

Study on plant material of annual borders and autumn perennial borders, and their flowering period at the Royal Horticultural Society's Garden at Wisley

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英国王立園芸協会ウィズレーガーデンの一年草ボーダーと秋咲き宿根草ボーダーにおける植物の種類と開花時期の調査

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Plant material and results

1. Annual border

Plant materials of the annual border and their flowering periods were observed at the Royal Horticultural Society's Garden at Wisley. The annual border was a double border, which consisted of a hardy annual border and a half hardy annual border. The hardy annual border consisted of 52 species or varieties and the half hardy annual border consisted of 48.

Seeds of hardy annuals were sown directly in the border bed from 19 to 23 April in 1993. Seeds of half hardy annuals were sown from January to March in the green house. The temperature was kept at 10°C minimum until the seedlings were planted out on the border bed from 1 to 5 June. The maps of both borders are shown in Fig.1 and 2. Flowering was observed every week from 29 June to 5 October. Flowering period is shown in Table 2. Plant height was measured at the time of full bloom. All plants were removed from beds on 12 October.

2. Autumn perennial border

Plant material of autumn perennial borders and their flowering period were observed. The autumn perennial border was a double border, each of which was 29m long and 5m wide. The two borders consisted of 62 and 56 species or varieties each. The maps of both borders were shown in Fig. 3 and 4. Flowering was observed from 20 July to 17 November in 1993. There was a heavy frost for 4 days from 15 to 19 October, and many flowers were severely damaged.

The mean monthly maximum and minimum temperature in 1993 is shown in Table 1. Scientific names of plants were confirmed by 「The RHS Plant Finder 1997-1998, D.K.」. The author thanks to Mr. Andy Hart, Supervisor of the Floral Department at the Royal Horticultural Society's Garden at Wisley.

Table 1. Mean monthly maximum and minimum temperature at the Wisley Garden in 1993

		March	April	May	June	July	August	September	October
1993	mean maximum	11.6°C	14.4	17.5	21.3	20.9	21.1	17.0	13.0
	mean minimum	1.1	5.1	6.6	10.4	11.5	9.8	8.1	5.7

