>	8.0	25=	8.5	<i>Photinia villosa var. laevis</i>	7.0	67=	6.4
<i>Abies veitchii</i>	8.0	25=	8.8	<i>Pinus rigida</i>	7.0	67=	6.2
<i>Ilex insignis</i>	8.0	25=	8.0	<i>Pistachia chinensis</i>	7.0	67=	8.0
<i>Prunus ilicifolia</i>	8.0	25=	6.4	<i>Prunus campanulata</i>	7.0	67=	8.4
<i>Prunus lyonii</i>	8.0	25=	6.0	<i>Quercus cocc. splendens</i>	7.0	67=	8.8
<i>Picea wilsonii</i>	8.0	25=	6.6				
<i>Picea spinulosa</i>	8.0	25=	8.8				
<i>Pinus parviflora</i>	8.0	25=	7.4				
<i>Carpinus japonica</i>	7.8	39=	7.8				
<i>Fagus lucida</i>	7.8	39=	7.0				

Table 4.5: Ranking of plants on Orchard Hill according to Aesthetic score

Plant	Aesthetic score	Rank	Botan. score	Plant	Aesthetic score	Rank	Botan. score
<i>Abies concolor</i> 'Candicans'	9.8	1=	9.1	<i>Prunus sub.</i> 'Fukubana'	7.6	39=	6.0
<i>Mag. sargentiana</i> var. <i>robusta</i>	9.8	1=	8.6	<i>Abies bracteata</i>	7.4	42=	8.0
<i>Magnolia sprengeri</i> var. <i>diva</i>	9.8	1=	8.8	<i>Abies procera</i>	7.4	42=	8.0
<i>Acer henryi</i>	9.2	4=	9.2	<i>Cinnamomum camphorum</i>	7.4	42=	5.4
<i>Metasequoia glyptostroboides</i>	9.2	4=	9.0	<i>Fagus grandifolia</i>	7.4	42=	8.2
<i>Prunus camp.</i> <i>formosa</i> f.	9.2	4=	7.6	<i>Ilex latifolia</i>	7.4	42=	7.6
<i>Prunus cerasoides</i> var. <i>rubea</i>	9.2	4=	8.0	<i>Ilex platyphylla</i>	7.4	42=	7.6
<i>Acer ruf.</i> f. <i>albolimbatum</i>	9.0	8=	7.0	<i>Picea morrisonicola</i>	7.4	42=	9.0
<i>Abelia grandiflora</i>	9.0	8=	5.2	<i>Picea koyami</i>	7.4	42=	9.4
<i>Cornus nutallii</i>	9.0	8=	7.2	<i>Prunus</i> 'Ivensii'	7.4	42=	5.6
<i>Magnolia dawsoniana</i>	9.0	8=	8.4	<i>Quercus canariensis</i>	7.4	42=	7.2
<i>Prunus sargentiana</i>	9.0	8=	7.4	<i>Ilex fargesii</i>	7.2	52=	6.8
<i>Abies veitchii</i>	8.8	13=	8.0	<i>Magnolia kobus</i>	7.2	52=	6.4
<i>Picea spinulosa</i>	8.8	13=	8.0	<i>Photinia beauverdiana</i>	7.2	52=	6.8
<i>Quercus coccinea splendens</i>	8.8	13=	7.0	<i>Picea brachytyla</i>	7.2	52=	7.4
<i>Abies spect.</i> var. <i>brevifolia</i>	8.5	16	8.0	<i>Prunus. serr.</i> 'Hisakura'	7.2	52=	5.2
<i>Ginkgo biloba</i>	8.4	17=	7.8	<i>Quercus rubra</i>	7.2	52=	6.6
<i>Prunus campanulata</i>	8.4	17=	7.0	<i>Abies holophylla</i>	7.0	58=	9.2
<i>Prunus serrula</i>	8.4	17=	6.8	<i>Broussonetia papyrifera</i>	7.0	58=	8.2
<i>Betula platy.</i> var. <i>japonica</i>	8.2	20=	7.4	<i>Fagus lucida</i>	7.0	58=	7.8
<i>Ilex insignis</i>	8.2	20=	8.0	<i>Hamamelis vernalis</i>	7.0	58=	7.0
<i>Prunus sub.</i> 'Ascendens'	8.2	20=	6.2	<i>Mag. kobus</i> var. <i>borealis</i>	7.0	58=	6.0
<i>Prunus campanulata</i> 'Plena'	8.2	20=	6.8	<i>Mag. soulangiana</i> 'Brozonii'	7.0	58=	4.8
<i>Abies amabilis</i>	8.0	20=	8.0	<i>Picea compl. f. latisquamea</i>	7.0	58=	9.0
<i>Abies concolor</i>	8.0	20=	7.1	<i>Prunus juddii</i>	7.0	58=	5.6
<i>Abies concolor</i> 'Glauca'	8.0	20=	8.0	<i>Quercus velutina</i>	7.0	58=	7.4
<i>Abies firma</i>	8.0	20=	7.1				
<i>Ilex corallina</i>	8.0	20=	7.2				
<i>Picea orientalis</i>	8.0	20=	7.4				
<i>Prunus subhirtella</i> 'Pendula'	8.0	20=	5.8				
<i>Prunus yedoensis</i> hyd	8.0	20=	5.6				
<i>Pistachia chinensis</i>	8.0	20=	7.0				
<i>Poliiothysis sinensis</i>	8.0	20=	9.0				
<i>Carpinus japonica</i>	7.8	34=	7.8				
<i>Ehretia macrophylla</i>	7.8	34=	9.2				
<i>Fagus sylvatica</i> 'Rohanni'	7.8	34=	6.2				
<i>Magnolia veitchii</i>	7.8	34=	5.2				
<i>Prunus serrulata</i> 'Tai Haku'	7.8	34=	6.0				
<i>Eucryphia moorei</i>	7.6	39=	7.6				
<i>Photinia glabra</i> 'Robusta'	7.6	39=	6.0				

Table 4.6: Arboretum key genera in Orchard Hill

Key genus	Present	Number of species and cultivars on OH	Number of species and cultivars on OH as % of number of species and cultivars at Eastwoodhill	Are the plants sole examples
<i>Acer</i>	Yes	5	3%	Yes
<i>Aesculus</i>	Yes	1	4%	Yes
<i>Alnus</i>	No	0	-	
<i>Betula</i>	Yes	1	2%	Yes
<i>Camellia</i>	No	0	-	
<i>Cedrus</i>	No	0	-	
<i>Crataegus</i>	Yes	5	13%	Yes
<i>Cupressus</i>	Yes	2	11%	Yes
<i>Fagus</i>	Yes	3	17%	Yes
<i>Fraxinus</i>	No	0	-	
<i>Ilex</i>	Yes	11	47%	Yes
<i>Juniperus</i>	Yes	4	13%	No
<i>Magnolia</i>	Yes	8	13%	Yes
<i>Malus</i>	Yes	8	13%	Yes
<i>Pinus</i>	Yes	17	28%	Yes
<i>Populus</i>	Yes	1	3%	No
<i>Prunus</i>	Yes	21	19%	Yes
<i>Pyrus</i>	No	0	-	
<i>Quercus</i>	Yes	5	5%	Yes
<i>Tilia</i>	No	0	-	

In terms of number represented the most important key genera are *Prunus*, *Pinus* *Ilex*. In terms of percentage representation the most important key genera are, *Ilex*, *Pinus*, *Prunus*, *Fagus*, *Juniperus*, *Magnolia*, *Malus*, *Crataegus*.

Table 4.7: Park key genera for Orchard Hill

Genus	Average score	No. of species and cultivars on OH (N)	N as a percentage of number of species and cultivars of that genus in current collection	Are the plants sole examples?
<i>Abies</i>	8.20	14	37%	Yes
<i>Berberis</i>	6.40	8	42%	Yes
<i>Picea</i>	7.89	10	35%	Yes

In terms of number the most important genera (arboretum and park) are, *Prunus* 21, *Pinus* 17, *Abies* 14, *Ilex* 11, *Picea* 10, *Magnolia* 8, *Malus* 8, *Berberis* 8.

In terms of percentage the most important genera (arboretum and park) are: *Ilex* 47%, *Berberis* 42%, *Abies* 37%, *Picea* 35%, *Pinus* 28%, *Prunus* 19%, *Fagus* 17%.

Table 4.8: List of plants previously existing on Orchard Hill

Cross path Dawson's walk to Sargents walk (Q.coccinea splendens to Pistachia). Starting at Q. coccinea end, downhill side of this path only. Source: notebook six.

(Existing *Quercus coccinea splendens*)

Euonymus latifolius

Euonymus oxyphyllus

Acer campbellii

(Existing *Quercus baetica*)

Pyrus conradinae 'Semi Plena' - dead according to Cook

Euonymus planipes sachalinensis ?

(Existing *Betula platyphylla*)

Betula albosinensis - dead according to Cook

Betula schmidtii - dead according to Cook

Betula populifolia - dead according to Cook

Meliosma pendens

Quercus lamellosa

(Existing *Gleditsia japonica*)

Pinus peuce?

Pinus lambertiana

Vitis sp.

Pyrus KW7746

Euonymus planipes

Alnus incana 'Ramulis Coccineis'

Sorbus vilmoriniana

(Existing *Magnolia sargentiana* var. *robusta*)

Dipelta ventricosa

Acer pictum

Prunus fasciculata

Prunus ambigua

(Existing *Prunus hillieri*)

Stachyurus himalaicus

Fagus ferruginea

Prunus campanulata 'Plena'

Sophora secundiflora

Prunus canescens

(Existing *Lardizabala*)

Myrica pennsylvanica

Acer grandidentatum

Acer tenellum

2 *Carpinus japonica*

(Existing *Fagus lucida*)

Cercis sinensis

(Existing *Fagus* 'Rohanni')

Dawsons walk starting from tank end, and then up the cross path, uphill side

Source: notebook six.

Magnolia mollicomata

(Existing *Acer amplum*)

Malus prunifolia 'Hornet'

Acer hersii

Acer crataegifolium

Acer pensylvanicum

Acer davidi 'Horizontalis'

(Existing *Laburnum* 'Latest and Longest')

Acer laevigatum

Ginkgo biloba 'Pendula'

(Existing *Euonymus tingens*)

Euonymus oxyphyllus

Malus coronaria 'Charlottae'

Malus soulardii

Orixa japonica

Osmanthus fragrans

(Existing *Photinia robusta*)

Dawsons walk, uphill side, between it and spruce end, starting from tank end

Source: notebook six.

(Existing *Prunus ilicifolia*)

Magnolia campbellii

Myrica cerifera

Magnolia mollicomata 'Fastigiata'

(Existing *Magnolia cordata*)

Magnolia wilsoni

Hartia sinensis

Diervilla

Philadelphus sargentianus

Magnolia glauca

Drymis winteri

(Existing *Malus* 'Mammoth')

Magnolia liliflora

Magnolia Highdownensis - dead

Magnolia parviflora -dead

Magnolia officinalis

Magnolia hypoleuca

(Existing *Prunus campanulata* 'Plena')

Prunus serrulata f. *longipes*

Philadelphus sericanthus

Prunus pudum

(Existing *Magnolia kobus* var. *borealis*)

Prunus padus 'Albertii'

(Existing *Magnolia dawsoniana*)

Malus glaucescens

Cleyera fortunei - dead

Eriobotrya prinoidea - dead

(Existing *Ehretia*)

Magnolia salicifolia

Ilex dipyrrena

Schinus terebinthifolia

Ilex verticillata

Additional pines that were planted among the group at the end of the hill

Pinus edulis, *P. montana*, *P. sinensis*, *P. strobus*,
P. flexilis, *P. cembra*

Plants that were uphill of the spruce end track, starting far end and moving towards the tank.

Source: notebook six.

