

THE DISTRIBUTION OF *ACACIA* (LEGUMINOSAE-MIMOSOIDEAE)
IN WESTERN AUSTRALIA.
PART 4. A DESCRIPTIVE ACCOUNT OF *ACACIA* DISTRICTS

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ABSTRACT

Three Regions and 10 Areas within Western Australia are described in terms of their Acacia flora. The South-West Region (324 species) is the most distinctive, it comprises 2 Areas, contains the greatest number of species (half of which belong to section Phyllodineae) and is richest in endemics. The Kimberley Region (101 species) is the second most distinctive, it also comprises 2 Areas but is relatively low in species numbers (a majority of which belong to section Juliflorae) and endemics. The Kimberley Region probably represents the western end of a pan-continental, tropical/subtropical Acacia district. The Eremaean Region (224 species) is the least distinctive, it comprises 6 poorly defined Areas and its Acacia flora is dominated by sections Phyllodineae, Juliflorae and Plurinerves.

INTRODUCTION

The purpose of this paper is to describe in terms of their *Acacia* flora the 3 Regions and 10 Areas defined in Part 3 of this series on the distribution of *Acacia* in Western Australia (this vol. pp. 1-21). The Regions and Areas were defined by MULCLAS analysis, while species important in discriminating these *Acacia* districts were determined by GROUPER analysis. When expressing GROUPER results in the discussions below the percent indicated in parentheses after species names, represents the contribution of that particular species to the total information gain on fusion of the two groups being considered. The percent value is therefore a measure of the relative importance of that species to the distinguishing of groups.

The Regions and Areas discussed here are listed below and are illustrated in Figure 2 of Part 3 (this vol. p. 5).

1. South-West Region
 - a. South and West Coastal Area
 - b. Central and Northern Wheatbelt Area

2. Kimberley Region
 - a. North Kimberley Area
 - b. South Kimberley Area
3. Eremaean Region
 - a. North Eremaean Area
 - b. Central Eremaean Area
 - c. South-West Eremaean Area
 - d. South Eremaean Area
 - e. North-West Eremaean Area
 - f. West Eremaean Area

Appendix 1 lists the 481 *Acacia* species used in the analyses. The names of taxa involved in the computations summarized in Tables 1-3 can be obtained by reference to this Appendix.

The infrageneric classification used here is that of Pedley (1978) a summary of which is as follows:

- I. Subgenus *Acacia*
 1. Section *Acacia*
- II. Subgenus *Aculeiferum* Vassal
 2. Section *Spiciflorae* DC. (Not represented in W.A.)
 3. Section *Filicinae* (Benth.) Taub. (Not represented in Australia)
- III. Subgenus *Heterophyllum* Vassal (= Subg. *Phyllodineae* Seringe)
 4. Section *Botrycephalae* (Benth.) Taub. (Not represented in W.A.)
 5. Section *Phyllodineae* DC.
 6. Section *Lycopodiifoliae* Pedley
 7. Section *Alatae* (Benth.) Pedley
 8. Section *Plurinerves* (Benth.) Maiden et Betche
 9. Section *Juliflorae* (Benth.) Maiden et Betche
 10. Section *Pulchellae* (Benth.) Taub.

ACACIA DISTRICTS

1. South-West Region

In terms of MULCLAS, this is by far the most distinctive *Acacia* Region in Western Australia. The South-West is a relatively small, triangular Region bordered to the north-east by a line running roughly from Shark Bay in the north-west to Cape Arid in the south-east, and on the west and south by the Indian and Southern Oceans respectively. The area approximates the South-West Botanical Province of other workers (Beard 1980, Burbidge 1960, Mueller 1867).

It is seen from Table 1 that the South-West Region not only has the greatest number of species (324, of which 65 are undescribed) it is also richest in endemics (191 species, representing 59% of the total for the Region). Half the species belong to section *Phyllodineae*, which also accounts for about half the endemics. The closely related sections *Plurinerves* (76 species) and *Juliflorae* (46 species) are less important but nevertheless together they account for 37.5% of the *Acacia* flora. The small sections *Alatae* (12 species) and *Pulchellae* (27 species) are almost entirely confined to the South-West Region while sections *Acacia* and *Lycopodiifoliae* are totally absent.

Only 24 species (7%) range to other Australian States (Table 2). This low number of extra-Western Australian distributions contrasts markedly with

those of the Kimberley and Eremaean Regions.

A majority of the 130 South-West Region species that are shared with the adjacent Eremaean Region occur in the South and South-West Eremaean Areas (Table 3). The GROUPER analysis showed that the South-West Region was distinguished from these two Eremaean Areas due most significantly to the presence of *A. saligna*, *A. pulchella*, *A. stenoptera*, *A. lasiocarpa* and *A. microbotrya* and to the absence of *A. aneura*.

Within the South-West Region two *Acacia* Areas are recognized by MULCLAS at the 10-group level (see Figures 1 and 2 of Part 3 - this vol. pp. 4-5).

1a. South and West Coastal Area

With its 204 species this Area ranks second only to the Central and Northern Wheatbelt Area with respect to species richness. Table 1 shows that sectional representation is dominated by the Phyllodineae (115 species, representing 56.5% of the total for the Area) while the other sections each contain fewer than 42 species. Sections Pulchellae (21 species) and Alatae (9 species) are represented by fewest species but relative to their total species composition (28 species and 12 species respectively) these sections are well represented.

Endemism in the South and West Coastal Area is higher than for any other Western Australian *Acacia* Area (65 species, 32%) with section Phyllodineae containing most species (Table 1).

Only 11 species are shared with eastern States, principally South Australia (Table 2). These species have east-west distributions either in coastal/near-coastal habitats (e.g. *A. cyclops*, *A. myrtifolia*) or in arid/semi-arid inland habitats (e.g. *A. acanthoclada*, *A. ligulata*).

The South and West Coastal Area shares most species with the adjacent Central and Northern Wheatbelt Area where 125 species (61%) are in common (Table 3). Many of these shared species predominate in the Central and Northern Wheatbelt Area and only just reach the inland periphery of the South and West Coastal Area (see below). This border overlap is, in many cases, simply a function of the grid size and shape used in our analysis and thus gives artificially high species numbers for the South and West Coastal Area. The GROUPER analysis showed that the South and West Coastal Area was distinguished from the Central and Northern Wheatbelt Area at an information gain level of 624 units due most significantly to the presence of *A. myrtifolia* (2.31%) and *A. microbotrya* (1.43%) and to the absence of *A. coolgardiensis* (2.28%) and *A. stereophylla* (1.35%).

The South and West Coastal Area is divided into two major sub-areas by MULCLAS (see Figure 1 in Part 3 - this vol. p. 4). The western sub-area includes both the forest regions and the coastal plains from Perth to Albany. Species characteristic of the sub-area occur in sections Pulchellae and Phyllodineae e.g. *A. browniana*, *A. dentifera*, *A. extensa*, *A. pentadenia* (all forest species normally found on laterite), *A. lasiocarpa*, *A. littorea*, *A. subracemosa* and *A. truncata* (all coastal and near-coastal species found on sand or limestone). These species do not generally dominate the vegetation although they may be locally present in large numbers. In the northern part of this sub-area there are several species more typical of the Central and Northern Wheatbelt Area e.g. *A. acuminata*, *A. acuaria*, *A. erinacea*, *A. leptospermoides*, *A. microbotrya*, *A. multispicata* and *A. lasiocalyx*.

