

## First Nuclear DNA Amounts in more than 300 Angiosperms

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- **Background and Aims** Genome size (DNA C-value) data are key biodiversity characters of fundamental significance used in a wide variety of biological fields. Since 1976, Bennett and colleagues have made scattered published and unpublished genome size data more widely accessible by assembling them into user-friendly compilations. Initially these were published as hard copy lists, but since 1997 they have also been made available electronically (see the Plant DNA C-values database [www.kew.org/cval/homepage.html](http://www.kew.org/cval/homepage.html)). Nevertheless, at the Second Plant Genome Size Meeting in 2003, Bennett noted that as many as 1000 DNA C-value estimates were still unpublished and hence unavailable. Scientists were strongly encouraged to communicate such unpublished data. The present work combines the databasing experience of the Kew-based authors with the unpublished C-values produced by Zonneveld to make a large body of valuable genome size data available to the scientific community.
- **Methods** C-values for angiosperm species, selected primarily for their horticultural interest, were estimated by flow cytometry using the fluorochrome propidium iodide. The data were compiled into a table whose form is similar to previously published lists of DNA amounts by Bennett and colleagues.
- **Key Results and Conclusions** The present work contains C-values for 411 taxa including first values for 308 species not listed previously by Bennett and colleagues. Based on a recent estimate of the global published output of angiosperm DNA C-value data (i.e. 200 first C-value estimates per annum) the present work equals 1.5 years of average global published output; and constitutes over 12 % of the latest 5-year global target set by the Second Plant Genome Size Workshop (see [www.kew.org/cval/workshopreport.html](http://www.kew.org/cval/workshopreport.html)). Hopefully, the present example will encourage others to unveil further valuable data which otherwise may lie forever unpublished and unavailable for comparative analyses.

**Key words:** Genome size, C-value, plant DNA C-values database, Genome Size Initiative (GSI), Plant Genome Size workshop and Discussion Meeting, angiosperm, monocots.

### INTRODUCTION

The DNA amount in the unreplicated gametic nuclear chromosome complement (1C-value) is highly characteristic for taxa and varies over 1000-fold between plant species. Species' DNA amounts [C-value and genome size (1Cx)] are key diversity characters of fundamental significance with many important uses (Bennett and Leitch, 2005a). However, it is often difficult to know if a genome size measurement exists for a taxon, or where to find it, as such values are widely scattered in the literature or unpublished. Consequently, since 1976, lists of DNA amounts in angiosperm species, compiled for reference purposes, have been published (e.g. Bennett and Smith, 1976), and the data have been pooled and released in electronic form since 1997 (e.g. the Angiosperm DNA C-values database). To extend the coverage to include other plant groups, databases for gymnosperms, pteridophytes and bryophytes were added in 2001 to create the Plant DNA C-values database (release 1.0) with C-values for 3864 land plants. In December 2004 the Plant DNA C-values database was further updated (release 3.0) and included, as a novel feature, C-values for 253 algal species. Release 3.0 has DNA amounts for almost 5000 species from over 500 original sources, including first values for 628 angiosperms not previously included (<http://www.kew.org/genomesize/homepage>). These lists and databases have been widely used for comparative studies

(e.g. Knight *et al.*, 2005; Leitch *et al.*, 2005; Price *et al.*, 2005) and are the main source of information on plant genome sizes cited in the literature. Published lists of angiosperm DNA amounts have been cited over 1500 times, whilst the electronic database has received over 60 000 hits since 2001.

Bennett *et al.* (2000) and Bennett and Leitch (2005a) noted that C-values for probably a surprisingly large number of plant species had been estimated but, for various reasons, not published and hence were unavailable. Indeed, this was suspected to apply to hundreds of species overall whose genome sizes together constitute an untapped pool of information of considerable potential value. Scientists have therefore been encouraged to communicate them for inclusion in the Plant DNA C-values database, thus making them accessible for comparative studies. The present work is proof of this hypothesis and provides a model example of collaboration to transfer a large body of previously invisible plant genome size data firmly into the public domain.