Plant Name	Hardy (H) or Half Hardy (HH)	Company ¹	Date sown ¹	Height ²	29/June	6/July	13	20	27	3/Aug.	10	17	24	1/Sep.	7	14	21	28	5/Oct.
				(cm)															
Cosmos 'Sunny Gold'	HH (D2)	S	16/Mar.	85		×	○	○	○	●	●	●	△	△	×				
Cosmos 'Versailles Tetra'	HH (B3)	T&M	16/Mar.	110	×	×	○	●	●	●	●	●	●	●	●	●	△	△	△
Coreopsis 'Early Sunrise'	H (B2)	S	19-23/Apr.	70	×	×	○	○	○	○	○	○	○	○	○	○	△	△	△
Coreopsis 'Golden Crown'	HH (B2-3)	D	19-23/Apr.	85			○	○	○	×	○	○	○	○	○	○	△	△	△
Craspedia globosa	H (A2)		19-23/Apr.	90									×	×	○	○	○	○	○
Crepis rubra	H (E2)	D	19-23/Apr.	60			×	○	●	●	△	×	●	●					
Cynoglossum 'Permanent'	H (C2)	U	19-23/Apr.	85			×	○	○	○	●	●	●	●	△	△	△	△	△
Delphinium ajacis 'Stock flowered special Mixed'	H (D3)	S	19-23/Apr.	120						×	○	○	○	○	○	○	△	△	△
Delphinium 'Blue Cloud'	HH (B2)	D	19-23/Apr.	80	×		○	●	●	●	●	●	△	△	△	△	△	△	×
Dimorphotheca 'Glistening White'	H (A3)	D	19-23/Apr.	37		×	○	○	○	○	○	△	△	△	△	△	△	×	
Felicia heterophylla 'The Blues'	H (C2)	S	19-23/Apr.	35		×	○	○	○	○	△	△	△	△	△	△	×		
Gaillardia 'Yellow Plume'	HH (C2)	D	28/Mar.	75		×	○	○	○	○	●	●	●	●	●	●	△	△	×
Gaura lindheimeri	H (A3)	S	19-23/Apr.	65												×	○	×	
Gazania 'Mini-Star White'	HH (E1)	U	16/Mar.	30		×	○	○	○	○	●	●	●	●	●	●	△	△	△
Gazania 'Orange & Lemon'	HH (D1)	S	16/Mar.	30		×	○	○	○	○	○	○	○	○	○	○	△	△	△
Geranium 'Horizon Red'	HH (A1)	S	10/Mar.	40			×	○	○	○	○	○	○	○	○	○	△	△	△
Geranium 'Silky White'	HH (E3)	U	10/Feb.	40		×	○	○	○	○	○	○	○	○	○	○	△	△	△
Godetia 'Crimson Glow'	H (D2)	D	19-23/Apr.	60								×	○	○	○	○	○	○	○
Godetia 'Sybil Sherwood'	H (D2)	S	19-23/Apr.	40								×	○	○	○	○	○	○	○
Gomphrena globosa 'Buddy'	H (D1)	Chil	19-23/Apr.	15					×	○	○	○	○	○	○	○	○	○	○
Gypsophila 'Deep Rose'	H (D2-3)	Chil	19-23/Apr.	30				×	○	○	○	○	○	○	○	○	○	○	○
Helianthus 'Orange Sun'	H (B3)	T&M	19-23/Apr.	100											×	○	○	○	○
Helichrysum 'Hot Bikini'	H (E3)	S	19-23/Apr.	80												○	○	○	○
Heliphila 'Mediterranean Blue'	HH (B2)	U	16/Mar.	50	×		●	●	●	△	△	×	●	●	●	●	●	●	△
Heliotropium 'Marine'	HH (C2)	S	10/Feb.	65			○	○	○	○	○	○	○	○	○	○	△	△	△
Iberis 'Cream Flash'	H (A2)	T&M	19-23/Apr.	37		×	○	○	○	○	○	△	×	×	○	○	○	○	○
Iberis 'Dwarf Fairyland Mix'	H (E1)	T&M	19-23/Apr.	45		×	○	○	○	○	○	△	×	×	○	○	○	○	○
Impatiens 'Camellia Flowered'	HH (A2)	S	16/Mar.	75		×	○	○	○	○	○	○	○	○	○	○	△	△	×
Layia elegans	H (B1)	D	19-23/Apr.	60			○	○	○	○	△	△	×	×					
Legousia 'Blue Carpet'	H (C1)	D	19-23/Apr.	50		×	○	○	○	○	○	○	○	○	○	○	△	△	×

Plant Name	Hardy (H) ¹ or Half Hardy (HH)	Company ²	Date sown ⁴	Height ⁵ (cm)	6/July	13	20	27	3/Aug.	10	17	24	1/Sep.	7	14	21	28	5/Oct.	
Salvia 'Pink Lady'	H (D2)	S	19-23/Apr.	70		×	○	○	●	●	●	●	●	●	●	●	●	●	●
Sanvitalia procumbens	HH (C1)	D	14/Mar.	40	×	○	●	●	●	●	●	●	●	●	●	●	●	●	△
Scabiosa 'Blue Moon'	H (B3)	T&M	19-23/Apr.	100					×	○	○	●	●	●	●	●	●	●	●
Tanacetum 'Grandiflora'	HH (E2)	D	2/Mar.	80	×	○	○	○	●	●	●	●	△	△	△	△	△	△	△
Tanacetum 'White Gem'	HH (E2)	S	2/Mar.	30	×	○	●	●	●	●	●	●	●	●	●	●	●	●	△
Tithonia 'Goldfinger'	HH (C3)	S	30/Mar.	90	×	○	○	○	○	○	○	○	○	○	○	○	○	○	△
Tropaeolum 'Whirly Bird Mixed'	H (A1)	S	19-23/Apr.	90	×	○	○	○	○	○	○	○	○	○	○	○	○	○	△
Ursinia anethoides	H (B2)	D	19-23/Apr.	75				×	○	○	○	○	○	○	○	○	○	○	△
Viscaria 'Rose Angel'	H (D1·2)	S	19-23/Apr.	35		×	○	○	○	○	○	○	○	○	○	○	○	○	△
Viscaria 'Royal Celebration'	H (D1·2)	D	19-23/Apr.	50		×	○	○	○	○	○	○	○	○	○	○	○	○	△