The eastern sub-area of the South and West Coastal Area extends from about Bremer Bay to Cape Arid and mainly comprises coastal and near-coastal habitats. It is linked to the western sub-area principally by wide-ranging species from sections Phyllodineae and Plurinerves e.g. *A. cyclops*, *A. cochlearis*, *A. myrtifolia*, *A. rostelifera* and *A. triptycha*. There are many wide-ranging Central and Northern Wheatbelt species whose southern limit of distribution just reaches this sub-area e.g. *A. chrysellia*, *A. leptopetala*, *A. microbotrya* and *A. signata*.

1b. Central and Northern Wheatbelt Area

This is the most species rich of all *Acacia* Areas in Western Australia. Table 1 shows that of its 245 species, 113 species (representing 46% of the total for the Area) are contained in section Phyllodineae, 64 species (26%) in section Plurinerves and 42 species (17%) in section Juliflorae. The sections Pulchellae (15 species) and Alatae (11 species) comprise the remaining 11%.

Endemism here is second highest for the Western Australian *Acacia* Areas (51 species, 21%) and is accounted for principally by section Phyllodineae (25 species) and to a lesser extent by sections Plurinerves (11 species) and Juliflorae (7 species). Sections Pulchellae and Alatae together comprise 8 endemics (Table 1).

Only 20 species (8%) are shared with eastern Australia (Table 2). The majority of these are wide-ranging Arid Zone species from sections Phyllodineae and Juliflorae which extend to the Northern Territory, South Australia and New South Wales e.g. *A. jennerae*, *A. kempeana*, *A. ligulata*, *A. murrayana*, *A. ramulosa*, *A. stowardii* and *A. tetragonophylla*.

The Central and Northern Wheatbelt Area shares most species, i.e. 125, with the adjacent South and West Coastal Area (Table 3). The affinities between these two *Acacia* Areas are discussed under 1a above. Of the other W.A. *Acacia* Areas only the South and South-West Eremaean share reasonably high numbers of species with the Central and Northern Wheatbelt Area (79 and 65 respectively) - Table 3. GROUPER showed that the presence of *A. microbotrya* and *A. saligna* within the Central and Northern Wheatbelt Area were most significant in separating this Area from these two adjacent Eremaean Areas (see 3c and 3d below for details).

Unlike parts of the South and West Coastal Area, the Central and Northern Wheatbelt Area is not only very species rich but *Acacia* also forms a conspicuous element of much of the vegetation. This applies particularly to the sandplain areas where many tall shrubs and trees, principally from sections Juliflorae and Phyllodineae, are common e.g. *A. blakelyi*, *A. coolgardiensis*, *A. lasiocalyx*, *A. multispicata* and *A. signata*. In areas of red earths, *A. acuminata* (Juliflorae) and *A. microbotrya* (Phyllodineae) are very common. On areas of laterite, however, although *Acacia* is often dominant in terms of species numbers, it is often eclipsed by genera such as *Eucalyptus*, *Casuarina* and *Melaleuca* in terms of physiognomy (Maslin 1982a).

The Central and Northern Wheatbelt Area is divided into three major geographic sub-areas in the MULCLAS analysis: southern, central and north-coastal (see Figure 1 in Part 3 - this vol. p. 4).

2. The Kimberley Region

This Region, situated in the far north of the State, shows geographic similarity to Beard's (1979) Northern Botanical Province except that in terms of *Acacia*, the southern boundary is positioned further south (see Part 3 - this vol. pp. 1-21). Within the Kimberley, *Acacia* is an important element of the vegetation in many places (Beard 1979, Kenneally 1981 and 1983). Vast tracts of 'Pindan', i.e. *A. tumida*-*A. eriopoda* association, dominate many areas (Beard 1967, McKenzie and Kenneally 1983) while elsewhere *Acacia* is often a co-dominant with *Eucalyptus*.

From the MULCLAS analysis, this is the second most distinctive *Acacia* Region within Western Australia. However, of its 101 species only 22 are endemic which is fewer than in either the South-West or Eremaean Regions (Table 1). This low endemism is mainly attributed to the high proportion of species (68, representing 67% of the total for the Region) which range interstate, principally to the Northern Territory and Queensland (Table 2). The Kimberley Region probably represents the western end of a pan-continental, tropical/subtropical *Acacia* district.

Of the 39 Kimberley Region species which extend to other Western Australian *Acacia* Areas, the majority occur in the northernmost part of the Eremaean Region i.e. in the North, Central and North-West Eremaean Areas (Table 3). The GROUPER analysis showed that the Kimberley Region was distinguished from these combined Eremaean Areas, at an information gain level of 406.59 units, due most significantly to the presence of *A. tumida* (5.4%) and *A. plectocarpa* (3.4%) and also to the absence of both *A. dictyophleba* (3.5%) and *A. aneura* (3.3%).

Table 1 shows that at the infrageneric level, section Juliflorae (59 species, representing 58% of the total for the Region) numerically dominates the *Acacia* flora of the Kimberley Region while the closely related section Plurinerves (17 species) ranks second in importance. Section Phyllodineae (13 species), which finds its best development in Areas further south, is here almost wholly confined to the South Kimberley Area. Although represented by few species, sections Lycopodiifoliae (7 species) and *Acacia* (5 species) are mostly restricted to the Kimberley Region, while sections Alatae and Pulchellae are entirely absent.

Within the Kimberley Region two *Acacia* Areas are recognized by MULCLAS at the 10-group level (see Figures 1 and 2 in Part 3 - this vol. pp. 4-5).

2a. North Kimberley Area

Sectional representation for the 66 species recorded for this Area is summarized in Table 1. Not only are sections Juliflorae (40 species, representing 61% of the total for the Area) and Plurinerves (13 species, 20%) the largest in terms of species numbers, they also contain all the 12 endemic taxa.

All of the 46 species (70%) which extend outside the North Kimberley Area occur in the adjacent Northern Territory while 27 (41%) of these range as far as Queensland (Table 2). The majority of these pan-continental species are contained in sections Juliflorae (24 species) and Plurinerves (10 species) e.g. *A. aulacocarpa*, *A. gonoclada*, *A. hemignosta* and *A. platycarpa*.

Except for the 35 species (53%) which range to the South Kimberley Area, the North Kimberley Area has very few species (less than 13) in common with

other Western Australian *Acacia* Areas (Table 3). Affinities with the South Kimberley Area are attributed mainly to species from section Juliflorae (Appendix 1). The GROUPER analysis showed that the North Kimberley Area was distinguished from the South Kimberley Area at an information gain level of 212.76 units due most significantly to the absence of *A. monticola* (5%), *A. coriacea* (4%), *A. bivenosa* (3.5%) and *A. acradenia* (3.2%) and to the presence of *A. plectocarpa* (3.9%), *A. durmii* (3.7%), *A. bidwillii* (3.0%), *A. deltoidea* (3.0%), *A. kelleri* (3.0%) and *A. retinervis* (3.0%).

2b. South Kimberley Area

As with the North Kimberley Area the South Kimberley Area is characterized by a preponderance of species from the closely related sections Juliflorae (39 species) and Plurinerves (9 species) which together comprise 69% of the *Acacia* flora of the Area (Table 1). However, unlike its northern counterpart, the South Kimberley Area contains several species (13) from section Phyllodineae (Appendix 1). All 5 endemic taxa in this Area are as yet undescribed.