Two of the present authors have worked together for the past decade to produce pooled lists of plant DNA C-values for reference purposes in both hard copy (Bennett and Leitch, 1995, 1997, 2005a; Bennett *et al.*, 2000) and electronic versions (<http://www.kew.org/genomesize/homepage>). Meanwhile the present first author has made genome size estimates for angiosperm taxa in several genera, including *Helleborus* (Zonneveld, 2001), *Hosta* (Zonneveld and Van Iren, 2000, 2001), *Galanthus* (Zonneveld *et al.*, 2003)

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and *Agapanthus* (Zonneveld and Duncan, 2003), some of which have subsequently been included in a recent compilation by Bennett and Leitch (2005a). While corresponding with Bennett and Leitch about these data and planned future publications, Zonneveld noted that he had also made C-value estimates for taxa in various genera that seemed most unlikely to be published. It emerged that this sample was substantial and included first estimates for hundreds of miscellaneous species, measured mostly out of curiosity.

Given their potential value, it was decided to combine the taxonomic and databasing experience of the Kew-based authors with information amassed in The Netherlands to produce a further reference list in a form similar to other recent plant C-value reference lists (e.g. Bennett and Leitch, 2005a; Kapraun, 2005). The present work is the product of that collaboration. Analysis of the completed Appendix table shows that it contains C-values for 411 angiosperm taxa, including first values for 308 species not listed in any previous compilation by Bennett and colleagues.

## MATERIALS AND METHODS

### Plant materials

The present work examined angiosperm taxa available as seed or plants growing in The Netherlands selected primarily for their horticultural interest. The Netherlands has a long tradition of growing and breeding many angiosperm taxa for horticulture, consequently such plant materials are readily available for research purposes.

### Estimation of DNA C-values

DNA 2C-values were estimated using flow cytometry with the fluorochrome propidium iodide (PI) as described by Zonneveld and Van Iren (2001). Briefly, somatic nuclei were isolated from leaves by co-chopping them with one of the internal calibration standards (Table 1) in nuclei isolation buffer. After adding 2 mL PI solution (50 mg PI/l in half-strength isolation buffer) the suspension was filtered. Nuclei fluorescence was measured 30 min after the addition of PI using a Partec CA-II flow cytometer. In most cases, several samples, each with at least 5000 nuclei, were measured. The 2C-value of the sample was calculated as follows: (mean of sample peak  $\div$  mean of standard peak)  $\times$  2C DNA amount (pg) of the standard species (see Table 1). Other peaks corresponding to higher C-values (i.e. 4C, 8C and 16C, etc.) were sometimes observed but their DNA amounts were not calculated.

### Internal calibration standards

Five calibration standards, differing in DNA amount, were used (Table 1). In most cases *Agave americana* was chosen, as previous work showed it to be a reliable and reproducible standard, giving clean peaks with low CVs (Zonneveld and Van Iren, 2001). If nuclear DNA content of a test species overlapped with that of *A. americana*, another calibration standard was used whose C-value fell close to that of the unknown. Species with 2C-values below 2.0 pg could usually not be measured with the Partec CA-II

TABLE 1. Species used as calibration standards to estimate nuclear DNA C-values

Species	Assumed 2C DNA amount (pg)	Abbreviation used in column 13 of the Appendix
<i>Agave stricta</i>	7.8	<i>A. stricta</i>
<i>Hordeum vulgare</i> 'Sultan'*	10.0	<i>Hordeum</i>
<i>Agave americana</i>	15.9	<i>A. americana</i>
<i>Agave sisalana</i>	20.2	<i>A. sisalana</i>
<i>Clivia miniata</i>	39.0	<i>Clivia</i>

\*The 2C value of 10 pg for *Hordeum vulgare* 'Sultan' was obtained using *Agave americana* (2C = 15.9 pg) as the calibration standard (see entry number 161q in the Appendix). This value is slightly lower than that given in Bennett and Smith (1991) of 2C = 11.12 pg. In the Appendix *H. vulgare* was used as a calibration standard for only one species *Catharanthus roseus* (2C = 1.4 pg; see entry number 82b in Appendix). If the higher value for *H. vulgare* given by Bennett and Smith (1991) is used then the 2C value of *C. roseus* would be 1.6 pg.

flow cytometer available for use, as the peaks tended to be lost in the debris fluorescence.

## RESULTS AND DISCUSSION

### Comparison of C-value data in the Appendix table with those previously reported

To assess the quality of C-value data in the Appendix two comparisons were made.