Picea group

Taxodium distichum

Carya pecan

Picea breweriana

Abies group

Abies kawakamii

Abies squamata

Abies concolor 'Compacta'

Abies lasiocarpa var. *arizonica*

Abies recurvata

Picea pungens 'Moerheimii'

Abies sutchuenensis alpine form

Abies koreana

Abies forrestii

Abies nobilis 'Glauca'

A. balsamea -dead

Abies grandis

Abies lasiocarpa

Abies gamblei

Holly group

Ilex forrestii

Ilex species Yu

Ilex wilsoni

Table 4.9: Genera on Orchard Hill, taking into account previous plantings

Genus	Currently existing	Previously existing	Current number on OH	Previous number on OH	% survival
<i>Abies</i>	Yes	Yes	14	14+12=26	53
<i>Acer</i>	Yes	Yes	5	5+9=14	35
<i>Aesculus</i>	Yes	Yes	1	1	100
<i>Alnus</i>	No	Yes	0	1	0
<i>Berberis</i>	Yes	Yes	8	?	
<i>Betula</i>	Yes	Yes	1	1+3=4	25
<i>Camellia</i>	No	No	-	-	-
<i>Cedrus</i>	No	Yes	0	1	0
<i>Crataegus</i>	Yes	Yes	5	5	100
<i>Cupressus</i>	Yes	Yes	2	2	100
<i>Euonymus</i>	Yes	Yes	1	1+5=6	16
<i>Fagus</i>	Yes	Yes	3	3+1=4	75
<i>Fraxinus</i>	Yes	Yes	1	1	100
<i>Ilex</i>	Yes	Yes	11	11	100
<i>Juniperus</i>	Yes	Yes	4	4	100
<i>Magnolia</i>	Yes	Yes	8	8+11=19	42
<i>Malus</i>	Yes	Yes	8	8+3=11	72
<i>Picea</i>	Yes	Yes	10	10+1=11	90
<i>Pinus</i>	Yes	Yes	17	17+2=19	89
<i>Populus</i>	Yes	Yes	1	?	
<i>Prunus</i>	Yes	Yes	21	21+9=30	70
<i>Pyrus</i>	No	Yes	0	-	
<i>Quercus</i>	Yes	Yes	5	5+1=6	83
<i>Tilia</i>	No	No	0	-	

Notes.

1. This table does not include the birch belt.
2. *Prunus* results are debatable due to the number of unidentified *Prunus*.

In terms of number the most important genera are,

Present: *Prunus* 21, *Pinus* 17, *Abies* 14, *Ilex* 11, *Picea* 10, *Magnolia* 8, *Malus* 8, *Berberis* 8,

Previous: *Prunus* 30, *Abies* 26, *Magnolia* 19, *Pinus* 19, *Acer* 14, *Picea* 11, *Ilex* 11, *Malus* 11,

In terms of percentage survival the most successful of these genera are:

Ilex 100%, *Picea* 90%, *Pinus* 89%, *Malus* 72%, *Prunus* 70%, *Abies* 53%, *Magnolia* 42%, *Acer* 35%

It is notable that *Euonymus* survived poorly while *Crataegus* did well even though both could be classed as short lived groups.

Table 4.10: Actual heights and expected heights of tree on Orchard Hill

Plant	Reference number	Botanical score	Aesthetic score	Actual height	Expected height	Height index
<i>Abelia grandiflora</i>		5.2	9.0	3.7m	1.5-3m	4.5
<i>Abies amabilis</i>	OH667	8.0	7.8	11.4m	70m,76m,24-46m	1
<i>Abies bracteata</i>	OH637	8.0	7.4	23.8m	12-30m, 30-45m	2.5
<i>Abies cephalonica</i>	OH631	7.4	6.4	24.4m	20-30m, 18m	3.0
<i>Abies conolor</i>	OH632	7.1	8.0	12.1m	21-50m, 12-15m	2.5
<i>Abies concolor</i>	OH670	7.1	8.0	12.5m	21-50m, 12-15m	2.5
<i>Abies concolor</i> 'Candicans'		9.1	9.8	13.5m	see species	2.5
<i>Abies concolor</i> 'Glauca'	OH635	8.0	8.0	16.6m	see species	2.5
<i>Abies firma</i>	OH636	7.1	7.8	18.4m	45m, 50m	1.5
<i>Abies georgiana</i>	OH672	8.0	6.0	8.7m	20-40m	1.5
<i>Abies holophylla</i>	OH668	9.2	7.0	17.7m	35-45m	2.0
<i>Abies numidica</i>	OH669	8.0	6.4	7.5m	15-20m, 13-18m	1.5
<i>Abies procera</i>		8.0	7.4	-	30-45m, 45-60m	-
<i>Abies spectabilis</i> var. <i>brevifolia</i>	OH671	8.0	8.5	5.5m	50m, 50m	0.5
<i>Abies veitchii</i>	OH634	8.0	8.8	15.7m	25m, 30m	2.0
<i>Acer amplum</i>	OH555	8.4	6.6	12.6m	10-25m	3.0
<i>Acer henryi</i>	OH556	9.2	9.2	5.9m	10m, 9m	2.0
<i>Acer negundo</i>		6.2	5.7	-	10-15m, 20m, 20m	-
<i>Acer orientale</i>	OH510	9.0	5.5	11.9m	1-4m, 9m	4.5
<i>Acer rufinerve</i> f. <i>albolimbatum</i>	OH569	7.0	9.0	-	6-9-13m	-
<i>Aesculus hippocastanum</i> 'Pumilum'	OH573	6.4	5.0	4.3m	?	-
<i>Arbutus unedo</i>	OH506	5.0	6.4	9.0m	10m, 4-9m	3.0
<i>Azara integrifolia</i>	OH650	6.4	6.0	5.3m	5-10m	3.0
<i>Berberis hypokerina</i>	OH603	6.2	6.4	-		-
<i>Berberis panlanensis</i>	OH609	5.6	4.4	2.2m	0.3-0.4m	5.0
<i>Berberis sargentiana</i>	OH608	6.0	6.2	1.8m	1.5m, 1.5m	3.5
<i>Berberis siano-china</i>	OH597	4.4	5.0	5.5m		-
<i>Berberis yunnanensis</i>	OH590	5.2	5.0	3.3m	2m, 1.5m	4.5
<i>Berberis linearifolia</i>	OH599			5-6m		-
<i>Berberis</i>	OH589			3m		-
<i>Berberis</i>	OH594			4m		-
<i>Berberis</i>	OH610			1.5m		-
<i>Berberis</i>	OH611			2m		-
<i>Berberis lempergiana</i>	OH604			2.5m		-
<i>Betula platyphylla</i> var. <i>japonica</i>	OH677	7.4	8.2	21.2m	25m	3.0
<i>Broussonetia papyrifera</i>	OH653	8.2	7.0	7.5	15m, 15m, 3m	2.0
<i>Carpinus betulus</i>	OH557	6.8	6.8	13.9m	20m, 6-11-30m	2.5
<i>Carpinus japonica</i>	OH571	7.8	7.8	13.8m	15m, 2-4-10m	3.0
<i>Cinnamomum camphora</i>	OH702	5.4	7.4	-	12m	-
<i>Cornus nutalli</i>	OH552	7.2	9.0	6.8m	25m, 15m	1.5
<i>Crataegus missouriensis</i>	OH602	5.6	6.0	8.9m	4.5-9m	3.0
<i>Crataegus oxycantha</i> 'Fructo-Lutea'		5.2	5.8	4.8m	4.5m	3.5
<i>Crataegus oxycantha</i> 'Pauls Scarlet'	OH587	5.4	6.6	7.7	4.5m	4.5

Plant	Reference number	Botanical score	Aesthetic score	Actual height	Expected height	Height index
<i>Crataegus oxycantha</i> 'Puniceus'	OH598	5.2	6.6	9.3m	4.5m	5.0
<i>Crataegus punctata</i>	OH601	5.2	5.4	5.4m	9m, 6-9m	2.5
<i>Cupressus ducloxiiana</i>	OH663	7.4	6.8	20.9m	10m, 45m	3.0
<i>Chamaecyparis lawsoniana</i> 'Naberi'	OH662	4.0	5.2	2.0m	10m	1.0
<i>Dichotomanthes tristaniicarpa</i>	OH647	9.0	5.6	3.8m	6m	2.0
<i>Distylum racemosum</i>	OH563	8.8	6.2	6.3m	18m	1.5
<i>Ehretia macrophylla</i>	OH516	9.2	7.8	12.5m	5-6m	5.0
<i>Elaeagnus pungens</i> 'Maculata'	OH605	5.0	5.4	-	4m, 4.5m	-
<i>Eucalyptus sideroxylon</i>		5.4	5.8	-	-	-
<i>Eucryphia moorei</i>	OH535	7.6	7.6	8.2m	4.5-9m	3.0
<i>Eucryphia moorei</i>	OH533	7.6	7.6	2.2m	4.5-9m	1.0
<i>Euonymus tingens</i>	OH564	7.2	6.6	12.1m	4-5m, 6-8m	4.5
<i>Fagus grandifolia</i>	OH567	8.2	7.4	6.3m	18-24m, 20-30m	1.0
<i>Fagus lucida</i>	OH570	7.8	7.0	12.7m	10m	3.5
<i>Fagus sylvatica</i> 'Rohanni'	OH572	6.2	7.8	14.9m	-	-
<i>Ginkgo biloba</i>		7.8	8.4	-	40m	-
<i>Gleditsia japonica</i>	OH591	6.8	5.8	7.3m	20m, 18-21m	1.5
<i>Gleditsia triacanthos f. inermis</i>	OH595	6.2	6.8	21.5m	20m, 30m, 24m	3.0
<i>Glochidion sp.</i>	OH629	8.4	5.4	-	-	-
<i>Hamamelis vernalis</i>		7.0	7.0	-	2m	-
<i>Ilex</i>	OH622			6.9m		-
<i>Ilex</i>	OH625			10.2m		-
<i>Ilex wilsoni</i>	OH630			11.6m		-
<i>Ilex aquifolium</i>	OH616	4.6	6.0	3.1m	15m, 16m	1.0
<i>Ilex casine</i>	OH623	7.4	6.0	9.6m	9m, 8m, 12m	3.0
<i>Ilex cornuta</i>	OH621	6.2	6.2	6.1m	2-3m, 2.4-3m	5.0
<i>Ilex corallina</i>	OH620	7.2	8.0	10.8m	10m	3.0
<i>Ilex fargesii</i>	OH624	6.8	7.2	7.3m	3-5m, 4.5-6m	4.0
<i>Ilex insignis (kingiana)</i>	OH627	8.0	8.2	12.6m	3-9m	4.0
<i>Ilex latifolium</i>	OH628	7.6	7.4	9.2m	12-15m, 15-18m	2.0
<i>Ilex platyphylla</i>	OH626	7.6	7.4	17.9m	9m	5.0
<i>Juglans regia</i>	OH709	5.4	5.8	-	30m	-
<i>Juglans cinerea</i>	OH707	6.6	6.2	14.5m	12-21m, 9-18, 30m	3.0
<i>Juniperus chinensis</i>		5.6	5.6	-	20m, 18m	-
<i>Juniperus chinensis</i> 'Pyramidalis'	OH664	5.2	5.8	-	-	-
<i>Juniperus x media</i> 'Blauuw'		5.0	5.8	-	1.5m	-
<i>Juniperus squamata</i> 'Meyeri'		5.0	6.4	-	5-6m, 3m, 8m	-
<i>Lardizabala bitemata</i>	OH648	9.0	5.8	-	-	-
<i>Ligustrum confusum</i>	OH592	6.6	5.6	7.3m	12m, 12m	2.0
<i>Ligustrum lucidum</i>	OH586	4.8	5.8	3.4m	10m, 3-6m, 10m	1.5
<i>Ligustrum sinensis</i>	OH651	5.4	5.8	3.1m	4m, 6m, 4-6m	2.0
<i>Magnolia cordata</i>	OH536	6.8	5.6	8.7m	1-2m, 1-4m, 7m	5.0
<i>Magnolia dawsoniana</i>	OH538	8.4	9.0	13.6m	6-10m, 7-12m, 7-12	3.5
<i>Magnolia kobus</i>	OH649	6.4	7.2	13.9m	9m, 9m, 21m	3.5
<i>Magnolia kobus var. borealis</i>	OH544	6.0	7.0	13.6m	25m, 21m	2.0