The South Kimberley Area has most species in common with the adjacent Northern Territory where all 49 extra-W.A. species (70%) are shared. Of the 49, 33 species (47%) range as far as Queensland (Table 2). Species from sections Juliflorae and Plurinerves are chiefly responsible for these pan-continental links e.g. *A. aulacocarpa*, *A. gonoclada*, *A. hemignosta*, *A. holosericea*, *A. lysiphloia*, *A. orthocarpa*, *A. platycarpa*, *A. retivenia* and *A. tumida*.

Within Western Australia 35 species (50%) are shared with both the adjacent North Kimberley and North-West Eremaean Areas while the North Eremaean Area has 22 species (31%) and the Central Eremaean Area has 23 species (33%) in common with the South Kimberley Area (Table 3). Species responsible for the South and North Kimberley affinities are discussed under 2a above. Affinities between the South Kimberley Area and the adjacent North, Central and North-West Eremaean Areas are attributed mainly to species from sections Juliflorae, Plurinerves and Lycopodiifoliae. The principal factors responsible for these affinities are:

- (1) widespread, common South Kimberley species which just extend to the northern Eremaean Regions e.g. *A. holosericea*, *A. platycarpa*, *A. stipuligera* and *A. tumida*;
- (2) widespread, common Eremaean Region species which just extend to the South Kimberley Area e.g. *A. cuthbertsonii*, *A. kempeana*, *A. ligulata*, *A. maitlandii*, *A. spondylophylla* and *A. tetragonophylla*; and
- (3) species which are widespread and reasonably common in both Areas e.g. *A. adoxa*, *A. ampliceps*, *A. ancistrocarpa*, *A. coriacea*, *A. hilliana* and *A. translucens*.

Affinities with the North-West Eremaean Area are further strengthened by:

- (1) species which are widespread and common in the North-West Eremaean Area and just reach the southern part of the South Kimberley Area e.g. *A. citrinoviridis*, *A. sclerosperma* and *A. trachycarpa*; and
- (2) species which show disjunct distributions between the two Areas e.g. *A. arida*, *A. cowleana*, *A. inaequilatera*, *A. pyrifolia* and *A. tenuissima*.

Further discussion on the affinities between the South Kimberley Area and these 3 northern Areas of the Eremaean Region is given below under sections 3a, 3b and 3e.

3. Eremaean Region

In terms of MULCLAS this is the least well defined *Acacia* Region in Western Australia even though it includes 60% of the grid cells used in the analysis. The Region is bounded to the north by the Kimberley Region and to the south-west by the South-West Region. The Eremaean Region encompasses the western part of the Australian Arid Zone which is characterized by the physiognomic dominance of *Acacia* (especially 'Mulga', *A. aneura*) in much of its vegetation. The taxonomy of many *Acacia* species from the Eremaean Region is discussed in Maslin (1980, 1981 and 1982b) while a phytogeographic analysis of these species is given in Maslin (1982b) and Maslin and Hopper (1982).

Sectional representation for the 224 species is shown in Table 1. Due to its common border with the species rich South-West Region and due also to the coarse grid size used in this analysis, the number of species given here for the Eremaean Region may be misleadingly high. The *Acacia* flora is dominated by sections Phyllodineae (88 species, representing 39% of the total for the Region), Juliflorae (68 species, 31%) and Plurinerves (61 species, 27%). Unlike in the South-West and Kimberley Regions, these *Acacia* sections of the Eremaean Region are present in rather similar proportions (see Figures 7 and 8 in Part 3 - this vol. pp. 18-19). Nevertheless, the Phyllodineae and Plurinerves show a strong gradient of declining species numbers from south to north, whereas section Juliflorae has peak numbers in both the south-west and the north-west of the Region.

Endemism in the Eremaean Region is low (33 species, 15%) - Table 1. Of the 70 species (31%) which extend to the eastern States, 57 range to the Northern Territory while 37 range to both South Australia and Queensland (Table 2 and Appendix 1). Affinities with other Australian States involve less than 20 species.

Within Western Australia the Eremaean Region shares 130 species (58%) with the South-West Region and only 39 species (17%) with the Kimberley Region (Table 3). As discussed below, these affinities are primarily due to (1) the sharing of wide-ranging, predominantly Arid Zone species, and (2) the incursion of either South-West or Kimberley species into the peripheral Areas of the Eremaean Region.

Although we recognize six Areas within the Eremaean Region (see Part 3 - this vol. p. 7), none of these have sharply defined boundaries. Wide-ranging species of arid and semi-arid habitats, from sections Juliflorae, Plurinerves and Phyllodineae, are largely responsible for the continuity found between these *Acacia* Areas and also between them and the eastern States (Appendix 1). The primary characteristic of variation in *Acacia* distributions in the Eremaean Region is one of gradual change along two major gradients, punctuated by localized centres representing concentrations of change. The two gradients are recognizable as changes in species composition firstly along a north-south alignment, and secondly in an approximate east-west alignment but centred on the North-West Eremaean Area (The Pilbara) and extending inland to arid parts.

3a. North Eremaean Area

Table 1 shows this small geographic area as having not only the fewest *Acacia* species (33) of any Western Australian Area, but also being among the poorest in endemics (2 taxa, both undescribed). The closely related sections Juliflorae (13 species) and Plurinerves (8 species) together account for 64% of the *Acacia* flora of the Area while section Phyllodineae with its 10 species accommodates most of the remainder.

The North Eremaean Area shares a high proportion of its species with the adjacent Northern Territory (23 species, 70%) - Table 2.

Within Western Australia, the North Eremaean Area is best characterized as a transition zone between the tropical/sub-tropical Kimberley Region and the more arid Eremaean Areas to the south. This is evidenced by the fact that it shares 22 species (67%) with the South Kimberley Area and 21 species (64%) with each of the Central and North-West Eremaean Areas (Table 3). Species from sections Juliflorae and Phyllodineae are principally responsible for these affinities (see 2b above). The GROUPER analysis showed that the North Eremaean Area was distinguished from the South Kimberley Area at an information gain of 125.17 units due most significantly to the presence of *A. dictyophleba* (7.4%) and *A. cneura* (4.5%) and to the absence or reduced frequency of *A. tumida* (5.5%), *A. bivenosa* (5.2%) and *A. acradenia* (4.7%).

3b. Central Eremaean Area

Table 1 shows that of the 59 species recorded for this Area only 2 taxa (both undescribed) are endemic. Sectional representation is dominated by the Juliflorae (23 species) and the Phyllodineae (22 species) which together comprise 76% of the *Acacia* flora of the Area. Section Plurinerves (11 species, 19%) is the only other infrageneric group of any significance here. Compared with the North Eremaean Area, the Central Eremaean Area exhibits a reduced tropical/sub-tropical influence and a corresponding increased Arid Zone influence. These trends are evidenced by the relative increase in the number of Phyllodineae species and the decrease in the number of Juliflorae species extending from the South Kimberley Area to the North Eremaean Area but not reaching the Central Eremaean Area (Appendix 1, and Figures 7 and 8 in Part 3 - this vol. pp. 18-19).

The Central Eremaean Area has 45 species (76%) which range to eastern Australia (Table 2). It is largely wide-ranging Arid Zone species from sections Juliflorae and Phyllodineae which are responsible for these affinities (Appendix 1). However, species predominating in the rocky uplands around the Western Australia-Northern Territory-South Australia borders also contributed e.g. *A. auricoma*, *A. basedowii*, *A. chippendalei*, *A. macdonnellensis*, *A. strongylophylla* and *A. validinervia*.