(1) C-values for 103 species in the Appendix were compared with 'prime' (see note (a) in 'Notes on compiling the Appendix') C-values for the same species listed in the Plant DNA C-values database (Bennett and Leitch, 2004). Figure 1A shows that generally the two data sets were in good agreement ( $R^2 = 0.9068$ ). However, there were 18 species where previously published 'prime' C-values differed by >30% from those given in the Appendix. These species are represented by open circles in Fig. 1A. The cause(s) of the discrepancies was not clear but possibilities include taxonomic errors or genuine intraspecific variation. For six of the species the different C-values reported were multiples of previous estimates, suggesting that polyploidy may be responsible. Nevertheless, as no chromosome counts were made for any species in the Appendix (except *Hydrangea macrophylla*), the role of polyploidy is unconfirmed.

(2) A comparison was made between the C-values for seven species in the Appendix and the C-values for these calibration standards given in Bennett and Smith (1991). These two datasets showed very close agreement (Fig. 1B) ( $R^2 = 0.9965$ ). Overall, it was concluded that the Appendix C-value data are of high quality.

### Representation of C-value data in Appendix

The present Appendix gives C-values for 411 species, of which 308 (75%) are for species not included in any previous compilation by Bennett and colleagues (Bennett and Smith, 1976, 1991; Bennett *et al.*, 1982, 2000; Bennett and Leitch, 1995, 1997, 2005a) or listed in the Plant DNA C-values database (release 3.0, December 2004). Bennett

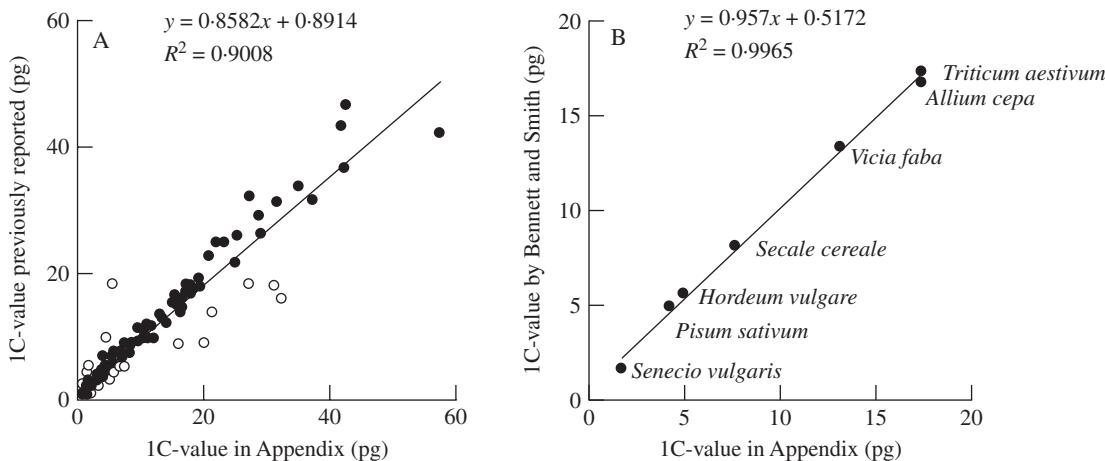


FIG. 1. Comparisons between C-values for species listed in the Appendix and 'prime' C-values for the same species listed in the Plant DNA C-values database (release 3.0, December 2004). (A) Comparison for all 103 species. Open circles correspond to the 18 species whose C-values in the Appendix differ by >30 % from the 'prime' C-values in the database. (B) Comparison between C-values for seven species listed in the Appendix and the accepted C-values for these calibration standards given in Bennett and Smith (1991).

and Leitch (2005a) analysed the global output of DNA C-values for angiosperms during the past half century. They concluded that the 1997 Angiosperm Genome Size Workshop had stimulated a large increase from an average of about 100 per annum in the early 1990s to almost 200 per annum for 1998–2002. The total number of first C-values for species in the present work therefore equals 1.5 years of average global published output at the record levels achieved in recent years. By any measure, it is a significant contribution to knowledge of this important character. Indeed the present data sample (all from one source) increases the total sample of angiosperm species with genome size estimates by about 7.4 %. Moreover, it constitutes over 12 % of the global target set by the Second Plant Genome Size Workshop (namely to estimate first DNA C-values for about 2500 angiosperm species within a quinquennium; see <http://www.rbgkew.org.uk/cval/workshopreport.html>). Clearly, one worker can still make a significant contribution to the global pool of information on genome sizes. Failing to make such information visible could seriously impair the scope of the available database and limit the scope of comparative studies.