Plant	Reference number	Botanical score	Aesthetic score	Actual height	Expected height	Height index
<i>Magnolia sargentiana</i> var. <i>robusta</i>	OH568	8.6	9.8	14.4m	10m	4.0
<i>Magnolia soulangiana</i> 'Brozzonii'	OH654	4.8	7.0	8.3m	10m	2.5
<i>Magnolia sprengeri</i> var. <i>diva</i>	OH550	8.8	9.8	7.5m	5-10m	3.0
<i>Magnolia veitchii</i>	OH652	5.2	7.8	6.3m	9-12m	1.5
<i>Malus</i>	OH618			-		-
<i>Malus glaucescens</i>	OH519			7.5m		-
<i>Malus</i>	OH520			9.6m		
<i>Malus</i> 'Gibbs Golden Drop'	OH524	4.2	6.6	6.9m	4.5-9m	3.0
<i>Malus</i> 'Mammoth'	OH549	4.4	6.2	-	-	-
<i>Malus prunifolia</i> 'Fastigiata'	OH518	6.2	6.4	4.1m	5-10m	2.5
<i>Malus</i> 'Red Tip'	OH522	4.8	6.4	6.1m	-	-
<i>Malus</i> 'Simcoe'	OH534	4.8	6.2	-	4.5-9m	-
<i>Malus soulardii</i>	OH517	5.4	6.4	7.8m	-	-
<i>Malus spectabilis</i> 'Flore Plena'	OH523	4.6	6.6	5.3m	8m, 7m, 9m	2.0
<i>Metasequoia glyptostroboides</i>		9.0	9.2	-	35m	-
<i>Olea verrucosa</i>	OH537	6.6	5.6	9.1m	-	-
<i>Parasyringa sempervirens</i>	OH542	8.6	6.0	3.1m	2.5m, 1.8-3m	3.5
<i>Philadelphus pubescens</i>	OH548	6.4	6.6	6.5m	5m, 3-6m	3.5
<i>Philadelphus</i>	OH656			2.7m	-	-
<i>Photinia beauverdiana</i>	OH679	6.8	7.2	11.7m	9m, 8m	3.5
<i>Photinia x fraseri</i> 'Robusta'	OH561	6.0	7.6	9.4m	-	-
<i>Photinia villosa</i> var. <i>laevis</i>	OH606	7.0	6.4	9.1m	5m	4.0
<i>Picea bicolor</i>	OH642	9.0	6.0	8.6m	40m	1.0
<i>Picea brachytyla</i>	OH639	7.4	7.2	18.2m	20-25m	2.5
<i>Picea complanata</i> f. <i>latisquamea</i>	OH644	9.0	7.0	16.6m	-	-
<i>Picea koyami</i>	OH674	9.4	7.4	11.7m	10m, 12-18m	3.0
<i>Picea morrisonicola</i>	OH643	9.0	7.4	16.5m	30m	1.5
<i>Picea obovata</i>	OH640	9.6	6.4	6.3m	30m	1.0
<i>Picea orientalis</i>	OH576	7.4	8.0	27.8m	35m, 60m	2.0
<i>Picea sitchensis</i>	OH673	6.0	6.0	6.0m	30m, 40-60m	1.0
<i>Picea spinulosa</i>	OH645	8.0	8.8	15.6m	45m, 60m	1.0
<i>Picea wilsoni</i>	OH646	8.0	6.6	8.0m	25m	1.5
<i>Pinus</i>	OH581			7.5m		-
<i>Pinus</i>	OH582			15.2m		-
<i>Pinus canariensis</i>	OH579	7.2	7.6	28.1m	24m, 30m, 20-30m	3.0
<i>Pinus contorta</i> var. <i>contorta</i>	OH574	5.4	4.4	fallen		-
<i>Pinus densiflora</i>	OH504	7.2	6.2	22.5m	20-30m, 30-35m	3.0
<i>Pinus densiflora</i> <i>umbraculifera</i>	OH502	7.2	7.6	17.4m	4m, 4m	5.0
<i>Pinus halepensis</i>	OH501	6.6	6.2	25.0m	20m, 25m, 9-24m	3.5
<i>Pinus jeffreyi</i>	OH578	6.8	7.4	21.1m	20-60m, 50m	3.0
<i>Pinus koraiensis</i>	OH580	7.6	6.8	no top	20-30m	-
<i>Pinus montana</i> var. <i>uncinata</i>		7.6	6.8	5.3m	10-25m, 20m, 15m	1.0
<i>Pinus nigra</i> var. <i>caramanica</i>	OH600	7.6	5.6	20.1m	30m, 41m	1.5
<i>Pinus nigra</i> var. <i>coriscana</i>	OH503	6.0	5.8	17.4m	40m	1.5
<i>Pinus parviflora</i>	OH505	8.0	7.4	9.0m	9-24, 6-15, 15-30m	3.0

Plant	Reference number	Botanical score	Aesthetic score	Actual height	Expected height	Height index
<i>Pinus rigida</i>	OH584	7.0	6.2	23.9m	30m, 15-18,10-25	3.0
<i>Pinus sylvestris f. argentea</i>	OH675	6.6	6.8	17.4m	-	-
<i>Pinus tabuliformis</i>	OH577	7.6	6.8	25.7m	25m, 25m, 25m,	3.0
<i>Pinus tabuliformis var. yunnanensis</i>	OH676	7.4	7.2	20.4m	30m, 10-15m	3.0
<i>Pistachia chinensis</i>	OH500	7.0	8.0	11.2m	20m	1.5
<i>Poliathyrsis sinensis</i>	OH617	9.0	8.0	12.4m	15m habitat, 3m	3.0
<i>Populus yunnanensis</i>		6.0	7.0	-	-	-
<i>Prunus campanulata</i>	OH695	7.0	8.4	-	7m, 9m, 6-9m	-
<i>Prunus campanulata</i> 'Plena'	OH546	6.8	8.2	7.5m	7m, 9m, 6-9m	3.0
<i>Prunus campanulata formosa form</i>	OH559	7.6	9.2	11.6	7m, 9m, 6-9m	3.5
<i>Prunus cerasoides var. rubea</i>	OH687	8.0	9.2	14.3m	24m	2.0
<i>Prunus x decora</i>	OH566	6.0	6.0	10.5m	-	-
<i>Prunus dulcis</i> 'DXL'	OH521	5.6	6.0	7.6m	10m	2.0
<i>Prunus dulcis</i> 'Monovale'	OH528	5.2	6.0	9.4m	10m	2.5
<i>Prunus ilicifolia</i>	OH553	8.0	6.4	7.5m	7m, 5-9m, 6-9m	3.0
<i>Prunus x ivensii</i>	OH558	5.6	7.4	15.2m	-	-
<i>Prunus x juddii</i>	OH530	5.6	7.0	7.4m	4.5-9m	3.0
<i>Prunus lyonii</i>	OH554	8.0	6.0	dead		-
<i>Prunus sargentiana</i>	OH541	7.4	9.0	4.3m	15-18m	1.0
<i>Prunus serrula</i>	OH551	6.8	8.4	4.9m	7m, 9-15m	1.5
<i>Prunus serrulata</i> 'Asano'	OH507			6.5m	4.5-9m	3.0
<i>Prunus serrulata</i> 'Benden'	OH512	5.0	6.6	11.3m	12m	3.0
<i>Prunus serrulata</i> 'Hisakura'	OH685	5.2	7.2	9.9m	4.5-9m	3.0
<i>Prunus serrulata</i> 'Hisakura'	OH684	5.2	7.2	8.9m	4.5-9m	3.0
<i>Prunus serrulata</i> 'Hisakura'	OH683	5.2	7.2	7.4m	4.5-9m	3.0
<i>Prunus serrulata</i> 'Kanzan'	OH527	5.2	6.6	7.8m	12m, 10-18m	2.0
<i>Prunus serrulata</i> 'Tai Haku'	OH688	6.0	7.8	8.2m	6-7m, 12m	3.0
<i>Prunus subhirtella</i> 'Ascendens'	OH513	6.2	8.2	8.1m	15-18m	2.0
<i>Prunus subhirtella</i> 'Fukubana'	OH508	6.0	7.6	5.5m	4.5-9m	3.0
<i>Prunus subhirtella</i> 'Pendula'	OH529	5.8	8.0	6.5m	4.5-9m	3.0
<i>Prunus yedoensis x sub. 'Ascendens'</i>	OH511	5.6	8.0	14.2m	-	-
<i>Pseudotsuga mensiezii</i>		5.4	6.2	-	-	-
<i>Rhamnus californica</i>	OH575	6.0	5.2	8.0m	2.5m, 3-5m	5.0
<i>Quercus baetica</i>	OH680	7.6	6.4	15.5m	20m	2.5
<i>Quercus canariensis</i>		7.2	7.4	-	25-30m, 8-32m	-
<i>Quercus coccinea splendens</i>		7.0	8.8	25.6m	18-24,20-30,20-25	3.0
<i>Quercus rubra</i>		6.6	7.2	-	18-27,18-25,20-25	-
<i>Quercus velutina</i>	OH708	7.4	7.0	22.1m	20-30,15-24,18-25	3.0
<i>Symplocos paniculata</i>	OH562	8.8	6.8	7.1m	3m	5.0

Note

1. *Abies* and *Picea* scores are from workshop one, *Magnolia* scores from workshop two, the rest from workshop three.
2. Expected heights are taken from referenced sources on the arboretum database.

SECTION FIVE: BASINHEAD

Table 5.2: Plants in Basinhead ranked for average score

Plant	Average score	Rank
<i>Populus lasiocarpa</i>	7.3	1
<i>Araucaria bidwillii</i>	7.2	2=
<i>Magnolia kobus</i>	7.2	2=
<i>Cedrus atlantica</i> 'Glauca Pendula'	7.0	4=
<i>Populus violascens</i>	7.0	4=
<i>Viburnum</i> 'Bodnant'	7.0	4=
<i>Cornus florida f. rubra</i>	6.9	7
<i>Stachyurus praecox</i>	6.8	8
<i>Prunus serrulata</i> 'Kanzan'	6.7	9=
<i>Abies pinsapo</i>	6.7	9=
<i>Grevillea robusta</i>	6.7	9=
<i>Acer macrophyllum</i>	6.6	12=
<i>Fraxinus latifolia</i>	6.6	12=
<i>Buddleia alternifolia</i>	6.5	14=
<i>Cedrus atlantica f. glauca</i>	6.5	14=
<i>Prunus mume</i> 'Peggy Clark'	6.5	14=
<i>Prunus mume</i> 'The Geisha'	6.5	14=
<i>Prunus serrulata</i> 'Mt Fuji'	6.5	14=
<i>Prunus serrulata</i> 'Yukon'	6.5	14=
<i>Syringa</i> 'Madame Lemoine'	6.5	14=
<i>Syringa</i> 'Souvenir de Alice Harding'	6.5	14=
<i>Zelkova cretica</i>	6.5	14=

Table 5.3: Ranking of plants in Basinhead for botanical score

Plant	Botanical	Rank	Aesthetic
<i>Zelkova cretica</i>	7.8	1	5.2
<i>Acer macrophyllum</i>	7.2	2=	6.0
<i>Fraxinus latifolia</i>	7.2	2=	6.0
<i>Populus lasiocarpa</i>	7.2	2=	7.4
<i>Populus violascens</i>	7.0	5	7.0
<i>Araucaria bidwillii</i>	6.8	6	7.6
<i>Magnolia kobus</i>	6.6	7=	7.8
<i>Magnolia loebneri</i>	6.6	7=	5.8
<i>Viburnum</i> 'Bodnant'	6.2	9=	7.8
<i>Stachyurus praecox</i>	6.2	9	7.4
<i>Pyrus pashia</i>	6.2	9=	6.4
<i>Pinus virginiana</i>	6.2	9=	4.4
<i>Grevillea robusta</i>	6.2	9=	7.2
<i>Fraxinus ornus</i>	6.2	9=	6.6
<i>Cornus florida f. rubra</i>	6.2	9	7.6
<i>Cedrus atlantica</i> 'Glauca Pendula'	6.2	9=	7.8
<i>Acer buergerianum</i>	6.2	9=	6.4

Table 5.4: Ranking of plants in Basinhead for aesthetic score

Plant	Aesthetic	Rank	Botanical
<i>Prunus serrulata</i> 'Kanzan'	8.0	1	5.4
<i>Cedrus atlantica</i> 'Glauca Pendula'	7.8	2=	6.8
<i>Magnolia kobus</i>	7.8	2=	6.6
<i>Viburnum</i> 'Bodnant'	7.8	2=	6.2
<i>Araucaria bidwillii</i>	7.6	5=	6.8
<i>Cornus florida</i> f. <i>rubra</i>	7.6	5=	6.2
<i>Prunus serrulata</i> 'Mt Fuji'	7.6	5=	5.4
<i>Prunus serrulata</i> 'Yukon'	7.6	5=	5.4
<i>Populus lasiocarpa</i>	7.4	9=	7.2
<i>Stachyurus praecox</i>	7.4	9=	6.2
<i>Syringa vulgaris</i> 'Edith Cavell'	7.4	9=	5.4
<i>Cedrus atlantica</i> f. <i>glauca</i>	7.2	12=	5.8
<i>Grevillea robusta</i>	7.2	12=	6.2
<i>Prunus mume</i> 'Peggy Clark'	7.2	12=	5.8
<i>Prunus mume</i> 'The Geisha'	7.2	12=	5.8
<i>Prunus persica</i> 'Helen Borchert'	7.2	12=	5.2
<i>Prunus serrulata</i> 'Ashi Botan'	7.2	12=	5.4
<i>Prunus serrulata</i> 'Kofugen'	7.2	12=	5.4
<i>Prunus serrulata</i> 'Yedo Zakura'	7.2	12=	5.4
<i>Syringa vulgaris</i> 'Madame Lemoine'	7.2	12=	5.8
<i>Syringa vulgaris</i> 'Svr Alice Harding'	7.2	12=	5.8
<i>Forsythia</i> 'Arnold Giant'	7.0	22=	5.4
<i>Populus violascens</i>	7.0	22=	7.0
<i>Prunus x bleirana</i>	7.0	22=	5.8
<i>Syringa vulgaris</i> 'Buffon'	7.0	22=	5.4