Besides its strong extra-Western Australian affinities, the Central Eremaean Area is rather closely related to the adjacent North-West and South-West Eremaean Areas where 30 species (51%) and 29 species (49%) respectively are shared (Table 3). Again it is primarily wide-ranging species in sections Juliflorae and Phyllodineae which establish these links (Appendix 1). As will be seen below, it is also species from these two sections which are primarily responsible for the separation of these Areas. The GROUPER analysis showed that the Central Eremaean Area was distinguished from the North-West Eremaean Area at an information gain level of 181.50 units due most significantly to the reduced frequency of *A. bivenosa* (6.62%),

A. pyrifolia (6.62%) and *A. victoriae* (5.77%) (all section Phyllodineae) and from the South-West Eremaean Area at an information gain level of 222:24 units due most significantly to the absence or reduced frequency of *A. brachystachya* (5.54%), *A. ramulosa* (4.84%) and *A. craspedocarpa* (4.16%) (all section Juliflorae).

3c. South-West Eremaean Area

Table 1 shows that of the 92 species recorded for this Area only 3 taxa (all undescribed) are endemic. The closely related sections Juliflorae (36 species) and Plurinerves (22 species) together comprise 63% of the South-West Eremaean *Acacia* flora. Section Phyllodineae (31 species, 34%) accounts for most of the remainder. Several species, mainly from section Juliflorae, of moderately wide range but with centres of distribution in the South-West Eremaean, help contribute to the distinctness of the Area e.g. *A. craspedocarpa*, *A. eremaea*, *A. jamesiana*, *A. kochii*, *A. longiphyllodinea* and *A. tysonii*.

Twenty nine species (32%) extend into the eastern States (principally to the Northern Territory and South Australia) - Table 2.

The South-West Eremaean Area has most species in common with the adjacent Central and Northern Wheatbelt and South Eremaean Areas where 65 species (71%) and 45 species (40%) respectively are shared (Table 3). Reasons for these affinities are discussed under 3d below. The GROUPER analysis showed that the South-West Eremaean Area was distinguished from the Central and Northern Wheatbelt Area at an information gain of 709.85 units due most significantly to the reduced frequency of *A. microbotrya* (2.17%) and *A. saligna* (1.61%) and to the presence of *A. aneura* (1.80%), *A. linophylla* (1.80%), and *A. victoriae* (1.55%). GROUPER also distinguished the South-West Eremaean Area from the South Eremaean Area at an information gain of 273.82 units due most significantly to the presence of *A. victoriae* (4.94%), *A. pruinocarpa* (4.10%), *A. linophylla* (3.80%), *A. ramulosa* (3.08%), and *A. tysonii* (2.99%).

3d. South Eremaean Area

The South Eremaean Area is nearly equal in size to the entire South-West Region yet it contains only about 1/3 the number of species. Even so, the South Eremaean with its 115 species has the third largest *Acacia* flora of any Area in the State (Table 1). Taxa shared with the adjacent, species rich South-West Region contribute significantly to the large number of species in the South Eremaean Area (see below). Only 9 species (8%) are endemic here (Table 1).

This Area represents the southern extreme of a north-south gradient of *Acacia* species composition from the Kimberley Region through the Eremaean Region (Figure 2 in Part 3 - this vol. p. 5). The predominantly temperate section Phyllodineae (57 species, representing 49% of the total for the Area) equals the combined, closely related sections Plurinerves (33 species, 29%) and Juliflorae (24 species, 21%) - Table 1.

Some 32 species (28%) range into eastern Australia. The largest percentage of these species are shared with South Australia (28 species) Table 2.

The South Eremaean Area has most species in common with the adjacent South-West Region. Thus, as shown in Table 3, the Central and Northern

Wheatbelt Area shares 77 species and the South and West Coastal Area shares 52 species with the South Eremaean Area. A majority of these shared taxa have their main area of distribution in the South-West Region and only extend to the southern and western margins of the South Eremaean Area and although too numerous to list all of them (see Appendix 1) some examples are (1) Central and Northern Wheatbelt species just extending into the western part of the South Eremaean Area: *A. aestivalis*, *A. bidentata*, *A. rossei*, *A. spinosissima* (all section Phyllodineae), *A. assimilis*, *A. beauverdiana*, *A. dielsii*, *A. longispinea* (all section Plurinerves), *A. lasiocalyx*, *A. multispicata* and *A. resinomarginea* (all section Juliflorae); (2) South and West Coastal species just reaching the southern margins of the South Eremaean Area: *A. binata*, *A. crassuloides*, *A. dermatophylla*, *A. harveyi* (all section Phyllodineae), *A. cyclops*, *A. cochlearis* and *A. nitidula* (all section Plurinerves). The GROUPE analysis showed that the South Eremaean Area was distinguished from the Central and Northern Wheatbelt Area at an information gain level of 819.50 units due most significantly to the absence or virtual absence of *A. microbotrya* (2.84%), *A. saligna* (2.33%), *A. latipes* (1.68%), *A. leptospermoides* (1.68%) and *A. multispicata* (1.66%) and from the South and West Coastal Area at an information gain of 739.39 units due most significantly to the absence or virtual absence of *A. myrtifolia* (2.87%), *A. pulchella* (2.48%), *A. saligna* (2.15%) and *A. cochlearis* (2.01%).

Within the Eremaean Region, the South Eremaean Area has its closest affinities with the South-West Eremaean Area with which it shares 45 species (Table 3). This relationship is established primarily through (1) the sharing of widespread Arid Zone species from sections Phyllodineae and Juliflorae e.g. *A. aneura*, *A. dictyophleba* and *A. victoriae* and (2) widespread Central and Northern Wheatbelt species from sections Juliflorae and Plurinerves whose ranges extend far enough into the Eremaean Region to encompass both the South Eremaean and the South-West Eremaean Areas e.g. *A. acuminata*, *A. assimilis*, *A. beauverdiana*, *A. coolgardiensis*, *A. fragilis*, *A. multispicata*, *A. longispinea*, *A. resinomarginea* and *A. stereophylla*. The GROUPE analysis discrimination of the South and South-West Eremaean Areas is discussed under 3c above.

3e. North-West Eremaean Area

The North-West Eremaean Area (the Pilbara) is characterized by a preponderance of rocky uplands, especially in the region of the Chichester and Hamersley ranges. Of the 54 species recorded for the Area, 28 (representing 52% of the total) belong to section Juliflorae and 16 (29%) to section Phyllodineae (Table 1). The other three sections are represented by a total of 10 species. Endemism is relatively low (6 species, all undescribed and mostly found in the Hamersley Range area)*.

A large number of North-West Eremaean Area species have wide distributions with 30 species (56%) extending to other Australian States (mainly Northern Territory and Queensland) - Table 2. Although all sections of *Acacia* which occur in the Area contribute to these extra-Western Australian links, most species are contained in sections Juliflorae (13 species) and Phyllodineae (10 species) - Appendix 1.

* Subsequent to conducting this analysis a taxonomic and phytogeographic study of Hamersley Range *Acacias* has been completed by the first author (Maslin 1982b). In this work a majority of the undescribed Pilbara species have been described.

The North-West Eremaean Area contains a mixture of tropical/sub-tropical and Arid Zone species as evidenced by its strong affinities with the South Kimberley Area (35 species, 65%) and the Central Eremaean Area (30 species, 56%) respectively (Table 3). The GROUPER analysis showed that the North-West Eremaean Area was distinguished from the South Kimberley Area at an information gain level of 172.20 units due most significantly to the presence of *A. xiphophylla* (5.4%), *A. victoriae* (5.3%), *A. aneura* (3.8%) and *A. dictyophleba* (3.8%). See under 3b above for GROUPER results of the North-West Eremaean - Central Eremaean analysis.