¹H=Plants at Hardy annual border; HH=plants at Half Hardy border. ²Place in the border. ³Seed companies: D=Dobbies, T&M=Thompson and Morgan, U=Unwins, S=Sutton, Chil=Chilton. ⁴Seeds of plants at Hardy annual border were sown directly in the garden bed from 19th to 23th of April. Seeds of the plants at Half Hardy annual border were sown in the green house, and temperature was kept at 10 °C minimum. Seedlings were planted in the garden bed from 1st to 5th of June. ⁵Plant height indicates the height at fullbloom. ⁶Flowering conditions: × =no open flowers observed, ○ =flowering started, ● =full bloom, △ =dead flowers exceed opened flowers. All plants were removed from the beds on 12th of October.

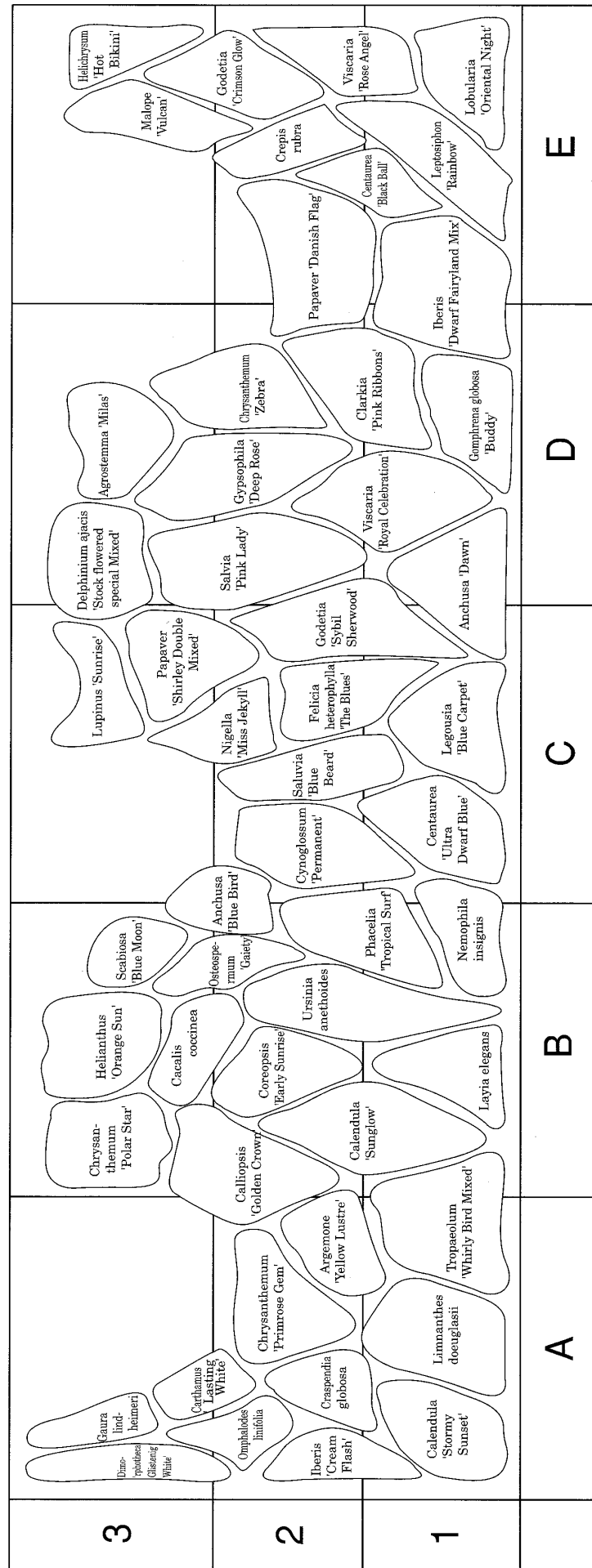


Fig. 1. Hardy Annual Border at the Wisley Garden in 1993.

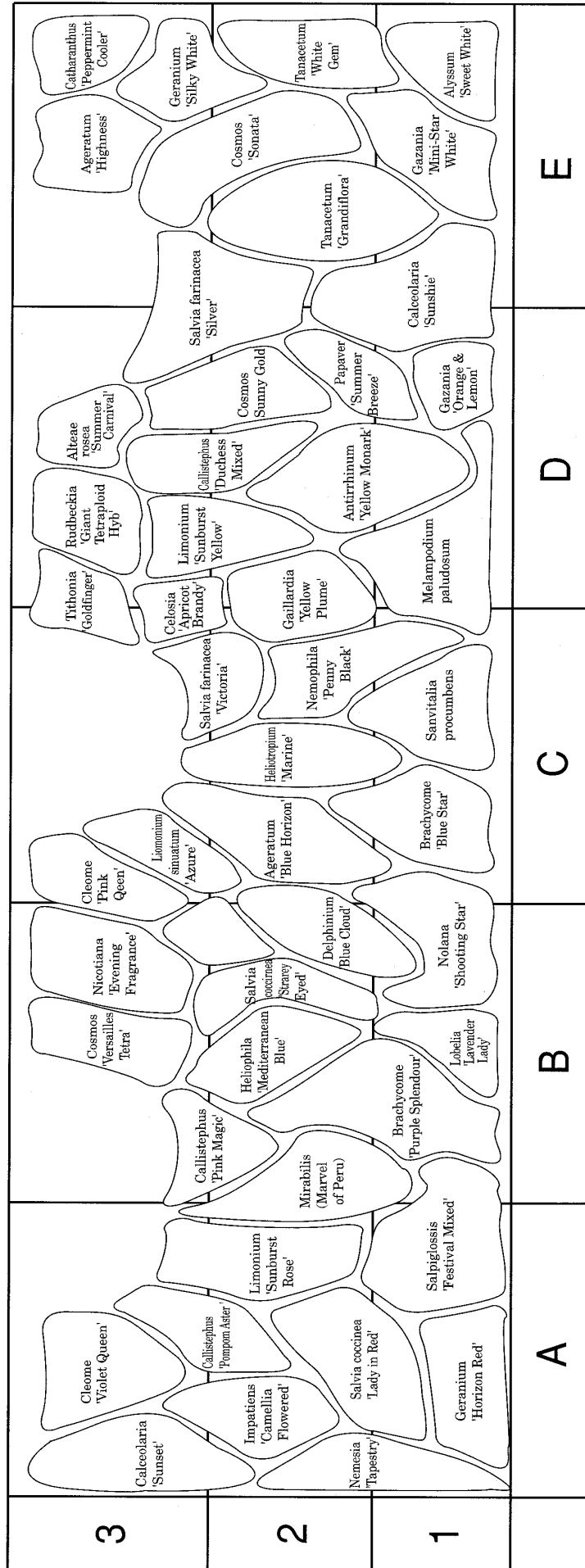


Fig. 2. Half Hardy Annual Border.