Table 5.5: Plants previously found in Basinhead

Start from bottom point, anticlockwise, just below track.*Telopea oreades**Prunus tenella**Prostanthera rotundifolia**Pomaderris elliptica**Cercis chinensis***Start from bottom point, anticlockwise, along edge of old pond***Magnolia soulangeana* 'Alexandrina'*Stewartia ovata**Magnolia soulangeana* 'Lennei'*Prunus* 'Pink Perfection'*Chimonanthus fragrans**Malus coronaria**Prunus* 'Takasago'*Magnolia sieboldii**Magnolia campbellii* f. *alba**Neillia opulifolia**Magnolia soulangeana* 'Rustica Rubra'*Magnolia sinensis**Buddleia colvillei**Magnolia sargentiana* var. *robusta**Alnus arguta**Magnolia campbellii**Magnolia sprengeri* var. *diva***From pepper flat junction, anticlockwise, below track***Prunus persica* 'Rose Brilliant'*Magnolia delavayi**Prunus cerasifera* 'Nigra'*Prunus cerasifera* 'Thundercloud'*Prunus* 'Pollardi'*Magnolia sinensis**Prunus* 'Pink Cloud'*Populus lasiocarpa**Prunus persica* 'Iceberg'*Prunus* 'Rose Brilliant'*Prunus cerasoides***Near the existing *Grevillea robusta****Magnolia sieboldii**Magnolia watsonii**Prunus sanguinea* 'Plena'*Magnolia campbellii**Prunus mume* 'Charles Abraham'**Road on west side (can't tell if above or below the track)***Stewartia pseuodcamellia**Melia azedarach**Acer japonicum**Paulownia tomentosa**Magnolia loebneri**Magnolia soulangiana* 'Lennei'*Magnolia soulangiana* 'Alexandrina'**Pepper flat***Calliandra portoricensis**Cedronella triphylla**Schinus dependens*

APPENDIX: Rating scales used in field exercises

HEALTH

- 1 Unlikely to survive
- 2 Alive, poorly furnished, signs of stress, dying back
- 3 Fully furnished, signs of stress, not growing
- 4 Well furnished, healthy, no stress signs, growing slowly.
- 5 Well furnished, healthy, no stress signs, growing vigorously, .

AS AN EXAMPLE OF THE SPECIES

- 1 Not representative of the species, all factors unsatisfactory
- 2 Poor example of the species, three factors unsatisfactory
- 3 Identifiable example of the species, two factors unsatisfactory.
- 4 Good example of the species, only one factor unsatisfactory
- 5 Excellent, all factors good.

Factors: health, association with other trees, form (shape), form (structure).

GROWTH PHASE

- 1 Senescent - not growing, declining canopy.
- 2 Mature - adult features, growth regenerative
- 3 Immature vigorous - adult features, growth vigorous
- 4 Juvenile vigorous - established, in rapid growth, juvenile features
- 5 Establishment - Plant still establishing, not yet growing

CONTRIBUTION TO SCENE

1. Insignificant tree in this scene
2. Noticeable tree, but part of the general canopy.
3. Average visual impact on the area, tree stands out as an individual
4. Major contributor to this scene
5. Dominant feature of the area.

HEIGHT INDEX

- 0.5 Has made less than 10% of expected height
- 1.0 Has made about 20% of expected height
- 1.5 Has made about 40% of expected height
- 2.0 Has made about 60% of expected height
- 2.5 Has made about 80% of expected height
- 3.0 Is in expected height range
- 3.5 Has grown 30% more than expected height
- 4.0 Has grown 50% more than expected height
- 4.5 Has grown 80% more than expected height
- 5.0 Has grown 100% or more than expected height

APPENDIX: List of participants

Participants in the third workshop

Mr Bob Berry, Plantsman and Farmer, Hackfalls Arboretum, Gisborne.

Mr Spencer Bush, Arboretum Supervisor, Gisborne.

Mr Peter Cave, Nurseryman, Cambridge.

Professor David Chalmers, Deputy Vice Chancellor, Charles Sturt University, Wagga Wagga,
Australia.

Mr Garry Clapperton, Curator, Eastwoodhill.

Mr Gordon Collier, Consultant and Plantsman, Taihape.

Mr Rodney Faulkner, Farmer and Arboretum Trust Board, Gisborne.

Mr Ron Gordon, Farmer and Plantsman, Taihape. (Surveys only)

Mr Michael Hudson, Plantsman and Farmer, Hawkes Bay.

Mr Allan Jellyman, Community Services Director, New Plymouth.

Mrs Marion MacKay, Department of Horticultural Science, Massey University.

Mr Ian McKean, Farmer and Plantsman, Rangiwaihia.

Mr Paul Pollock, Nurseryman and Arboretum Trust Board, Gisborne.

Dr W R Sykes, Botanist, D.S.I.R. Land Resources Division, Christchurch.

Collection assessment data



Euonymus grandiflorus f. *salicifolius*, Pear Park, May 1987.

Collection assessment data

Codes for each column

- For botanical, aesthetic and average scores. No. is the number of observations that contributed to each score. Score is the mean of the observations on a scale from 1-10. These scores were done for the current collection only. Genera in the current collection that were not included in the scoring exercise at the time, and have no data, are marked '-'.
- Cat. indicates whether the genus is a tree, shrub or climber genus. T=tree, C=climber, S=shrub, SI=intermediate between tree and shrub.
- Current, previous and total collections. S+C=N. Species + Cultivars = Number of representatives of that genus at Eastwoodhill. The total collection = current collection + previous collection.