3f. West Eremaean Area

Table 1 shows this small Area has only 47 species including just one endemic. The largest section, the Phyllodineae (22 species, 47%) almost equals, when combined, the closely related sections Juliflorae (17 species) and Plurinerves (7 species) which together comprise 51% of the *Acacia* flora of the Area.

The West Eremaean Area is a major zone of overlap in *Acacia* species distributions, as is the North Eremaean Area. Its transitional character is emphasized by the high level of similarity it shows with each of its four adjacent Areas: the South-West Eremaean Area (28 species shared, 59%); the Central and Northern Wheatbelt Area (27 species, 57%); the Central Eremaean Area (23 species, 49%); and the North-West Eremaean Area (22 species shared, 47%) - Table 3. See below for GROUPER discrimination between these Areas.

There is a north-western *Acacia* element which finds its southern limit of distribution in the West Eremaean Area. These are widespread species, a number of which occur in both the northern coastal areas as well as the more arid inland e.g. *A. ampliceps*, *A. bivenosa*, *A. citrinoviridis*, *A. gregorii*, *A. pyriformis*, *A. sclerosperma* and *A. xiphophylla*.

Also, there is a southern element which finds its northern limit of distribution in the West Eremaean Area. There is a strong coastal influence from species in section Phyllodineae (e.g. *A. idiomorpha*, *A. rostelifera*, *A. spathulifolia*, *A. xanthina*) but also an equally strong representation of species which are widespread in the inland areas of the Central and Northern Wheatbelt Area. Species in the latter category are derived mainly from sections Juliflorae (e.g. *A. acuminata*, *A. coolgardiensis*, *A. neurophylla* and Plurinerves (e.g. *A. latipes*, *A. longispinea*).

Many wide-ranging Arid Zone species have their western limit of distribution in the West Eremaean Area. These are mostly found in section Juliflorae (e.g. *A. aneura*, *A. brachystachya*, *A. cuthbertsonii*, *A. kempeana*, *A. rhodophloia*) and, to a lesser extent, section Phyllodineae (e.g. *A. ligulata*, *A. murrayana*, *A. victoriae*). Eighteen of these Arid Zone species range into eastern Australia, especially to the Northern Territory (Table 2).

The GROUPER analysis showed that the West Eremaean Area was distinguished from:

- (1) the Central and Northern Wheatbelt Area, at an information gain level of 547.17 units due most significantly to the absence of *A. microbotrya* (2.45%), *A. erinacea* (1.89%), *A. multispicata* (1.89%) and *A. saligna* (1.89%);

- (2) the South-West Eremaean Area, at an information gain level of 156.27 units due most significantly to the presence of *A. coriacea* (5.57%);
- (3) the North-West Eremaean Area, at an information gain level of 150.07 units due most significantly to the presence of *A. ramulosa* (4.33%) and the reduced frequency of *A. bivenosa* (4.08%) and *A. pyrifolia* (4.08%); and
- (4) the Central Eremaean Area, at an information gain level of 145.80 units due most significantly to the presence of *A. xiphophylla* (6.55%) and *A. sclerosperma* (5.77%).

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Table 1. The number of *Acacia* species and the number of endemics recorded for the genus and its sections from the Western Australian *Acacia* districts i.e. Regions and Areas, as defined in Part 3 (this vol. pp. 1-21). Total species numbers include both described and undescribed taxa; in parentheses in column 2 the number of known undescribed species is given for the genus as a whole even though this number is included in the district total. Percentage values are relative to the total number of species for each district. Species recorded for each district are listed in Appendix 1. Abbreviations are as follows (see Figure 2 of Part 3 - this vol. p. 5): South-West Region (SWR) comprising the South and West Coastal (SWC) and Central and Northern Wheatbelt (CNW) Areas; Kimberley Region (KR) comprising the North (NK) and South (SK) Kimberley Areas; Eremaean Region (ER) comprising the North (NE), Central (CE), South-West (SWE), South (SE), North-West (NWE) and West (WE) Eremaean Areas. Western Australia (WA).

Region/ Area	Acacia: genus		Julliflorae		Plurinerves		Acacia		Lycopodiifoliae		Phyllodineae		Pulchellae		Alatae	
	Total no. of spp.	Total Endemic	Total no. of spp.	No. of endemic species	Total no. of spp.	No. of endemic species	Total no. of spp.	No. of endemic species	Total no. of spp.	No. of endemic species	Total no. of spp.	No. of endemic species	Total no. of spp.	No. of endemic species	Total no. of spp.	No. of endemic species
SWC	204(31)	65(32%)	18(9%)	4	41(20%)	11	0	0	0	0	115(56.5%)	37	21(10%)	12	9(4.5%)	1
CNW	245(48)	51(21%)	42(17%)	7	64(26%)	11	0	0	0	0	113(46%)	25	15(6%)	6	11(5%)	2
SWR	324(65)	191(59%)	46(14%)	18	76(23.5%)	38	0	0	0	0	163(50.5%)	99	27(8%)	26	12(4%)	10
NK	66(4)	12(18%)	40(61%)	9	13(20%)	3	5(7%)	0	6(9%)	0	2(3%)	0	0	0	0	0
SK	69(5)	5(7%)	39(56%)	1	9(13%)	1	3(4%)	0	6(9%)	0	13(18%)	3	0	0	0	0
KR	101(9)	22(22%)	59(58%)	14	17(17%)	4	5(5%)	0	7(7%)	1	13(13%)	3	0	0	0	0
NE	33(3)	2(6%)	13(40%)	0	8(24%)	1	0	0	2(6%)	0	10(30%)	1	0	0	0	0
CE	59(6)	2(3%)	23(39%)	1	11(19%)	1	1(2%)	0	2(3%)	0	22(37%)	0	0	0	0	0
SWE	92(15)	3(3%)	36(39%)	2	22(24%)	1	1(1%)	0	0	0	31(34%)	0	0	0	2(2%)	0
SE	115(14)	9(8%)	24(21%)	0	33(29%)	2	0	0	0	0	57(49%)	7	1(1%)	0	0	0
NWE	54(8)	6(11%)	28(52%)	3	7(13%)	3	1(2%)	0	2(4%)	0	16(29%)	0	0	0	0	0
WE	47(7)	1(2%)	17(36%)	1	7(15%)	0	1(2%)	0	0	0	22(47%)	0	0	0	0	0
ER	224(42)	33(15%)	68(31%)	12	61(27%)	10	1(0.5%)	0	3(1%)	0	88(39%)	11	1(0.5%)	0	2(1%)	0
WA	481(95)	365(76%)	126(26%)	77	112(23%)	60	5(1%)	0	8(2%)	1	191(40%)	167	28(6%)	28	12(2%)	12

Acacia: sections (Pedley, 1978)

Table 2. Interstate representation of *Acacia* from Western Australian *Acacia* districts. Both the number of species and their percentage representation (relative to the total for each Region and Area) is given. The species involved in these interstate distributions are listed in Appendix 1. Abbreviations for Regions and Areas are given in the caption to Table 1. State abbreviations are as follows: N.S.W. (New South Wales, including A.C.T.); N.T. (Northern Territory); Qld. (Queensland); S.A. (South Australia); Tas. (Tasmania); Vict. (Victoria); W.A. (Western Australia).