Table 3. Flowering period of Autumn Garden Plants at the Wisley Garden in 1993

Plant Name	Place in the border	20/July/26	8/Aug. 26	1/Sep. 7	13	21	28	5/Oct. 28	12	19	26	3/Nov. 10	17
Anemone hepheensis 'Splendens'	II-F-2			●	●	●	●	△	△	- ²			
Anemone x hybrida 'Alba'	II-B-3			●	●	●	●	△	△	-			
Anemone x hybrida 'Bressingham Glow'	I-B-2		×	●	●	●	●	△	△	-			
Anemone x hybrida 'Geante des Blanches'	II-F-3			○	●	●	●	△	△	-			
Anemone x hybrida 'Lady Gilmour'	I-D-3		×	●	●	●	●	△	△	-			
Anemone x hybrida 'Luise Uhink'	I-E-2		×	●	●	●	●	△	△	-			
Anemone x hybrida 'Monterosa'	II-C-2		×	●	●	●	△	△	△	-			
Anemone x hybrida 'Prince Henry'	I-D-2, I-E-3		×	●	●	●	●	△	△	-			
Anemone x hybrida 'Prinz Heinrich'	I-D-2		●	●	●	△	△	△	△	-			
Anemone x hybrida 'Queen Charlotte'	II-A-3			●	●	●	●	△	△	-			
Anemone x hybrida 'Whirlwind'	I-A-3		×	●	●	●	●	△	△	-			
Aster amellus 'Blue King'	I-F-1		×	●	●	●	●	△	△	-			
Aster amellus 'Jacqueline Genebrier'	I-B-1, 2			○	●	●	●	●	△	-			
Aster amellus 'King George'	I-D-1		×	○	●	●	●	△	△	-			
Aster amellus 'Lac de Gen ve'	II-C-2		×	○	○	○	○	○	○	●			
Aster amellus 'Lady Hindlip'	I-C-2			○	○	△	△	-	●	-			
Aster amellus 'Pink Zenith'	II-F-1			○	○	●	●	●	△	-			
Aster amellus 'Ultramarine'	I-F-3		×	○	●	●	●	△	△	-			
Aster amellus 'Weltfriede'	II-E-1		×	○	●	●	●	●	△	△			
Aster coelestis 'Coombe Fishacre'	II-C-2			○	○	○	△	△	-				
Aster cordifolius 'Aldebaran'	I-C-3			○	○	○	○	△	△	-			
Aster cordifolius 'Sweet Lavender'	II-E-3			○	○	○	○	○	○	○			
Aster divaricatus	I-F-2		×	○	○	△	△	△	△	-			
Aster ericoides 'Blue Star'	I-D-2						×	○	○	●	△	△	-
Aster ericoides 'Brimstone'	II-E-2							×	○	○	△	△	△
Aster ericoides 'Cinderella'	II-F-2			×	○	●	●	●	△	-			
Aster ericoides 'Desire'	I-E-1			×	○	○	○	○	△	-			
Aster ericoides 'Erk nig'	I-A-3			×	○	○	○	○	○	△	△	△	-
Aster ericoides 'Esther'	I-A-1			×	○	○	○	○	○	○	△	△	△
Aster ericoides 'Golden Spray'	II-C-3						×	○	○	○	△	△	△