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Abelia</i>	8	5.00	8	4.75	16	4.87	S	3+0=3	6+0=6	9+0=9
<i>Abeliophyllum</i>	4	8.50	4	6.25	8	7.37	S	1+0=1		1+0=1
<i>Aberia</i>	3	8.00	2	7.00	5	7.60	T	1+0=1		1+0=1
<i>Abies</i>	8	8.50	8	8.00	16	8.25	T	31+3=34	9+4=13	40+7=47
<i>Abutilon</i>	-	-	-	-	-	-	S	2+1=3	2+10=12	4+11=15
<i>Acacia</i>	8	6.25	8	6.25	16	6.25	T	15+1=16	14+1=15	29+2=31
<i>Acanthopanax</i>									1+0=1	1+0=1
<i>Acer</i>	8	9.25	8	9.12	16	9.19	T	83+50=133	26+24=50	109+74=183
<i>Acradenia</i>									1+0=1	1+0=1
<i>Actinidia</i>									5+0=5	5+0=5
<i>Adenandra</i>									2+0=2	2+0=2
<i>Adenocarpus</i>									3+0=3	3+0=3
<i>Aesculus</i>	6	8.33	5	8.80	11	8.55	T	15+5=20	8+4=12	23+9=32
<i>Agathis</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Agonis</i>									2+0=2	2+0=2
<i>Ailanthus</i>	7	4.86	7	4.86	14	4.86	T	1+0=1		1+0=1
<i>Akebia</i>	6	7.00	5	6.00	11	6.55	C	1+0=1		1+0=1
<i>Alberta</i>									1+0=1	1+0=1
<i>Albizzia</i>	9	5.33	9	6.89	18	6.11	T	1+0=1	2+0=2	3+0=3
<i>Alectryon</i>	9	5.11	8	5.25	17	5.18	T	1+0=1		1+0=1
<i>Alniphyllum</i>									1+0=1	1+0=1
<i>Alnus</i>	8	7.00	7	6.14	15	6.60	T	21+5=26	0+2=2	21+7=28
<i>Alphitonia</i>	2	8.00	2	6.00	4	7.00	SI	1+0=1		1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Amelanchier</i>	9	6.89	9	7.33	18	7.11	SI	4+1=5	3+0=3	7+1=8
<i>Amorpha</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Ampelopsis</i>	5	8.00	5	7.80	10	7.90	C	4+1=5	1+0=1	5+1=6
<i>Anagyris</i>									1+0=1	1+0=1
<i>Andromeda</i>									1+0=1	1+0=1
<i>Angophora</i>	6	7.33	5	7.60	11	7.45	T	1+0=1		1+0=1
<i>Anopterus</i>									1+0=1	1+0=1
<i>Anthyllis</i>									1+0=1	1+0=1
<i>Aralia</i>	8	6.75	8	6.50	16	6.62	S	2+0=2	0+2=2	2+2=4
<i>Araucaria</i>	9	6.67	9	6.89	18	6.78	T	3+0=3	1+1=2	4+1=5
<i>Arbutus</i>	9	6.44	9	6.89	18	6.67	T	3+0=3	2+1=3	5+1=6
<i>Ardisia</i>									1+0=1	1+0=1
<i>Arduina</i>									1+0=1	1+0=1
<i>Aristolochia</i>	6	7.00	6	6.33	12	6.67	C	1+0=1	4+0=4	5+0=5
<i>Aristolotelia</i>	-	-	-	-	-	-	T	1+0=1	1+0=1	2+0=2
<i>Aronia</i>	7	6.29	7	5.71	14	6.00	S	2+0=2	1+1=2	3+1=4
<i>Artemesia</i>									3+0=3	3+0=3
<i>Arundo</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Asclepias</i>									1+0=1	1+0=1
<i>Asimina</i>	6	8.00	6	6.00	12	7.00	T	1+0=1		1+0=1
<i>Athrotaxus</i>									4+0=4	4+0=4
<i>Atriplex</i>									1+0=1	1+0=1
<i>Aucuba</i>	9	4.00	9	5.11	18	4.56	S	1+2=3		1+2=3
<i>Azara</i>	8	7.25	8	6.75	16	7.00	T	5+0=5	1+2=3	6+2=8
<i>Backhousia</i>									1+0=1	1+0=1
<i>Baeckia</i>	5	5.20	5	5.20	10	5.20	S	1+0=1		1+0=1
<i>Baloghia</i>									1+0=1	1+0=1
<i>Bambusa</i>									1+0=1	1+0=1
<i>Banksia</i>	9	5.78	9	6.00	18	5.89	SI	4+0=4	8+0=8	8+0=8
<i>Barklya</i>									1+0=1	1+0=1
<i>Bauera</i>									1+0=1	1+0=1
<i>Bauhinia</i>									3+0=3	3+0=3
<i>Beaufortia</i>									2+0=2	2+0=2
<i>Beilschmiedia</i>									1+0=1	1+0=1
<i>Beloperone</i>	-	-	-	-	-	-	S	1+0=1		1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Berberidopsis</i>	7	6.86	7	7.71	14	7.29	C	1+0=1		1+0=1
<i>Berberis</i>	9	6.89	9	6.00	18	6.44	S	18+1=19	26+7=33	44+8=52
<i>Berzelia</i>									1+0=1	1+0=1
<i>Beschorneria</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Betula</i>	9	8.89	9	8.89	18	8.89	T	33+3=36	13+5=18	46+8=54
<i>Billardiera</i>									1+0=1	1+0=1
<i>Bomarea</i>	7	6.86	7	6.57	14	6.71	C	2+0=2	1+0=1	3+0=3
<i>Boronia</i>									4+0=4	4+0=4
<i>Bougainvillea</i>									0+5=5	0+5=5
<i>Bouvardia</i>									1+0=1	1+0=1
<i>Bowkeria</i>	5	9.00	5	6.40	10	7.70	S	1+0=1		1+0=1
<i>Braebejum</i>									1+0=1	1+0=1
<i>Brachychiton</i>	8	7.25	8	6.75	16	7.00	T	2+0=2	1+0=1	3+0=3
<i>Brachyglottis</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Brachysema</i>									1+0=1	1+0=1
<i>Brassaia</i>									1+0=1	1+0=1
<i>Broussonetia</i>	5	8.00	5	4.80	10	6.40	T	1+0=1		1+0=1
<i>Brugmansia</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Brunfelsia</i>									2+0=2	2+0=2
<i>Buddleia</i>	9	6.44	8	6.25	17	6.35	S	16+4=20	8+13=21	24+17=41
<i>Bupleurum</i>									1+0=1	1+0=1
<i>Buxus</i>	8	4.75	9	4.44	17	4.59	S	1+1=2	1+0=1	2+1=3
<i>Caesalpinia</i>									2+0=2	2+0=2
<i>Calliandra</i>	7	5.71	7	6.29	14	6.00	S	2+0=2		2+0=2
<i>Callicarpa</i>	-	-	-	-	-	-	S	3+0=3	1+0=1	4+0=4
<i>Callicoma</i>	4	8.00	4	7.50	8	7.75	T	1+0=1		1+0=1
<i>Callistemon</i>	8	6.50	8	7.25	16	6.87	S	8+1=9	1+1=2	9+2=11
<i>Callitris</i>									4+0=4	4+0=4
<i>Calluna</i>									1+7=8	1+7=8
<i>Calodendrum</i>	6	8.67	5	7.60	11	8.18	T	1+0=1		1+0=1
<i>Calycanthus</i>	8	6.75	8	6.50	16	6.62	S	2+0=2		2+0=2
<i>Calytrix</i>									2+0=2	2+0=2
<i>Camellia</i>							S	17+198=215	2+136=138	19+334=353
<i>Campsis</i>	6	6.33	6	7.00	12	6.67	C	1+1=2		1+1=2
<i>Canarina</i>									1+0=1	1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Cantua</i>									3+0=3	3+0=3
<i>Caragana</i>									3+1=4	3+1=4
<i>Carrichelia</i>									3+0=3	3+0=3
<i>Carpenteria</i>	8	7.50	8	7.50	16	7.50	S	1+0=1		1+0=1
<i>Carpinus</i>	8	8.00	8	6.62	16	7.31	T	8+2=10	1+0=1	9+2=11
<i>Carpodetus</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Carya</i>	9	7.78	9	7.11	18	7.44	T	7+0=7		7+0=7
<i>Caryopteris</i>									3+0=3	3+0=3
<i>Casimiroa</i>									1+0=1	1+0=1
<i>Cassandra</i>									1+0=1	1+0=1
<i>Cassia</i>	8	4.50	8	6.62	16	5.56	S	1+0=1	7+1=8	8+1=9
<i>Cassinia</i>									1+0=1	1+0=1
<i>Castanea</i>	9	6.44	9	5.78	18	6.11	T	2+0=2	4+3=7	6+3=9
<i>Castanopsis</i>	-	-	-	-	-	-	T	1+0=1	2+0=2	3+0=3
<i>Castanospermum</i>	4	8.50	4	6.50	8	7.50	T	1+0=1		1+0=1
<i>Casuarina</i>	-	-	-	-	-	-	T	1+0=1	2+0=2	3+0=3
<i>Catalpa</i>	9	7.11	9	7.11	18	7.11	T	5+2=7	1+0=1	6+2=8
<i>Catha</i>	2	7.00	2	6.00	4	6.50	SI	1+0=1		1+0=1
<i>Ceanothus</i>	9	5.11	9	6.44	18	5.78	S	3+1=4	16+9=25	19+10=29
<i>Cedrus</i>	9	7.11	9	8.22	18	7.67	T	5+5=10	0+5=5	5+10=15
<i>Celastrus</i>	6	4.67	6	4.67	12	4.67	C	3+0=3	1+0=1	4+0=4
<i>Celtis</i>	6	8.33	6	5.33	12	6.83	T	7+0=7	1+0=1	8+0=8
<i>Cephalotaxus</i>	7	6.86	7	5.14	14	6.00	S	4+0=4	2+0=2	6+0=6
<i>Ceratonia</i>	6	7.33	6	6.00	12	6.67	T	1+0=1		1+0=1
<i>Ceratopetalum</i>	7	6.57	7	7.14	14	6.86	T	2+0=2		2+0=2
<i>Ceratostigma</i>	-	-	-	-	-	-	S	1+0=1	2+0=2	3+0=3
<i>Cercidiphyllum</i>	8	8.00	8	8.25	16	8.12	T	2+0=2		2+0=2
<i>Cercis</i>	9	8.22	9	7.89	18	8.06	T	5+2=7		5+2=7
<i>Cestrum</i>	8	5.00	8	5.25	16	5.12	S	2+0=2	2+0=2	4+0=4
<i>Chaenomeles</i>	9	5.33	9	6.67	18	6.00	S	2+1=3	2+22=24	4+23=27
<i>Chamaecyparis</i>	9	6.44	9	6.11	18	6.28	T	7+32=39	1+48=49	8+80=88
<i>Chiliotrichum</i>									1+0=1	1+0=1
<i>Chimonanthus</i>	9	6.44	9	6.89	18	6.67	S	2+2=4	0+2=2	2+4=6
<i>Chionanthus</i>	6	7.67	6	7.33	12	7.50	S	2+0=2	0+1=1	2+1=3
<i>Choisya</i>	9	4.67	9	5.33	18	5.00	S	1+0=1		1+0=1
<i>Chordospartium</i>									1+0=1	1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Chorizema</i>									3+0=3	3+0=3
<i>Cinnamomum</i>	8	6.25	8	6.62	16	6.44	T	1+0=1	1+0=1	2+0=2
<i>Cissus</i>	4	8.00	4	6.50	8	7.25	C	1+0=1		1+0=1
<i>Cistus</i>	7	5.14	7	6.00	14	5.57	S	2+2=4	16+6=22	18+8=26
<i>Citharaxyllum</i>									1+0=1	1+0=1
<i>Citrus</i>	-	-	-	-	-	-	S	1+2=3	2+7=9	3+9=12
<i>Cladrastis</i>	7	8.00	7	5.86	14	6.93	T	2+0=2	1+0=1	3+0=3
<i>Clematis</i>	9	7.33	8	8.00	17	7.65	C	13+13=26	20+43=63	33+56=89
<i>Clerodendron</i>	6	6.33	6	6.00	12	6.17	S	2+0=2	2+0=2	4+0=4
<i>Clethra</i>	7	7.71	7	7.57	14	7.64	S	3+0=3	4+1=5	7+1=8
<i>Cleyera</i>									1+0=1	1+0=1
<i>Clianthus</i>	9	6.44	9	7.67	18	7.06	S	1+0=1		1+0=1
<i>Coleonema</i>									1+0=1	1+0=1
<i>Colletia</i>									1+0=1	1+0=1
<i>Colquhounia</i>	4	9.00	4	7.00	8	8.00	S	3+0=3		3+0=3
<i>Colutea</i>									4+0=4	4+0=4
<i>Combretum</i>									1+0=1	1+0=1
<i>Comptonia</i>									1+0=1	1+0=1
<i>Coprosma</i>	8	5.25	8	4.50	16	4.87	S	5+3=8		5+3=8
<i>Cordyline</i>	9	4.22	9	5.33	18	4.78	T	2+2=4	3+1=4	5+3=8
<i>Coriaria</i>	-	-	-	-	-	-	S	1+0=1	1+0=1	2+0=2
<i>Cornus</i>	9	8.22	9	8.22	18	8.22	SI	16+1=17	4+8=12	20+9=29
<i>Corokia</i>									1+0=1	1+0=1
<i>Coronilla</i>									3+0=3	3+0=3
<i>Correa</i>									2+0=2	2+0=2
<i>Corylopsis</i>	9	8.00	9	7.67	18	7.83	S	5+0=5	2+0=2	7+0=7
<i>Corylus</i>	9	7.56	9	6.22	18	6.89	S	4+3=7	2+0=2	6+3=9
<i>Corynocarpus</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Corysema</i>									1+0=1	1+0=1
<i>Cotinus</i>	9	6.00	9	7.22	18	6.61	SI	2+1=3		2+1=3
<i>Cotoneaster</i>	8	6.25	8	5.50	16	5.87	S	13+1=14	31+0=31	44+1=45
<i>Crataegomespilus</i>	8	9.00	7	7.14	15	8.13	S	1+1=2		1+1=2
<i>Crataegus</i>	9	8.22	9	6.89	18	7.56	SI	28+7=35	11+2=13	39+9=48
<i>Crataemespilus</i>	6	8.67	6	7.67	12	8.17	S	1+0=1		1+0=1
<i>Crinodendron</i>	-	-	-	-	-	-	T	2+0=2		2+0=2
<i>Crotolaria</i>									1+0=1	1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Cryptomeria</i>	9	6.44	9	6.56	18	6.50	T	2+10=12	0+5=5	2+15=17
<i>Cudrania</i>	2	10.0	2	5.50	4	7.75	S	1+0=1		1+0=1
<i>Cunninghamia</i>	8	7.00	8	7.00	16	7.00	T	2+1=3		2+1=3
<i>Cunonia</i>	6	7.33	6	6.67	12	7.00	S	1+0=1		1+0=1
<i>Cupressus</i>	9	7.33	9	6.22	18	6.78	T	13+5=18	0+5=5	13+10=23
<i>Cupressocyparis</i>	-	-	-	-	-	-	T	0+1=1		0+1=1
<i>Cyathodes</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Cyphomandra</i>	5	6.40	5	4.80	10	5.60	S	2+0=2		2+0=2
<i>Cyrilla</i>	2	8.00	2	5.00	4	6.50	S	1+0=1		1+0=1
<i>Cytisus</i>	6	5.00	6	5.33	12	5.17	S	2+0=2	19+18=37	21+18=39
<i>Daboecia</i>									1+5=6	1+5=6
<i>Dacrycarpus</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Dacrydium</i>	9	6.67	9	6.89	18	6.78	T	3+0=3	3+0=3	6+0=6
<i>Dahlia</i>	8	6.00	8	6.25	16	6.12	S	2+0=2		2+0=2
<i>Dais</i>	6	6.67	6	6.00	12	6.33	S	1+0=1		1+0=1
<i>Daphne</i>	9	7.56	9	7.78	18	7.67	S	7+2=9	7+6=13	14+8=22
<i>Datura</i>									2+0=2	2+0=2
<i>Davidia</i>	9	8.75	8	8.67	17	8.71	T	1+0=1		1+0=1
<i>Debregeasia</i>									1+0=1	1+0=1
<i>Decaisnea</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Decumaria</i>	4	9.50	4	5.50	8	7.50	C	1+0=1		1+0=1
<i>Dendromecon</i>									1+0=1	1+0=1
<i>Dermatobrya</i>									1+0=1	1+0=1
<i>Desfontainia</i>	9	7.78	9	7.44	18	7.61	S	1+0=1		1+0=1
<i>Desmodium</i>									2+0=2	2+0=2
<i>Deutzia</i>	9	6.11	9	7.22	18	6.67	S	2+3=5	11+8=19	13+11=24
<i>Dianella</i>									1+0=1	1+0=1
<i>Dichotomanthes</i>	1	10.0	1	2.00	2	6.00	S	1+0=1		1+0=1
<i>Dichroa</i>	2	8.00	3	5.33	5	6.40	S	1+0=1		1+0=1
<i>Diervilla</i>	5	6.80	5	6.80	10	6.80	S	1+0=1		1+0=1
<i>Diosma</i>									3+0=3	3+0=3
<i>Diospyros</i>	9	7.33	9	6.89	18	7.11	T	5+0=5		5+0=5
<i>Dipelta</i>	4	9.00	4	7.50	8	8.25	S	1+0=1	2+0=2	3+0=3
<i>Diplacus</i>									1+0=1	1+0=1
<i>Dipteronia</i>									1+0=1	1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Disanthus</i>	7	8.29	7	8.71	14	8.50	S	1+0=1		1+0=1
<i>Distylum</i>	5	8.80	5	6.40	10	7.60	T	1+0=1		1+0=1
<i>Docynia</i>									2+0=2	2+0=2
<i>Dodonaea</i>	-	-	-	-	-	-	T	0+1=1		0+1=1
<i>Dombeya</i>									4+0=4	4+0=4
<i>Doryanthes</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Doxantha</i>	6	7.67	6	7.33	12	7.50	C	1+0=1		1+0=1
<i>Drimys</i>									2+0=2	2+0=2
<i>Dryandra</i>									2+0=2	2+0=2
<i>Duranta</i>	2	5.00	2	4.00	4	4.50	S	1+0=1	0+1=1	1+1=2
<i>Eccremocarpus</i>	6	5.67	6	5.00	12	5.33	C	0+2=2		0+2=2
<i>Edgeworthia</i>	9	6.44	9	6.89	18	6.67	S	1+0=1		1+0=1
<i>Ehertia</i>	5	9.20	5	7.20	10	8.20	T	2+0=2		2+0=2
<i>Elaeagnus</i>	7	5.43	7	3.71	14	4.57	SI	4+2=6	1+1=2	5+3=8
<i>Elaeocarpus</i>	7	6.29	7	5.43	14	5.86	T	2+0=2		2+0=2
<i>Embothrium</i>	9	6.67	9	7.78	18	7.72	T	1+2=3	1+1=2	2+3=5
<i>Emmenopterys</i>	6	9.67	6	8.00	12	8.83	T	1+0=1		1+0=1
<i>Enkianthus</i>	9	6.89	9	7.78	18	7.33	S	2+0=2	3+0=3	5+0=5
<i>Erica</i>	-	-	-	-	-	-	S	3+0=3	31+25=56	34+25=59
<i>Eriobotrya</i>	8	6.50	8	7.25	16	6.87	T	1+0=1		1+0=1
<i>Eriocephalus</i>									1+0=1	1+0=1
<i>Eriostemon</i>									2+0=2	2+0=2
<i>Erythrina</i>	8	5.50	8	6.00	16	5.75	T	1+0=1	4+0=4	5+0=5
<i>Escallonia</i>	9	6.22	9	5.78	18	6.00	S	2+3=5	2+9=11	4+12=16
<i>Eucalyptus</i>	9	6.22	9	6.67	18	6.44	T	11+1=12	11+1=12	22+2=24
<i>Eucommia</i>	5	9.20	5	6.00	10	7.60	T	1+0=1		1+0=1
<i>Eucryphia</i>	8	8.00	8	7.75	16	7.87	T	5+0=5	2+2=4	7+2=9
<i>Eugenia</i>									8+0=8	8+0=8
<i>Euodia</i>	6	8.67	6	6.00	12	7.33	T	2+0=2	1+0=1	3+0=3
<i>Euonymus</i>	9	7.11	9	6.33	18	6.72	SI	16+3=19	15+4=19	31+7=38
<i>Eupatorium</i>	-	-	-	-	-	-	S	2+0=2	1+0=1	3+0=3
<i>Eupetelea</i>									2+0=2	2+0=2
<i>Euschaphis</i>	2	9.00	2	7.00	4	8.00	T	1+0=1		1+0=1
<i>Exochorda</i>	9	5.33	9	6.56	18	5.94	S	1+0=1	3+0=3	4+0=4