Region/Area	N.T.	Qld.	S.A.	N.S.W.	Vict.	Tas.	Total Extra-W.A.
SWC	1 (0.5%)	5 (2%)	8 (4%)	6 (3%)	6 (3%)	1 (0.5%)	11 (5%)
CNW	12 (5%)	8 (2%)	16 (6%)	12 (5%)	5 (2%)	-	20 (8%)
<u>SWR</u>	12 (4%)	11 (3.5%)	19 (6%)	15 (4.5%)	9 (3%)	1 (0.3%)	24 (7%)
NK	46 (70%)	27 (41%)	1 (2%)	2 (3%)	-	-	46 (70%)
SK	49 (70%)	33 (47%)	8 (11%)	7 (10%)	3 (4%)	-	49 (70%)
<u>KR</u>	68 (67%)	44 (43%)	8 (8%)	8 (8%)	3 (3%)	-	68 (67%)
NE	23 (70%)	15 (45%)	7 (21%)	5 (15%)	1 (3%)	-	25 (76%)
CE	41 (69%)	22 (37%)	25 (42%)	13 (22%)	3 (5%)	-	45 (76%)
SWE	24 (26%)	13 (14%)	23 (25%)	14 (15%)	5 (5%)	-	29 (32%)
SE	19 (16%)	15 (13%)	28 (24%)	16 (14%)	8 (7%)	-	32 (28%)
NWE	30 (56%)	21 (39%)	13 (24%)	9 (16%)	2 (4%)	-	30 (56%)
WE	18 (38%)	11 (23%)	11 (23%)	9 (19%)	2 (4%)	-	18 (38%)
<u>ER</u>	57 (25%)	37 (16%)	37 (16%)	19 (8%)	8 (3.5%)	-	70 (31%)
<u>W.A.</u>	98 (20%)	62 (13%)	41 (8.5%)	24 (5%)	12 (2.5%)	1 (0.2%)	114 (24%)

Table 3. Numbers of *Acacia* species shared between Western Australian *Acacia* districts. The percentage of species shared, relative to the total for each Region and Area (see Table 1), is given in parentheses. Names of shared species are obtained from Appendix 1. Abbreviations for Regions and Areas are given in the caption to Table 1.

Region/ Area	SWC	CNW	SWR	NK	SK	KR	NE	CE	SWE	SE	NWE	WE	ER
SWC	204	125(61%)		0	1(0.5%)	1(0.5%)	1(0.5%)	2(1%)	21(10%)	52(25%)	1(0.5%)	7(3%)	61(30%)
CNW	125(51%)	245		0	4(2%)	4(2%)	4(2%)	16(6%)	65(26%)	79(32%)	9(4%)	27(11%)	117(48%)
<u>SWR</u>			324	0	4(1%)	4(1%)	4(1%)	16(5%)	65(20%)	89(27%)	9(3%)	2(0.5%)	130(40%)
NK	0	0	0	66	35(53%)		9(14%)	6(9%)	2(3%)	0	12(18%)	5(8%)	16(24%)
SK	1(1%)	4(6%)	4(6%)	35(50%)	70		22(31%)	23(33%)	10(14%)	4(6%)	35(50%)	16(23%)	39(56%)
<u>KR</u>	1(1%)	4(4%)	4(4%)			101	22(22%)	23(23%)	10(10%)	4(4%)	35(35%)	16(16%)	39(39%)
NE	1(3%)	4(12%)	4(12%)	9(27%)	22(67%)	22(67%)	33	21(64%)	10(30%)	5(15%)	21(64%)	14(42%)	
CE	2(3%)	16(27%)	16(27%)	6(10%)	23(39%)	23(39%)	21(35%)	59	29(49%)	22(37%)	30(51%)	23(39%)	
SWE	21(23%)	65(71%)	65(71%)	2(2%)	10(11%)	10(11%)	10(11%)	29(31%)	92	45(49%)	20(22%)	28(30%)	
SE	52(46%)	77(67%)	89(78%)	0	4(3%)	4(3%)	5(4%)	22(19%)	45(39%)	114	10(9%)	13(11%)	
NWE	1(2%)	9(17%)	9(17%)	12(22%)	35(65%)	35(65%)	21(39%)	30(56%)	20(37%)	10(18%)	54	22(41%)	
WE	7(15%)	27(57%)	27(57%)	5(10%)	16(34%)	16(34%)	14(30%)	23(49%)	28(59%)	13(28%)	22(47%)	47	
<u>ER</u>	61(27%)	117(52%)	130(58%)	16(7%)	39(17%)	39(17%)							224

Species	Section	W.A. <i>Acacia</i> Areas occupied										Extra W.A. occurrence			
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC				
<i>A. helmsiana</i>	Phyllodineae						2x	1x				2x			N.T.
<i>A. gilesiana</i>	Plurinerves					1x	1x					1x			S.A.
<i>A. kempeana</i>	Juliflorae				1x		5x	8x				5x	2x		N.T., Q., S.A.
<i>A. linophylla</i>	Juliflorae				4x		5x	13x				4x			N.T., S.A.
<i>A. pruinocarpa</i>	Phyllodineae				2x		3x	9x				2x			N.T., S.A.
<i>A. pachyacra</i>	Phyllodineae				3x		3x	4x				2x			N.T., S.A.
<i>A. jamesiana</i>	Juliflorae				5x	5x	1x	5x				8x			N.T., Q., S.A.
<i>A. ligulata</i>	Phyllodineae				3x	5x	8x	8x				7x			N.S.W., Vic.
<i>A. victoriae</i>	Phyllodineae				5x	5x	3x	12x				1x			N.T., Q., S.A., N.S.W., Vic.
<i>A. tetragonophylla</i>	Phyllodineae				5x	6x	3x	11x				7x	6x		N.T., Q., S.A., N.S.W., Vic.
<i>A. stowardii</i>	Juliflorae				2x		2x	1x				6x	1x		N.T., Q., S.A., N.S.W.
<i>A. murrayana</i>	Phyllodineae				1x	4x	2x	8x				7x	5x		N.T., Q., S.A., N.S.W.
<i>A. aneura</i>	Juliflorae				1x	4x	9x	13x				11x			N.T., Q., S.A., N.S.W.
<i>A. ramulosa</i>	Juliflorae				5x	5x	1x	12x				4x	4x		N.T., Q., S.A., N.S.W.
<i>A. grasbyi</i>	Juliflorae				5x	2x	1x	5x				1x	1x		N.T., S.A.
<i>A. sibina</i>	Juliflorae				1x			4x				2x	1x		N.T., S.A.
<i>A. tysonii</i>	Phyllodineae							7x				1x	2x		N.T., S.A.
<i>A. exocarpoides</i>	Phyllodineae							5x				1x			N.T., S.A.
<i>A. olgana</i>	Juliflorae							1x				1x			N.T., S.A.
<i>A. palustris</i>	Juliflorae							2x				1x			N.T., S.A.
<i>A. obtecta</i>	Plurinerves							1x				1x			N.T., Q., S.A., N.S.W.
<i>A. kochii</i>	Juliflorae							1x				7x	3x		N.T., Q., S.A., N.S.W.
<i>A. brachystachya</i>	Juliflorae							11x				11x			N.T., Q., S.A., N.S.W.