Plant Name	Place in the border	20/July/	26	8/Aug.	10	17	24	1/Sep.	7	13	21	28	5/Oct.	12	19	26	3/Nov.	10	17
Aster ericoides 'Hon. Edith Gibbs'	II-D-3							×	○	○	●	●	●	●	△	-	-	-	-
Aster ericoides 'Pink Cloud'	I-E-1·2								×	○	○	●	●	△	-	-	-	-	-
Aster ericoides 'Ringdove'	I-B-3							×	×	○	○	○	●	●	△	△	△	△	-
Aster ericoides 'Rosy Veil'	II-E-2								×	○	○	●	●	△	-	-	-	-	-
Aster ericoides 'White Heather'	II-A-2·3								○	○	○	△	△	-	-	-	-	-	-
Aster incisus	I-A-1·2								○	●	●	●	●	△	△	△	-	-	-
Aster lateriflorus 'Coombe Fishacre'	II-D-2								○	○	○	●	●	-	-	-	-	-	-
Aster lateriflorus 'Datschii'	I-C-2·3								○	○	○	○	×	×	○	○	○	○	-
Aster lateriflorus 'Horizontalis'	I-F-2								×	○	○	●	●	●	△	△	△	△	-
Aster novas-angliae	I-F-3								△	-	●	●	-	-	-	-	-	-	-
Aster novas-angliae 'Andenken an Alma P tschke'	I-D-3								○	○	○	○	-	-	-	-	-	-	-
Aster novas-angliae 'Barr's Blue'	II-B-3								○	○	○	○	○	○	△	●	●	●	△
Aster novas-angliae 'Barr's Pink'	II-E-3								○	○	○	○	○	△	-	-	-	-	-
Aster novas-angliae 'Harrington's Pink'	I-E-3								○	○	○	○	○	△	△	-	-	-	-
Aster novas-angliae 'Herbstschnee'	II-E·F-3								○	○	○	○	△	-	-	-	-	-	-
Aster novas-angliae 'September Ruby'	I-C-2								○	○	○	○	△	-	-	-	-	-	-
Aster pringlei 'Monte Cassino'	II-A-3											×	○	○	△	○	-	-	-
Aster sedifolius	II-B-2								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Aline'	II-D-3								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Alison'	II-D-3								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Apollo'	I-E-2								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Belle'	I-A-3								○	○	○	○	○	○	○	○	○	○	-
Dendranthema 'Brightness'	I-A-2								○	○	○	○	○	-	-	-	-	-	-
Dendranthema 'Bronze Elite'	II-B-3								○	○	○	○	○	○	△	-	-	-	-
Dendranthema 'Brown Eyes'	II-A-2								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Copper Nob'	I-F-2								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Debbie'	I-C-2								○	○	○	○	○	○	-	-	-	-	-
Dendranthema 'Evelyn Bush'	II-F-3								○	○	○	○	○	○	-	-	-	-	-
Dendranthema 'Fairy Rose'	I-B-1								○	○	○	○	○	△	-	-	-	-	-
Dendranthema 'Golden Anemone'	II-A-2								○	○	○	○	○	△	-	-	-	-	-

Plant Name	Place in the border	20/July/	26	8/Aug.	10	17	24	1/Sep.	7	13	21	28	5/Oct.	12	19	26	3/Nov.	10	17
Dendranthema 'Whendy Baker'	II-B-1			×	○	○	●	●	●	●	●	△	△	-	-	-	-	-	-
Dendranthema 'White Gloss'	I-D-1				×	○	○	○	●	●	●	●	△	△	-	-	-	-	-
Dendranthema 'Yellow Pom'	I-C-1						×	○	○	○	●	●	●	●	△	-	-	-	-
Liriope muscari	I-C-1, II-B-1				×	○	○	○	●	●	●	●	●	●	●	△	-	-	-
Penstemon 'Apple Blossom'	II-C-1	○	○	●	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Barbara Barker'	I-A-2	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Chester Scarlet'	I-F-1	○	●	●	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Firebird'	I-B-1.2	○	●	●	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Flame'	II-F-1	○	●	●	●	●	●	●	●	●	△	△	△	△	△	△	△	△	△
Penstemon 'Garden Red'	I-F-2	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Lord Home'	II-F-1.2	○	●	●	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Mrs Morse'	I-C-1	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Myddelton Gem'	II-C-1	○	●	●	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Peace'	II-A-1	○	●	●	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Pennington Gem'	II-E-1	○	○	●	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Port Wine'	I-A-2	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Snow Storm'	II-D-2	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Sour Grapes'	I-D-1	○	●	●	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△
Penstemon 'Thorn'	I-B-1.2	○	●	●	●	△	△	△	△	△	△	△	△	△	△	△	△	△	△
Rudbeckia 'Goldsturm'	II-D-1	○	○	●	●	●	●	●	△	△	△	△	△	△	△	△	△	△	△
Schizostylis coccinea 'Major'	II-F-1				×	○	○	○	●	●	●	●	●	●	●	●	●	●	●
Schizostylis coccinea 'Sunrise'	I-A-1							×	○	○	○	○	○	○	○	○	○	○	○
Schizostylis coccinea 'Viscountess Byng'	I-C-1							×	×	×	×	×	×	×	×	×	×	×	×
Sedum 'Autumn Joy'	II-A-1				×	○	○	○	●	●	●	●	●	●	●	●	●	●	●
Sedum x spectabile 'Brilliant'	II-D-1				×	○	○	○	●	●	●	●	●	●	●	●	●	●	●
Sedum x spectabile 'Carmen'	I-B-1				×	○	○	○	●	●	●	●	●	●	●	●	●	●	●
Sedum x spectabile 'September Glow'	I-E-1				×	○	○	○	●	●	●	●	●	●	●	●	●	●	●