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Fabiana</i>									1+2=3	1+2=3
<i>Fagus</i>	9	8.44	9	8.00	18	8.22	T	7+10=17	1+6=7	8+16=24
<i>Fatschedera</i>									0+1=1	0+1=1
<i>Fatsia</i>	8	5.00	8	6.00	16	5.50	S	1+0=1		1+0=1
<i>Feijoa</i>	6	4.00	6	5.00	12	4.50	S	2+0=2	0+4=4	2+4=6
<i>Fendlera</i>									1+0=1	1+0=1
<i>Ficus</i>	8	4.75	7	4.57	15	4.67	C	1+0=1	1+1=2	2+1=3
<i>Firmiana</i>	5	8.40	5	7.20	10	7.80	T	1+0=1	1+0=1	2+0=2
<i>Fitroya</i>									1+0=1	1+0=1
<i>Fokenia</i>									1+0=1	1+0=1
<i>Fontanesia</i>	4	8.50	4	5.00	8	6.75	S	2+0=2		2+0=2
<i>Forsythia</i>	9	5.56	9	6.78	18	6.17	S	2+5=7	1+1=2	3+6=9
<i>Fothergilla</i>	7	8.57	7	7.86	14	8.21	S	1+0=1	2+0=2	3+0=3
<i>Fraxinus</i>	9	8.00	9	7.22	18	7.61	T	27+4=31	2+4=6	29+8=37
<i>Fremontia</i>									2+0=2	2+0=2
<i>Freylinia</i>	3	10.0	3	6.67	6	8.33	S	1+0=1		1+0=1
<i>Fuchsia</i>	-	-	-	-	-	-	S	1+0=1	4+1=5	5+1=6
<i>Fucraea</i>	4	6.50	4	7.00	8	6.75	S	1+0=1		1+0=1
<i>Galphimia</i>									1+0=1	1+0=1
<i>Gardenia</i>									2+1=3	2+1=3
<i>Garrya</i>	9	6.22	9	6.44	18	6.33	S	2+0=2		2+0=2
<i>Gaultheria</i>	-	-	-	-	-	-	S	1+0=1	10+0=10	11+0=11
<i>Gelsemium</i>	6	6.00	6	6.33	12	6.17	C	0+1=1	0+1=1	0+2=2
<i>Genista</i>	-	-	-	-	-	-	S	2+0=2	11+0=11	13+0=13
<i>Gevuina</i>									1+0=1	1+0=1
<i>Ginkgo</i>	9	8.22	9	8.00	18	8.11	T	1+1=2	0+1=1	1+2=3
<i>Gleditsia</i>	9	7.33	9	7.11	18	7.22	T	8+5=13	0+1=1	8+6=14
<i>Glochidion</i>	3	10.0	3	5.33	6	7.67	T	1+0=1	1+0=1	2+0=2
<i>Glyptostrobus</i>	8	9.25	8	7.62	16	8.44	T	1+0=1	1+0=1	2+0=2
<i>Goodia</i>	9	7.11	9	7.78	18	7.44	S	1+0=1		1+0=1
<i>Gordonia</i>	9	7.56	9	7.33	18	7.44	T	2+0=2	3+0=3	5+0=5
<i>Grevillea</i>	9	5.33	9	6.67	18	6.00	S	4+3=7	7+2=9	11+5=16
<i>Grewia</i>									2+0=2	2+0=2
<i>Greyia</i>	8	8.50	8	6.50	16	7.50	S	1+0=1	1+0=1	2+0=2
<i>Griselinia</i>	-	-	-	-	-	-	T	1+0=1	0+1=1	1+1=2

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Gymnocladus</i>	8	7.75	8	7.50	16	7.62	T	1+0=1		1+0=1
<i>Hakea</i>									2+0=2	2+0=2
<i>Halesia</i>	9	6.89	9	7.44	18	7.17	T	2+0=2		2+0=2
<i>Halimium</i>									4+0=4	4+0=4
<i>Halimocistus</i>									1+0=1	1+0=1
<i>Halimodendron</i>									1+0=1	1+0=1
<i>Hamamelis</i>	9	7.11	9	6.78	18	6.94	S	2+2=4	3+3=6	5+5=10
<i>Hardenbergia</i>	8	5.50	8	7.00	16	6.25	C	1+0=1	1+0=1	2+0=2
<i>Harpephyllum</i>									1+0=1	1+0=1
<i>Harpullia</i>									1+0=1	1+0=1
<i>Hebe</i>	-	-	-	-	-	-	S	3+0=3	3+4=7	6+4=10
<i>Hedycarya</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Hedysarum</i>	4	8.50	4	5.50	8	7.00	S	1+0=1		1+0=1
<i>Helichrysum</i>	4	4.50	4	6.00	8	5.25	S	2+1=3		2+1=3
<i>Hemitella</i>									1+0=1	1+0=1
<i>Heteromeles</i>									1+0=1	1+0=1
<i>Heteromorpha</i>	1	10.0	1	6.00	2	8.00	S	1+0=1		1+0=1
<i>Hibiscus</i>	7	4.57	7	5.43	14	5.00	S	2+0=2	0+3=3	2+3=5
<i>Hoheria</i>	8	4.50	8	6.00	16	5.25	T	1+2=3	2+0=2	3+2=5
<i>Holboellia</i>	-	-	-	-	-	-	C	1+0=1		1+0=1
<i>Holmskioldea</i>									1+0=1	1+0=1
<i>Holodiscus</i>									1+0=1	1+0=1
<i>Homolanthus</i>									1+0=1	1+0=1
<i>Hovea</i>									1+0=1	1+0=1
<i>Hovenia</i>	8	7.00	8	5.00	16	6.00	T	1+0=1		1+0=1
<i>Hydrangea</i>	9	6.89	9	7.11	18	7.00	S	6+3=9	5+38=43	11+41=52
<i>Hymenosporum</i>	5	7.20	6	7.00	11	7.09	T	1+0=1		1+0=1
<i>Hypericum</i>	9	4.00	9	5.00	18	4.50	S	3+1=4	5+3=8	8+4=12
<i>Hypocalymma</i>									1+0=1	1+0=1
<i>Idesia</i>	9	6.44	9	8.00	18	7.22	T	1+0=1	0+1=1	1+1=2
<i>Ilex</i>	9	8.44	9	8.00	18	8.22	SI	16+7=23	11+5=16	27+12=39
<i>Illicium</i>	-	-	-	-	-	-	S	1+0=1	1+0=1	2+0=2
<i>Indigofera</i>	6	6.33	6	5.67	12	6.00	S	3+0=3	3+0=3	6+0=6
<i>Iochroma</i>									2+0=2	2+0=2

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Ipomaea</i>									2+0=2	2+0=2
<i>Itea</i>	6	9.00	6	7.17	12	8.08	S	2+0=2	1+0=1	3+0=3
<i>Jacaranda</i>	9	6.00	9	7.78	18	6.89	T	1+0=1		1+0=1
<i>Jacobinia</i>									1+0=1	1+0=1
<i>Jasminium</i>	9	6.67	9	6.22	18	6.44	C	6+1=7	9+1=10	15+2=17
<i>Jovellana</i>									1+0=1	1+0=1
<i>Juglans</i>	9	7.56	8	6.62	17	7.12	T	7+2=9	2+1=3	9+3=12
<i>Juniperus</i>	9	8.00	9	6.22	18	7.11	T	23+9=32	8+13=21	31+22=53
<i>Kadsura</i>									1+1=2	1+1=2
<i>Kalmia</i>	9	6.89	9	7.78	18	7.33	S	2+0=2	2+3=5	4+3=7
<i>Kennedia</i>	8	6.25	8	6.75	16	6.50	C	3+0=3	5+0=5	8+0=8
<i>Kerria</i>	9	4.89	9	6.44	18	5.67	S	1+1=2		1+1=2
<i>Keteleeria</i>	8	9.00	7	7.43	15	8.27	T	1+0=1	1+0=1	2+0=2
<i>Knighthia</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Koelreuteria</i>	9	6.67	9	7.00	18	6.83	T	4+0=4	0+1=1	4+1=5
<i>Kolkwitzia</i>	8	5.75	8	7.00	16	6.37	S	1+0=1		1+0=1
<i>Laburnum</i>	8	6.50	8	6.87	16	6.69	S	2+2=4	3+2=5	5+4=9
<i>Lagerstroemia</i>	8	6.50	8	7.50	16	7.00	T	1+1=2	0+1=1	1+2=3
<i>Lagunaria</i>	8	5.25	8	6.00	16	5.62	T	1+0=1		1+0=1
<i>Lambertia</i>									2+0=2	2+0=2
<i>Lantana</i>	6	4.00	6	4.67	12	4.33	S	0+1=1		0+1=1
<i>Lapergeria</i>									1+1=2	1+1=2
<i>Lardizabala</i>	3	10.0	3	7.33	6	8.67	C	1+0=1		1+0=1
<i>Larix</i>	9	6.89	9	6.89	18	6.89	T	3+0=3	7+3=10	10+3=13
<i>Lathyrus</i>									1+0=1	1+0=1
<i>Laurelia</i>									2+0=2	2+0=2
<i>Laurus</i>	9	6.22	9	5.33	18	5.78	T	4+0=4		4+0=4
<i>Lavandula</i>	7	4.57	7	5.43	14	5.00	S	2+0=2	1+1=2	3+1=4
<i>Ledum</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Leiophyllum</i>									1+0=1	1+0=1
<i>Leptodermis</i>									2+0=2	2+0=2
<i>Leptospermum</i>	4	6.50	4	5.50	8	6.00	SI	2+0=2	1+5=6	3+5=8
<i>Lespedeza</i>	2	6.00	2	6.00	4	6.00	S	1+0=1	1+0=1	2+0=2
<i>Leucaena</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Leucodendron</i>									9+0=9	9+0=9

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Leucospermum</i>									7+0=7	7+0=7
<i>Leucothoe</i>	9	6.00	9	6.22	18	6.11	S	1+1=2	1+0=1	2+1=3
<i>Leycesteria</i>									2+0=2	2+0=2
<i>Lhotskya</i>									1+0=1	1+0=1
<i>Libocedrus</i>	9	7.56	9	6.89	18	7.22	T	5+0=5	2+0=2	7+0=7
<i>Ligustrum</i>	9	5.33	9	4.44	18	4.89	T	5+4=9	4+0=4	9+4=13
<i>Lindera</i>									3+0=3	3+0=3
<i>Lippia</i>									1+0=1	1+0=1
<i>Liquidamber</i>	9	7.56	9	8.22	18	7.89	T	4+1=5		4+1=5
<i>Liriodendron</i>	9	7.33	8	8.00	17	7.65	T	2+2=4		2+2=4
<i>Lithocarpus</i>	6	8.67	6	6.67	12	7.67	T	2+0=2	4+0=4	6+0=6
<i>Lomatia</i>	8	8.50	8	6.62	16	7.56	T	4+0=4	5+0=5	9+0=9
<i>Lonicera</i>	8	7.25	8	6.37	16	6.81	C	14+1=15	11+2=13	25+3=28
<i>Loropetalum</i>	6	6.33	6	6.17	12	6.25	S	1+0=1		1+0=1
<i>Luehea</i>									1+0=1	1+0=1
<i>Luculia</i>									4+0=4	4+0=4
<i>Lyonia</i>	6	7.33	6	6.50	12	6.92	S	1+0=1		1+0=1
<i>Lyonothamnus</i>	5	8.80	5	6.80	10	7.80	T	1+0=1		1+0=1
<i>Maackia</i>									3+0=3	3+0=3
<i>Macadamia</i>	9	5.78	9	5.33	18	5.56	T	1+0=1	1+0=1	2+0=2
<i>Mackaya</i>									1+0=1	1+0=1
<i>Maclura</i>									1+0=1	1+0=1
<i>Magnolia</i>	9	9.56	9	9.33	18	9.44	T	31+29=60	13+18=31	44+47=91
<i>Mahonia</i>	9	8.00	9	7.78	18	7.89	S	5+0=5	5+0=5	10+0=10
<i>Mallotus</i>	2	9.00	2	7.50	4	8.25	S	1+0=1		1+0=1
<i>Malus</i>	9	8.67	9	8.11	18	8.39	T	31+31=62	9+19=28	40+50=90
<i>Mandevilla</i>									1+0=1	1+0=1
<i>Manettia</i>									1+0=1	1+0=1
<i>Manglietia</i>	6	9.33	6	8.00	12	8.67	T	1+0=1	1+0=1	2+0=2
<i>Maytenus</i>	9	5.33	9	6.22	18	5.78	T	1+0=1		1+0=1
<i>Melaleuca</i>	7	6.29	7	6.57	14	6.43	S	7+0=7	5+0=5	12+0=12
<i>Melia</i>	9	5.33	9	6.22	18	5.78	T	1+0=1		1+0=1
<i>Melicytus</i>	-	-	-	-	-	-	T	2+0=2		2+0=2
<i>Meliosma</i>	6	8.33	6	6.17	12	7.25	T	3+0=3	3+0=3	6+0=6
<i>Menziesia</i>									3+0=3	3+0=3