Species	Section	W.A. Acacia Areas occupied										Extra W.A. occurrence			
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC				
<i>A. wiseana</i>	Phyllodineae				3x	1x	1x						1x		N.T.
<i>A. burkittii</i>	Juliflorae						4x					9x	16x	5x	S.A., N.S.W.
<i>A. craspedocarpa</i>	Juliflorae										9x	7x	3x		
<i>A. quadrimarginea</i>	Juliflorae						3x						6x	2x	
<i>A. duriuscula</i>	Plurinerives											1x	1x		N.T., Q., S.A., N.S.W., Vic.
<i>A. oswaldi</i>	Plurinerives										1x		8x		S.A.
<i>A. papyrocarpa</i>	Plurinerives										1x		5x		N.T., Q., S.A., N.S.W., Vic.
<i>A. sessiliceps</i>	Plurinerives												1x		S.A.
<i>A. xerophila</i>	Phyllodineae												4x		N.T., Q., S.A.
<i>A. camptoclada</i>	Phyllodineae												7x	2x	
<i>A. rigens</i>	Plurinerives												3x		Q., S.A., N.S.W., Vic.
<i>A. dempsteri</i>	Phyllodineae												4x		
<i>A. inamabilis</i>	Phyllodineae												4x		
<i>A. hakeoides</i>	Phyllodineae												2x	1x	Q., S.A., N.S.W., Vic.
<i>A. dubia</i>	Phyllodineae												1x		
<i>A. pachypoda</i>	Phyllodineae												3x		
<i>A. rendlei</i>	Phyllodineae												2x		
<i>A. lachnophylla</i>	Phyllodineae												1x	1x	
<i>A. anceps</i>	Phyllodineae												1x		S.A.
<i>A. prainii</i>	Phyllodineae												7x	5x	N.T., S.A.
<i>A. steedmanii</i>	Phyllodineae										2x	4x	5x		
<i>A. nyssophylla</i>	Plurinerives						1x				1x		4x		
<i>A. resinomarginea</i>	Juliflorae												2x		
<i>A. jutsonii</i>	Juliflorae												4x	1x	
<i>A. colletioides</i>	Plurinerives												6x		
<i>A. erinacea</i>	Phyllodineae												7x	5x	S.A., N.S.W., Vic.
<i>A. hemiteles</i>	Phyllodineae												11x	11x	S.A.
													2x	9x	
													11x	1x	

Species	Section	W.A. <i>Acacia</i> Areas occupied											Extra W.A. occurrence			
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC					
<i>A. enervia</i>	Plurinerves											4x	3x			
<i>A. inaequiloba</i>	Phyllodineae											3x	2x			
<i>A. inceana</i>	Plurinerves											3x	2x			
<i>A. websteri</i>	Juliflorae											2x	1x			
<i>A. resinostipulea</i>	Plurinerves											3x	1x			
<i>A. rossei</i>	Phyllodineae											1x	3x			
<i>A. spinosissima</i>	Phyllodineae											2x	3x			
<i>A. nodiflora</i>	Phyllodineae											2x	6x			
<i>A. eremophila</i>	Plurinerves											6x	6x			
<i>A. leptoneura</i>	Plurinerves											6x	6x			
<i>A. merrallii</i>	Phyllodineae											7x	8x			S.A.
<i>A. spathulifolia</i>	Phyllodineae											1x	5x			
<i>A. longispinea</i>	Plurinerves											2x	7x			
<i>A. leptospermoides</i>	Phyllodineae												9x			
<i>A. idiomorpha</i>	Phyllodineae												5x			
<i>A. coolgardiensis</i>	Juliflorae												11x			
<i>A. coolgardiensis</i>	Juliflorae												11x			
<i>A. acuminata</i>	Juliflorae												8x			
<i>A. neurophylla</i>	Juliflorae												1x			
<i>A. xanthina</i>	Phyllodineae												8x			
<i>A. acanthoclada</i>	Phyllodineae												1x			
<i>A. aciphylla</i>	Juliflorae												3x			
<i>A. acuaria</i>	Phyllodineae												8x			
<i>A. andrewsii</i>	Phyllodineae												6x			
<i>A. assimilis</i>	Plurinerves												8x			
<i>A. beauverdiana</i>	Plurinerves												6x			
<i>A. congesta</i>	Phyllodineae												5x			
<i>A. dielsii</i>	Plurinerves												9x			
<i>A. eremaea</i>	Plurinerves												3x			
<i>A. fragilis</i>	Plurinerves												8x			
<i>A. jibberdingensis</i>	Juliflorae												6x			

S.A., N.S.W., Vic.

Species	Section	W.A. <i>Acacia</i> Areas occupied										Extra W.A. occurrence				
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC					
<i>A. trigonophylla</i>	Alatae											5x				
<i>A. scirpifolia</i>	Phyllodineae											6x				
<i>A. phaeocalyx</i>	Phyllodineae											3x				
<i>A. jacksonioides</i>	Phyllodineae											5x				
<i>A. intricata</i>	Phyllodineae											4x			1x	
<i>A. merrickae</i>	Phyllodineae											2x				
<i>A. cochlocarpa</i>	Juliflorae											2x				
<i>A. sciophanes</i>	Plurinerves											1x				
<i>A. auronitens</i>	Phyllodineae											4x			1x	
<i>A. blakelyi</i>	Phyllodineae											5x				
<i>A. cliftoniana</i>	Phyllodineae											2x				
<i>A. dilatata</i>	Phyllodineae											4x			1x	
<i>A. flabellifolia</i>	Phyllodineae											2x				
<i>A. striatula</i>	Plurinerves											3x				
<i>A. semicircularis</i>	Phyllodineae											2x				
<i>A. volubilis</i>	Alatae											2x				
<i>A. vassalii</i>	Phyllodineae											1x				
<i>A. ericifolia</i>	Phyllodineae											4x				1x
<i>A. plicata</i>	Pulchellae											2x				
<i>A. oxyclada</i>	Plurinerves											2x				
<i>A. Forrestiana</i>	Phyllodineae											1x				
<i>A. epacantha</i>	Pulchellae											1x				
<i>A. dura</i>	Plurinerves											1x				
<i>A. ashbyae</i>	Phyllodineae											3x				
<i>A. comans</i>	Plurinerves											3x				
<i>A. fagonioides</i>	Pulchellae											3x			1x	
<i>A. adnata</i>	Plurinerves											2x				
<i>A. guinetii</i>	Pulchellae											1x				
<i>A. megacephala</i>	Pulchellae											1x				
<i>A. quadrisulcata</i>	Phyllodineae											2x				

Species	Section	W.A. Acacia Areas occupied										Extra W.A. occurrence				
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC					
<i>A. oldfieldii</i>	Juliflorae															
<i>A. retrorsa</i>	Phyllodineae													1x		
<i>A. grisea</i>	Pulchellae													1x		
<i>A. depressa</i>	Pulchellae													1x		
<i>A. jennerae</i>	Phyllodineae													4x		N.T., N.S.W.
<i>A. rostellifera</i>	Phyllodineae													5x		
<i>A. latipes</i>	Plurinerves													9x		
<i>A. multispicata</i>	Juliflorae													1x		
<i>A. saligna</i>	Phyllodineae													2x		
<i>A. lasiocalyx</i>	Juliflorae													1x		
<i>A. lasiocarpa</i>	Pulchellae													3x		
<i>A. brachyclada</i>	Phyllodineae													1x		
<i>A. ixiophylla</i>	Plurinerves													4x		
<i>A. poliochroa</i>	Phyllodineae													2x		
<i>A. unifissilis</i>	Phyllodineae													1x		
<i>A. tamminensis</i>	Phyllodineae													1x		
<i>A. shuttleworthii</i>	Phyllodineae													2x		
<i>A. sphacelata</i>	Phyllodineae													1x		
<i>A. stenoptera</i>	Alatae													2x		
<i>A. truncata</i>	Phyllodineae													6x		
<i>A. viscifolia</i>	Phyllodineae													3x		
<i>A. leptopetala</i>	Phyllodineae													2x		
<i>A. moirii</i>	Pulchellae													3x		
<i>A. pulchella</i>	Pulchellae													4x		
<i>A. ridleyana</i>	Plurinerves													8x		
<i>A. saxatilis</i>	Phyllodineae													1x		
<i>A. sclerophylla</i>	Phyllodineae													2x		
<i>A. acutifolia</i>	Plurinerves													1x		
<i>A. alata</i>	Alatae													1x		
<i>A. brachyphylla</i>	Plurinerves													6x		
														4x		

S.A., N.S.W., Vic.