Table 2 shows how many of the C-values in the Appendix are first values at the species, generic and family level for the three major angiosperm groups (i.e. basal angiosperms, monocots and eudicots). Although monocots constitute only approx. 20 % of all angiosperm species, most of the new C-values in the Appendix are for monocots (i.e. 64 and 65 % of first C-values are for monocot species and genera, respectively).

Nevertheless, while the present data make a significant contribution to knowledge of C-values at the species level, there has been no significant improvement in representation at the family level. The 1997 Angiosperm Genome Size Workshop recommended a goal of complete familial representation by 2002, as a first C-value was available for only about 30 % of families. Bennett *et al.* (2000) noted that in a sixth supplementary list of C-values for 691 species only 12 were also first estimates for families. Later they

TABLE 2. Representation of C-value data in the Appendix at various taxonomic levels

	No. listed in Appendix table	No. of first C-values
<b>Species</b>	<b>411</b>	<b>308</b>
Basal angiosperm	8	5
Monocots	253	196
Eudicots	150	107
<b>Genera</b>	<b>187</b>	<b>85</b>
Basal angiosperm	6	2
Monocots	117	56
Eudicots	64	27
<b>Family</b>	<b>67</b>	<b>1</b>
Basal angiosperm	5	0
Monocots	21	0
Eudicots	41	1

concluded that significant progress to improve familial representation of angiosperm families was unlikely without careful targeting and the present data for a large sample of untargeted taxa confirm this expectation. Thus, while the Appendix includes 308 first C-values for species, only one of these is also the first value for a family (i.e. Tamaricaceae).

Also as expected, given the lack of specific targeting, the present sample does not make major contributions to filling gaps for any other groups identified as significantly under-represented in the database (e.g. for taxa from bog, fen, tundra, alpine and desert environments, or for halophytic, insectivorous, parasitic, saprophytic and endophytic species; Bennett and Leitch, 2005a). Nevertheless, the present sample does include first values for a few taxa of such interest including two parasitic species *Orobanche hederae* and *Rhinanthus glaberrimus* (both in Orobanchaceae) with 1C values of 2.65 and 3.05 pg, respectively. The table also includes two desert species *Opuntia microdasys* (1C = 2.24 pg) and *Rebutia albiflora* (1C = 1.91 pg), both in the Cactaceae, and a number of succulents from the

**TABLE 3.** The minimum, maximum, mean, median, mode, and range of 1C DNA values for 411 species in the Appendix compared with the corresponding statistics for 4119 species in the Plant DNA C-values database (release 3.0, December 2004)

	Appendix	Plant DNA C-values database (release 3.0, December 2004)
Minimum 1C-value (pg)	0.6	0.1
Maximum 1C-value (pg)	95.0	127.4
Mean 1C-value (pg)	11.7	6.1
Median 1C-value (pg)	6.6	2.7
Mode 1C-value (pg)	5.0	0.6
Range (max/min)	94.4	1274.0

families Asparagaceae (*Agave*, *Ledebouria*), Bromeliaceae (*Tillandsia*), Crassulaceae (*Aeonium*, *Graptopetalum*, *Sedum*), Apocynaceae (*Ceropegia*, *Hoodia*, *Hoya*, *Catharanthus*, *Stapelia*), Xanthorrhoeaceae (*Aloe*) and Asteraceae (*Senecio*) in which the C-values ranged from 1.11 to 16.85 pg.

#### The range of C-values in the Appendix compared with existing data

Table 3 compares the minimum, maximum, mean, median, mode and range of DNA amounts for all 411 species listed in the Appendix, with the 4119 species listed in the Plant DNA C-values database (release 3.0, December 2004).