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Mespilus</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Metasequoia</i>	9	8.22	9	8.00	18	8.11	T	1+0=1		1+0=1
<i>Metrosideros</i>	9	6.00	9	7.33	18	6.67	T	2+0=2		2+0=2
<i>Michelia</i>	9	7.78	9	8.22	18	8.00	T	3+1=4		3+1=4
<i>Mitraria</i>									1+0=1	1+0=1
<i>Montanoa</i>									1+0=1	1+0=1
<i>Morus</i>	9	6.33	9	5.67	18	6.00	T	2+0=2	1+1=2	3+1=4
<i>Murraya</i>									1+0=1	1+0=1
<i>Mussaenda</i>									2+0=2	2+0=2
<i>Mutisia</i>									5+0=5	5+0=5
<i>Myoporum</i>	7	5.71	7	5.14	14	5.43	T	1+0=1		1+0=1
<i>Myrica</i>	3	8.00	3	5.33	6	6.67	S	2+0=2	2+0=2	4+0=4
<i>Myricaria</i>									1+0=1	1+0=1
<i>Myrsine</i>	8	5.00	8	5.25	16	5.12	S	2+0=2		2+0=2
<i>Myrtus</i>	9	6.67	9	6.56	18	6.61	S	5+1=6	0+1=1	5+2=7
<i>Nandina</i>	9	5.11	9	6.00	18	5.56	S	1+2=3	0+2=2	1+4=5
<i>Neillia</i>	5	7.60	6	6.17	11	6.82	S	2+0=2	1+0=1	3+0=3
<i>Neolitsea</i>	4	9.00	4	7.25	8	8.12	T	2+0=2		2+0=2
<i>Nerium</i>	9	4.89	9	6.89	18	5.89	S	1+4=5	0+8=8	1+12=13
<i>Nestigis</i>	7	5.43	7	5.71	14	5.57	T	2+0=2	1+0=1	3+0=3
<i>Neviusia</i>									1+0=1	1+0=1
<i>Nolina</i>									1+0=1	1+0=1
<i>Nothofagus</i>	9	7.33	9	7.00	18	7.17	T	11+0=11	3+0=3	14+0=14
<i>Notospartium</i>									2+0=2	2+0=2
<i>Nyssa</i>	9	8.00	9	8.67	18	8.33	T	3+0=3	1+0=1	4+0=4
<i>Ochna</i>	5	6.80	5	6.40	10	6.60	S	1+0=1		1+0=1
<i>Olea</i>	8	5.50	8	5.12	16	5.31	T	2+0=2	2+3=5	4+3=7
<i>Olearia</i>	6	5.33	6	5.67	12	5.50	S	2+0=2	3+4=7	5+4=9
<i>Orixa</i>									1+0=1	1+0=1
<i>Osmanthus</i>	8	7.50	8	6.37	16	6.94	S	4+1=5	2+0=2	6+1=7
<i>Osmarea</i>	4	7.00	5	5.40	9	6.11	S	1+0=1		1+0=1
<i>Osmaronia</i>	5	8.00	5	6.00	10	7.00	S	1+0=1	1+0=1	2+0=2
<i>Ostrya</i>	7	7.71	7	6.00	14	6.86	T	3+0=3	1+0=1	4+0=4
<i>Oxydendrum</i>	8	8.25	8	7.75	16	8.00	T	1+0=1		1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Ozothamnus</i>									1+0=1	1+0=1
<i>Paeonia</i>	9	6.00	9	8.00	18	7.00	S	3+4=7	2+0=2	5+4=9
<i>Paliurus</i>	5	8.00	5	5.20	10	6.60	S	1+0=1	1+0=1	2+0=2
<i>Panax</i>									1+0=1	1+0=1
<i>Panay</i>									2+0=2	2+0=2
<i>Pandorea</i>	6	5.67	6	7.33	12	6.50	C	0+1=1	1+0=1	1+1=2
<i>Parasyringa</i>	4	10.0	4	6.25	8	8.12	S	1+0=1		1+0=1
<i>Paratrophis</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Parkinsonia</i>									1+0=1	1+0=1
<i>Parrotia</i>	9	6.89	9	7.89	18	7.39	T	1+1=2		1+1=2
<i>Parrotiopsis</i>	5	8.00	5	7.60	10	7.80	S	1+0=1		1+0=1
<i>Parthenocissus</i>	7	6.86	7	6.86	14	6.86	C	1+0=1		1+0=1
<i>Passiflora</i>	8	6.25	8	7.25	16	6.75	C	1+0=1	3+2=5	4+2=6
<i>Paulownia</i>	8	7.75	8	8.25	16	8.00	T	3+0=3	1+0=1	4+0=4
<i>Peltophorum</i>	1	8.00	1	6.00	2	7.00	T	1+0=1		1+0=1
<i>Pennantia</i>	5	5.60	5	4.40	10	5.00	T	1+0=1		1+0=1
<i>Pentapterygium</i>									1+0=1	1+0=1
<i>Peraphyllum</i>									1+0=1	1+0=1
<i>Pernettya</i>									3+2=5	3+2=5
<i>Perovskia</i>									1+0=1	1+0=1
<i>Persea</i>	6	7.67	6	6.17	12	6.92	T	2+0=2		2+0=2
<i>Persoonia</i>									1+0=1	1+0=1
<i>Petrophila</i>									1+0=1	1+0=1
<i>Petteria</i>	3	9.33	3	6.00	6	7.67	S	1+0=1		1+0=1
<i>Phaedranthus</i>	3	7.33	3	6.67	6	7.00	C	1+0=1		1+0=1
<i>Phebalium</i>									2+0=2	2+0=2
<i>Phellodendron</i>	7	6.86	7	6.43	14	6.64	T	4+0=4	1+0=1	5+0=5
<i>Philadelphus</i>	9	6.00	9	7.78	18	6.89	S	8+7=15	15+16=31	23+23=46
<i>Philageria</i>									1+0=1	1+0=1
<i>Philesia</i>									1+0=1	1+0=1
<i>Phillyrea</i>									2+0=2	2+0=2
<i>Phoenix</i>	8	5.00	8	6.50	16	5.75	T	1+0=1		1+0=1
<i>Phormium</i>	8	4.50	8	5.50	16	5.00	S	1+1=2	1+6=7	2+7=9
<i>Photinia</i>	9	8.44	9	7.56	18	8.00	T	8+2=10	3+0=3	11+2=13
<i>Phygellus</i>									1+0=1	1+0=1

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection	Previous collection	Total collection
	No.	Score	No.	Score	No.	Score		S+C=N	S+C=N	S+C=N
<i>Phyllocladus</i>	7	6.29	8	7.00	15	6.67	T	3+0=3	1+0=1	4+0=4
<i>Phyllodoce</i>									3+0=3	3+0=3
<i>Phyllostachys</i>	5	5.60	5	6.40	10	6.00	S	2+0=2		2+0=2
<i>Phyllothamnus</i>									1+0=1	1+0=1
<i>Physocarpus</i>	4	7.00	5	6.20	9	6.56	S	0+1=1	1+0=1	1+1=2
<i>Picea</i>	9	8.22	9	7.56	18	7.89	T	23+3=26	5+8=13	28+11=39
<i>Picrasma</i>	6	9.00	6	8.33	12	8.67	S	1+0=1		1+0=1
<i>Pieris</i>	8	6.25	8	8.50	16	7.37	S	1+1=2	5+4=9	6+5=11
<i>Pilostegia</i>									1+0=1	1+0=1
<i>Pimelia</i>									3+0=3	3+0=3
<i>Pinus</i>	9	9.11	9	7.67	18	8.39	T	82+1=83	8+2=10	90+3=93
<i>Piptanthus</i>	7	7.43	7	6.29	14	6.86	S	1+0=1		1+0=1
<i>Pistachia</i>	7	8.00	8	8.12	15	8.07	T	2+0=2	3+0=3	5+0=5
<i>Pithecellobium</i>	1	8.00	1	6.00	2	7.00	SI	1+0=1		1+0=1
<i>Pittosporum</i>	9	6.22	9	5.78	18	6.00	SI	8+1=9	8+2=10	16+3=19
<i>Plagianthus</i>									2+0=2	2+0=2
<i>Platanus</i>	9	7.56	8	7.00	17	7.29	T	7+4=11		7+4=11
<i>Platycarya</i>	6	9.00	6	8.00	12	8.50	T	1+0=1		1+0=1
<i>Plumbago</i>									1+0=1	1+0=1
<i>Plumeria</i>									1+0=1	1+0=1
<i>Podocarpus</i>	9	7.78	9	6.67	18	7.22	T	9+2=11	4+0=4	13+2=15
<i>Podranea</i>	4	6.00	4	7.50	8	6.75	C	1+0=1		1+0=1
<i>Podylaria</i>									4+0=4	4+0=4
<i>Poinciana</i>									1+0=1	1+0=1
<i>Poliathyrsis</i>	8	8.50	8	7.12	16	7.81	T	1+0=1		1+0=1
<i>Polygala</i>									4+0=4	4+0=4
<i>Polygonum</i>									1+0=1	1+0=1
<i>Pomaderris</i>	9	5.56	9	5.33	18	5.44	S	2+0=2		2+0=2
<i>Poncirus</i>	8	5.75	8	5.00	16	5.37	S	1+0=1		1+0=1
<i>Populus</i>	9	7.78	9	6.56	18	7.17	T	10+18=28	18+1=19	28+19=47
<i>Posoqueria</i>									1+0=1	1+0=1
<i>Potentilla</i>	-	-	-	-	-	-	S	0+2=2	2+5=7	2+7=9
<i>Prinsepia</i>	1	8.00	1	4.00	2	6.00	S	1+0=1		1+0=1
<i>Prosopis</i>									1+0=1	1+0=1
<i>Prostanthera</i>	7	4.86	7	5.71	14	5.29	S	2+0=2	2+2=4	4+2=6
<i>Protea</i>	8	5.00	8	6.75	16	5.87	S	0+1=1	13+3=16	13+14=17

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Prunus</i>	9	9.11	9	9.00	18	9.06	T	44+62=106	30+38=68	74+100=174
<i>Pseudocydonia</i>	9	6.44	9	7.56	18	7.00	S	1+0=1		1+0=1
<i>Pseudolarix</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Pseudopanax</i>	9	5.78	9	5.78	18	5.78	S	3+0=3		3+0=3
<i>Pseudotsuga</i>	9	6.89	9	6.78	18	6.83	T	3+0=3	2+4=6	5+4=9
<i>Psidium</i>									1+0=1	1+0=1
<i>Psoralea</i>									1+0=1	1+0=1
<i>Ptelea</i>	7	6.57	7	5.71	14	6.14	S	1+0=1		1+0=1
<i>Pterocarya</i>	7	7.71	7	7.29	14	7.50	T	3+0=3	1+0=1	4+0=4
<i>Pterostyrax</i>	7	8.00	7	7.71	14	7.86	T	2+0=2	1+0=1	3+0=3
<i>Pultenaea</i>									1+0=1	1+0=1
<i>Punica</i>	9	6.00	9	6.44	18	6.22	S	1+4=5	0+2=2	1+6=7
<i>Pyracantha</i>	8	5.00	8	6.00	16	5.50	S	3+0=3	1+1=2	4+1=5
<i>Pyrus</i>	9	7.78	9	6.89	18	7.33	T	5+0=5	2+1=3	7+1=8
<i>Quamoclit</i>									1+0=1	1+0=1
<i>Quercus</i>	9	9.33	9	8.89	18	9.11	T	84+17=101	15+5=20	99+22=121
<i>Quillaja</i>	5	8.80	5	6.80	10	7.80	T	1+0=1		1+0=1
<i>Quintinia</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Quisqualis</i>									1+0=1	1+0=1
<i>Raphiolepis</i>	7	5.14	8	5.25	15	5.20	S	2+0=2	1+0=1	3+0=3
<i>Reevesia</i>									1+0=1	1+0=1
<i>Rhabdothamnus</i>									1+0=1	1+0=1
<i>Rhamnus</i>	6	7.33	6	5.50	12	6.42	S	2+0=2		2+0=2
<i>Rhaphithamnus</i>	3	9.33	3	5.33	6	7.33	S	1+0=1		1+0=1
<i>Rhododendron-sp</i>	-	-	-	-	-	-	S	45+11=56	191+19=210	236+30=266
<i>Rhodo-hyds</i>	-	-	-	-	-	-	S	0+188=188	0+256=256	0+444=444
<i>Rhodo-azalea</i>	-	-	-	-	-	-	S		0+386=386	0+386=386
<i>Rhodothamnus</i>									1+0=1	1+0=1
<i>Rhodotypos</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Rhus</i>	9	7.33	9	7.44	18	7.39	S	5+1=6	3+1=4	8+2=10
<i>Ribes</i>	9	6.00	9	6.56	18	6.28	S	4+0=4	7+1=8	11+1=12
<i>Robinia</i>	9	5.11	9	6.00	18	5.56	T	1+1=2	4+0=4	5+1=6
<i>Rondeletia</i>									2+0=2	2+0=2
<i>Rosa</i>	9	5.11	9	6.44	18	5.78	S	1+1=2	12+3=15	13+4=17