Species	Section	W.A. <i>Acacia</i> Areas occupied										Extra W.A. occurrence			
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC				
<i>A. campylophylla</i>	Plurinerves													1x	
<i>A. celsastrifolia</i>	Phyllodineae													3x	
<i>A. dentifera</i>	Phyllodineae													4x	
<i>A. ephedroides</i>	Juliflorae													1x	
<i>A. erioclada</i>	Phyllodineae													1x	
<i>A. heteroneura</i>	Juliflorae													1x	
<i>A. incrassata</i>	Phyllodineae													1x	
<i>A. inophloia</i>	Juliflorae													1x	
<i>A. squamata</i>	Phyllodineae													6x	
<i>A. tenanophylla</i>	Plurinerves													3x	
<i>A. varia</i>	Pulchellae													9x	
<i>A. willdenowiana</i>	Alatae													7x	
<i>A. loxophylla</i>	Plurinerves													2x	
<i>A. nitidula</i>	Plurinerves									1x				6x	
<i>A. pulviniformis</i>	Phyllodineae													1x	
<i>A. pycnocephala</i>	Phyllodineae													3x	
<i>A. sedifolia</i>	Phyllodineae													2x	
<i>A. crassistipula</i>	Phyllodineae													1x	
<i>A. deflexa</i>	Plurinerves													1x	
<i>A. heteroclita</i>	Plurinerves													1x	
<i>A. kingiana</i>	Plurinerves													4x	
<i>A. lanuginosa</i>	Plurinerves									1x				1x	
<i>A. densiflora</i>	Plurinerves													1x	
<i>A. dermatophylla</i>	Phyllodineae									2x				1x	
<i>A. diaphylloidea</i>	Phyllodineae									1x				4x	
<i>A. harveyi</i>	Phyllodineae									1x				2x	
<i>A. crassuloides</i>	Phyllodineae									1x				3x	
<i>A. binata</i>	Phyllodineae									2x				2x	
<i>A. cometes</i>	Phyllodineae									1x				3x	
<i>A. gonophylla</i>	Plurinerves									1x				4x	
										2x				6x	

Species	Section	W.A. <i>Acacia</i> Areas occupied										Extra W.A. occurrence		
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC			
<i>A. phlebotetala</i>	Phyllodineae												3x	
<i>A. ferocior</i>	Phyllodineae												4x	
<i>A. acellerata</i>	Plurinerives												4x	
<i>A. ingrata</i>	Phyllodineae												3x	
<i>A. cedroides</i>	Phyllodineae												3x	
<i>A. argutifolia</i>	Phyllodineae												2x	
<i>A. triptycha</i>	Plurinerives												7x	
<i>A. curvata</i>	Plurinerives												2x	
<i>A. cognata</i>	Juliflorae												2x	
<i>A. nigricans</i>	Pulchellae												2x	
<i>A. biflora</i>	Phyllodineae												4x	
<i>A. maxwellii</i>	Phyllodineae												1x	
<i>A. sorophylla</i>	Phyllodineae												1x	
<i>A. littorea</i>	Phyllodineae												6x	
<i>A. leioderma</i>	Pulchellae												3x	
<i>A. dictyoneura</i>	Plurinerives												3x	
<i>A. simulans</i>	Phyllodineae												1x	
<i>A. empelioclada</i>	Phyllodineae												2x	
<i>A. browniana</i>	Pulchellae												8x	
<i>A. extensa</i>	Phyllodineae												8x	
<i>A. urophylla</i>	Phyllodineae												7x	
<i>A. gilbertii</i>	Pulchellae												6x	
<i>A. uliginosa</i>	Phyllodineae												3x	
<i>A. paradoxa</i>	Phyllodineae												5x	
<i>A. prismifolia</i>	Phyllodineae												2x	
<i>A. robiniae</i>	Phyllodineae												2x	
<i>A. pentadenia</i>	Pulchellae												3x	
<i>A. luteola</i>	Pulchellae												2x	

Q., S.A., N.S.W.
Vic.

Species	Section	W.A. <i>Acacia</i> Areas occupied											Extra W.A. occurrence		
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC				
P60 (B.R. Maslin 3975)	Plurinerves							2x					8x		
P61 (J.S. Beard 4199)	Plurinerves	1x													
P62 (R.J. Chimcock 3346)	Phyllodineae								1x						
P63 (B.R. Maslin 3594)	Plurinerves							4x					3x		
P64 (B.R. Maslin 3424)	Plurinerves												3x		
P65 (B.R. Maslin 2413)	Phyllodineae							1x	2x				2x		
P66 (B.R. Maslin 3878)	Plurinerves													2x	
P67 (B.R. Maslin 4644)	Plurinerves			4x											
P68 (A.S. George 10360)	Plurinerves				2x			2x					1x		
P69 (W.E. Blackall 3754)	Juliflorae												1x		
P70 (B.R. Maslin 4163)	Juliflorae												2x	1x	
P71 (B.R. Maslin 3641)	Juliflorae							1x					2x		
P72 (B.R. Maslin 2379)	Juliflorae									2x			2x		
P73 (W.E. Blackall 1387)	Juliflorae												1x		
P74 (B.R. Maslin 1773)	Juliflorae												4x		1x
P75 (B.R. Maslin 4126)	Juliflorae												2x		
P76 (A.S. George 14611)	Phyllodineae												1x		
P77 (R.D. Royce 10219)	Phyllodineae								1x					1x	
P78 (A.S. George 7069)	Phyllodineae													2x	
P79 (B.R. Maslin 796)	Phyllodineae												1x	2x	
P80 (D.F. Blaxell W75/48)	Phyllodineae								1x					1x	
P81 (B.R. Maslin 2446)	Phyllodineae									2x				2x	
P82 (B.R. Maslin 3896)	Phyllodineae													2x	
P83 (K. Newbey 4765)	Phyllodineae												1x	2x	
P84 (B.R. Maslin 4349)	Phyllodineae												1x		
P85 (K. Newbey 373)	Phyllodineae								1x				2x	4x	
P86 (B.R. Maslin 4050)	Phyllodineae													2x	
P87 (A.S. Mitchell 591)	Juliflorae														
P88 (B.R. Maslin 4708)	Phyllodineae														

No records at Area level.
2x

Species	Section	W.A. Acacia Areas occupied										Extra W.A. occurrence			
		NK	SK	NWE	WE	NE	CE	SWE	SE	CNW	SWC				
P89 (G.N. Royce s.n. Aug. 1973)	Phyllodineae					2x									
P90 (B.R. Maslin 2237)	Juliflorae			1x											
P91 (W.V. Fitzgerald s.n. 1895)	Plurinerives											1x			
P92 (B.R. Maslin 2174)	Plurinerives			1x											
P93 (A.S. George 15415)	Plurinerives					1x									
P94 (J.S. Beard 6178)	Juliflorae		1x	1x	1x		1x								
P95 (J. Kruiskamp 4236)	Juliflorae											1x			