¹Flowering conditions: × = no open flowers observed, ○ = flowering started, ● = full bloom, △ = dead flowers exceed open flowers.
²There was a heavy frost for 4 days from 15th to 19th of October, and most flowers were severely damaged.

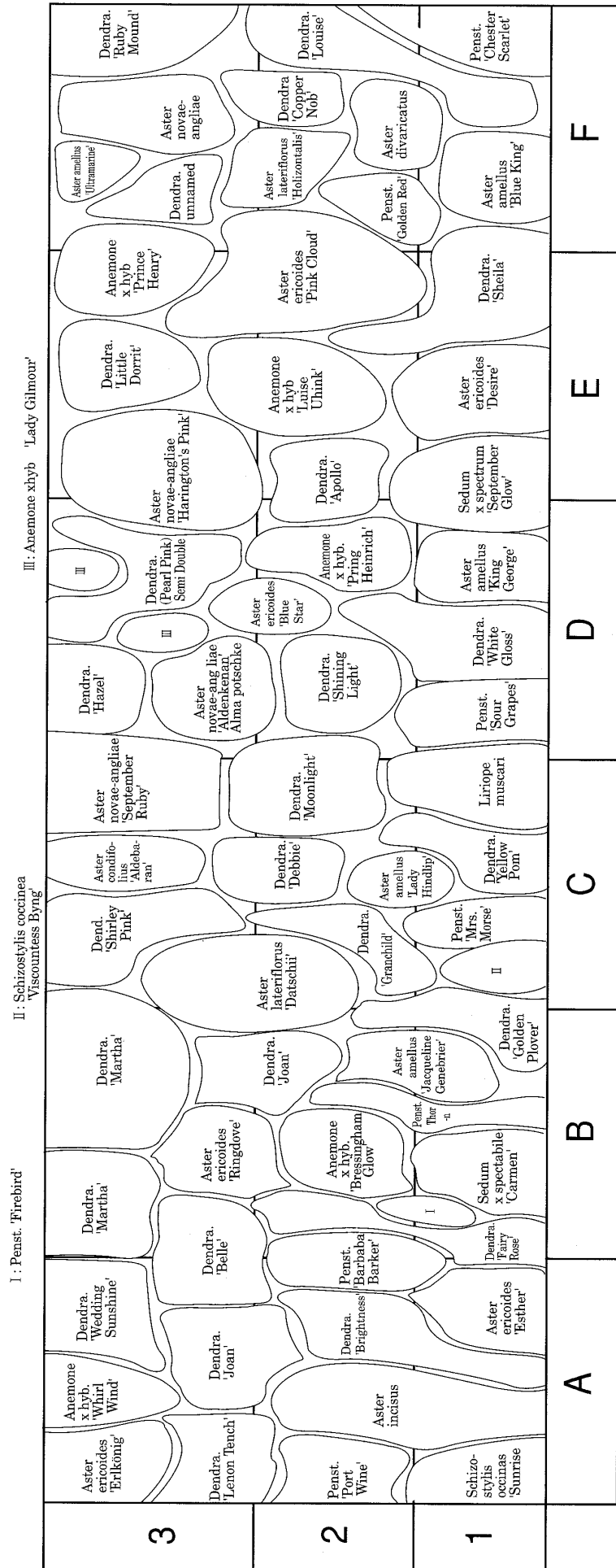


Fig. 3. Autumn perennial Border at the Wisley Garden in 1993 (No. 1) .

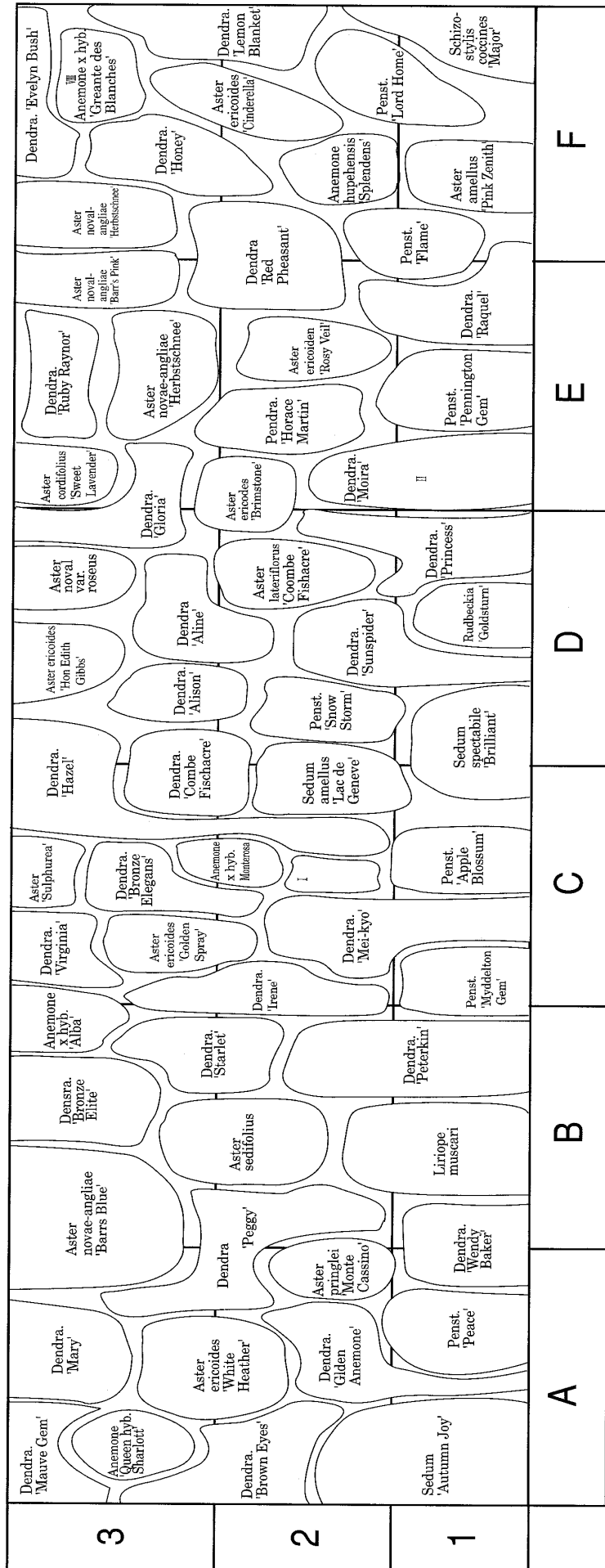


Fig. 4. Autumn perennial Border at the Wisley Garden in 1993 (No. I)