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Rosmarinus</i>	9	4.22	9	6.00	18	5.11	S	0+1=1	0+7=7	0+8=8
<i>Royena</i>									1+0=1	1+0=1
<i>Rubus</i>									3+0=3	3+0=3
<i>Ruellia</i>									1+0=1	1+0=1
<i>Ruscus</i>									2+0=2	2+0=2
<i>Russelia</i>									2+0=2	2+0=2
<i>Salix</i>	9	6.44	9	6.44	18	6.44	T	11+2=13	28+5=33	39+7=46
<i>Salvia</i>	9	5.33	9	6.44	18	5.89	S	4+0=4	3+0=3	7+0=7
<i>Sambucus</i>	8	6.25	8	5.25	16	5.75	S	2+0=2	0+4=4	2+4=6
<i>Sapium</i>	6	7.67	6	7.50	12	7.58	T	2+0=2		2+0=2
<i>Sarcococca</i>	8	7.75	8	6.37	16	7.06	S	2+0=2	1+0=1	3+0=3
<i>Sassafras</i>	8	8.00	8	8.00	16	8.00	T	1+0=1		1+0=1
<i>Saxegothea</i>									1+0=1	1+0=1
<i>Schima</i>	7	9.14	7	7.86	14	8.50	T	2+0=2	3+0=3	5+0=5
<i>Schinus</i>	9	5.78	9	6.56	18	6.17	T	2+0=2	2+0=2	4+0=4
<i>Schisandra</i>	7	8.00	7	6.71	14	7.36	C	2+0=2	1+0=1	3+0=3
<i>Schizophragma</i>	7	9.14	7	8.29	14	8.71	C	1+0=1	1+0=1	2+0=2
<i>Schotia</i>									2+0=2	2+0=2
<i>Sciadopitys</i>	9	8.22	9	8.44	18	8.33	T	1+0=1		1+0=1
<i>Scolopia</i>									1+0=1	1+0=1
<i>Senecio</i>	9	5.56	9	6.00	18	5.78	S	3+0=3		3+0=3
<i>Sequoia</i>	9	7.11	9	8.22	18	7.67	T	1+0=1	0+1=1	1+1=2
<i>Sequoiadendron</i>	9	7.11	9	8.00	18	7.56	T	1+0=1	0+1=1	1+1=2
<i>Sesbania</i>	-	-	-	-	-	-	T	1+0=1		1+0=1
<i>Shortia</i>									0+1=1	0+1=1
<i>Sinofranchetia</i>									1+0=1	1+0=1
<i>Sinojackia</i>	6	9.00	6	7.83	12	8.42	T	2+0=2		2+0=2
<i>Sinowilsonia</i>									1+0=1	1+0=1
<i>Skimmia</i>									1+1=2	1+1=2
<i>Smilax</i>	6	7.00	6	5.83	12	6.42	S	1+0=1		1+0=1
<i>Smodingium</i>									1+0=1	1+0=1
<i>Solanum</i>	7	5.43	7	5.43	14	5.43	S	1+0=1	4+1=5	5+1=6
<i>Sollya</i>	5	6.80	5	6.40	10	6.60	C	1+0=1		1+0=1
<i>Sophora</i>	9	6.67	9	8.00	18	7.33	T	7+0=7	2+2=4	9+2=11
<i>X Sorbaria</i>	8	7.75	8	7.37	16	7.56	S	3+0=3	1+0=1	4+0=4

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>X Sorbaronia</i>									2+0=2	2+0=2
<i>X Sorbopyrus</i>	3	9.33	3	6.67	6	8.00	S	2+0=2		2+0=2
<i>Sorbus</i>	9	8.67	9	8.33	18	8.50	T	38+11=49	20+5=25	58+16=74
<i>Spacele</i>									1+0=1	1+0=1
<i>Spartium</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Spiraea</i>	9	6.67	9	6.78	18	6.72	S	9+1=10	5+0=5	14+1=15
<i>Spondias</i>	2	8.00	2	6.00	4	7.00	T	1+0=1		1+0=1
<i>Stachyurus</i>	9	7.78	9	7.67	18	7.72	S	3+1=4		3+1=4
<i>Staphylea</i>	7	8.57	7	7.43	14	8.00	T	5+1=6		5+1=6
<i>Stauntonia</i>	9	6.89	9	6.67	18	6.78	C	1+0=1		1+0=1
<i>Stenocarpus</i>									1+0=1	1+0=1
<i>Stephanandra</i>	6	7.67	6	6.67	12	7.17	S	1+0=1	1+0=1	2+0=2
<i>Stephanotis</i>									1+0=1	1+0=1
<i>Stranvaesia</i>	8	6.75	8	6.75	16	6.75	SI	4+0=4	0+1=1	4+1=5
<i>Strobilanthes</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Strophanthes</i>	2	7.00	2	6.00	4	6.50	S	1+0=1		1+0=1
<i>Stuartia</i>	9	8.67	9	9.11	18	8.89	S	7+0=7	1+0=1	8+0=8
<i>Styrax</i>	8	8.25	8	8.12	16	8.19	T	4+0=4	6+0=6	10+0=10
<i>Swainsonia</i>									1+0=1	1+0=1
<i>Sycopsis</i>	6	8.33	6	6.33	12	7.33	S	1+0=1		1+0=1
<i>Symphoricarpos</i>									2+0=2	2+0=2
<i>Symplocos</i>	5	8.00	5	6.00	10	7.00	S	2+0=2		2+0=2
<i>Syncarpia</i>									1+0=1	1+0=1
<i>Syringa</i>	8	6.50	8	7.75	16	7.12	S	9+36=45	17+46=63	26+82=108
<i>Szygium</i>	6	7.33	6	7.33	12	7.33	T	1+0=1		1+0=1
<i>Taiwania</i>	9	8.89	9	7.78	18	8.33	T	1+0=1	1+0=1	2+0=2
<i>Talauma</i>	6	9.67	5	8.20	11	9.00	T	1+0=1		1+0=1
<i>Tamarix</i>	9	5.11	9	5.78	18	5.44	S	1+0=1	2+1=3	3+1=4
<i>Taxodium</i>	9	6.89	9	8.00	18	7.44	T	1+0=1	3+0=3	4+0=4
<i>Taxus</i>	8	7.25	8	6.87	16	7.06	S	3+6=9	1+2=3	4+8=12
<i>Tecomanthe</i>	9	8.22	9	8.00	18	8.11	C	1+0=1		1+0=1
<i>Telopea</i>									3+0=3	3+0=3
<i>Ternstroemia</i>	5	8.80	5	6.40	10	7.60	S	1+0=1		1+0=1
<i>Tetracentron</i>	5	9.60	5	8.80	10	9.20	T	1+0=1		1+0=1
<i>Teucrium</i>	8	5.00	8	6.00	16	5.50	S	1+0=1	2+0=2	3+0=3

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection S+C=N	Previous collection S+C=N	Total collection S+C=N
	No.	Score	No.	Score	No.	Score				
<i>Thea</i>	9	6.89	9	6.56	18	6.72		One species, counted in Camellia.		
<i>Thryptomene</i>									1+0=1	1+0=1
<i>Thuja</i>	9	6.44	9	6.78	18	6.61	T	3+9=12	0+10=10	3+19=22
<i>Thujopsis</i>	9	6.44	9	6.44	18	6.44	T	1+2=3		1+2=3
<i>Thunbergia</i>	5	5.60	5	6.80	10	6.20	C	1+0=1	5+0=5	6+0=6
<i>Tibouchina</i>	7	6.29	7	7.14	14	6.71	S	1+1=2	3+1=4	4+2=6
<i>Tilia</i>	9	8.67	9	8.00	18	8.33	T	15+1=16	5+2=7	20+3=23
<i>Toona</i>	5	6.80	5	7.20	10	7.00	S	1+0=1		1+0=1
<i>Torreya</i>	8	7.75	8	6.50	16	7.12	T	2+0=2		2+0=2
<i>Trachelospermum</i>	6	7.67	6	6.67	12	7.17	C	2+0=2		2+0=2
<i>Trachycarpus</i>	8	5.00	8	6.25	16	5.62	T	1+0=1		1+0=1
<i>Tripterygium</i>	3	9.33	3	6.33	6	7.83	C	2+0=2		2+0=2
<i>Tristania</i>	8	6.00	8	6.50	16	6.25	T	1+0=1	1+0=1	2+0=2
<i>Trochodendron</i>	5	8.80	5	7.00	10	7.90	T	1+0=1		1+0=1
<i>Tropaeolum</i>									1+0=1	1+0=1
<i>Tsuga</i>	8	8.25	8	7.50	16	7.87	T	4+1=5	6+0=6	10+1=11
<i>Ulex</i>									0+1=1	0+1=1
<i>Ugni</i>	-	-	-	-	-	-	S	1+0=1		1+0=1
<i>Ulmus</i>	9	7.78	9	6.67	18	7.22	T	12+6=18	0+4=4	12+10=22
<i>Umbellularia</i>	7	8.57	7	6.57	14	7.57	S	1+0=1		1+0=1
<i>Ungandia</i>									1+0=1	1+0=1
<i>Vaccinium</i>	7	6.86	7	5.86	14	6.36	S	1+0=1	9+4=13	10+4=14
<i>Verbena</i>									1+0=1	1+0=1
<i>Viburnum</i>	9	8.22	9	7.78	18	8.00	S	19+3=22	20+6=26	39+9=48
<i>Villaresia</i>									1+0=1	1+0=1
<i>Viminaria</i>									1+0=1	1+0=1
<i>Vinca</i>									1+4=5	1+4=5
<i>Virgilia</i>	-	-	-	-	-	-	S	1+0=1	1+0=1	2+0=2
<i>Vitex</i>	7	7.43	7	6.86	14	7.14	S	1+0=1	1+0=1	2+0=2
<i>Vitis</i>	9	7.78	9	7.89	18	7.83	C	5+1=6	2+2=4	7+3=10
<i>Wattakaka</i>	5	8.40	5	7.20	10	7.80	C	1+0=1		1+0=1
<i>Weigelia</i>	9	5.56	9	6.67	18	6.11	S	2+4=6	3+6=9	5+10=15
<i>Weinmannia</i>									3+0=3	3+0=3

Genus	Botanical score		Aesthetic score		Average score		Cat.	Current collection	Previous collection	Total collection
	No.	Score	No.	Score	No.	Score		S+C=N	S+C=N	S+C=N
<i>Widdringtonia</i>	8	8.00	8	6.00	16	7.00	T	2+0=2	1+0=1	3+0=3
<i>Wistaria</i>	9	6.89	9	8.22	18	7.56	C	4+2=6	0+3=3	4+5=9
<i>Xanthocerus</i>									1+0=1	1+0=1
<i>Xylosma</i>									1+0=1	1+0=1
<i>Zanthoxylum</i>	8	7.75	8	6.12	16	6.94	S	4+0=4	1+0=1	5+0=5
<i>Zelkova</i>	9	7.56	9	7.11	18	7.33	T	3+0=3	1+0=1	4+0=4
<i>Zenobia</i>									2+0=2	2+0=2
<i>Ziziphys</i>									1+0=1	1+0=1

	Spec+Cvr=Number
Current collection	1666+962=2628
Previous collection	1476+1543=3019
Total collection	3142+2505=5647

Current collection 36.6% cultivars, 63.4% species
 Previous collection 51.1% cultivars, 48.9% species
 Total collection 56% cultivars, 44% species