The range of C-values in the present sample ( $1C = 0.6\text{--}95.5\text{ pg}$ ) falls within that reported for the Plant DNA C-values database ( $1C = 0.1\text{--}127.4\text{ pg}$ ), although it is somewhat enriched in species with larger genomes, leading to higher mean and modal values compared with the larger sample in the database (Table 3); thus the minimum C-value in the Appendix is the same as the modal value for species in the database. This probably reflects the greater proportion of monocots in the present sample with large genomes. Indeed the 43 species (approx. 10%) with the largest genomes in the Appendix are all monocots from the orders Asparagales, Commelinaceae or Liliales; these groups have previously been shown to contain species with the largest recorded angiosperm genomes (Leitch *et al.*, 1998; Soltis *et al.*, 2003). (NB The presence of only eight species with  $2C$ -values  $<2.0\text{ pg}$  is, in large part, due to technical difficulties encountered in estimating C-values in species with smaller genomes, as noted in Materials and methods.)

Analysis at the family level showed that in half of the 66 families already represented in the Plant DNA C-values database, the new data did not increase the range of C-values previously reported for a family. In only eight families was the minimum C-value decreased as a result of new data, whereas in 25 families the maximum C-value increased, sometimes greatly. For example, in Garryaceae and Escalloniaceae, which both previously had a C-value for just one species, the addition of an estimate for one new species increased the range of C-values for each family over 8- and 15-fold, respectively.

#### Future plans

Participants at the 2003 Plant Genome Size Workshop formalized their international collaboration as the Genome Size Initiative (GSI; Bennett and Leitch, 2005b), whose aims are to improve the availability, quality and understanding of genome size data, and to provide a focus for monitoring progress and facilitating discussions in a holistic genomic context. Further, in a keynote address opening the 2003 Plant Genome Size Discussion Meeting, Bennett reiterated the potential value of unpublished genome size data, and the need to make it visible as follows: ‘There are probably over 1000 prime C-value estimates for plant species, equal to 4 years of known global output, unlocated in publications or unpublished. Such genome size data are almost valueless if potential users cannot easily access and assess them. It is impossible to over-emphasise the importance of publishing C-value data or linking them to the database by informing the co-ordinators of its existence, so that others can assess its quality and use it’. The present work supports this sentiment and the aims of GSI. Hopefully, it will encourage others to emulate this example and unveil further useful data which otherwise may lie forever unpublished.

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## APPENDIX

### Notes on compiling the Appendix

C-value data were compiled into the Appendix table whose form is similar to that of previous lists of DNA amounts by Bennett and colleagues (i.e. Bennett and Smith, 1976, 1991; Bennett *et al.*, 1982; Bennett and Leitch, 1995, 1997; Bennett *et al.*, 2000). Additional information on compiling the Appendix is given below.

(a) *Assignment of entry numbers and 'prime' entries.* The numbering of the Appendix table generally follows that for previous lists of DNA amounts (see above). Taxa are arranged alphabetically by genus and species with a new number usually being assigned for each new species.

For 42 species in the Appendix more than one estimate was made for the same species (e.g. for different cultivars, varieties, etc.). In most cases, the C-values were very similar and the different accessions were assigned the same entry number but were distinguished by letters, sorted here by increasing DNA amounts. For example, C-values are reported for two cultivars of *Crocus chrysanthus*, a species not included previously in any of the lists mentioned above. The smaller of the two values, for 'Dorothy', is listed as entry number 113a, while the larger, for 'Blue Pearl', is 113b. Where several estimates are available for the same species, the 'a' value is automatically chosen in any arithmetical or statistical calculations. In this context, a single estimate for a species and 'a' values are referred to as 'prime entries'.

For 18 species the C-values between accessions differed by >10 %. Taxonomic heterogeneity, polyploidy and/or intraspecific variation are the most likely explanations (especially where a range of chromosome numbers has previously been reported for the species), yet until chromosome counts are made, the cause(s) of the differences remains unknown and the different accessions of a species were usually assigned the same entry number. In six *Senecio* species (*S. herreianus*, *S. kleiniiformis*, *S. mwerensis*, *S. nyikensis*,

*S. pendulus* and *S. radicans*), however, the different C-values so strongly suggested the presence of polyploidy that they were given separate entry numbers in accordance with previous practice (e.g. Bennett and Leitch, 2005a).

For 103 species, where one or more C-value had previously been listed by Bennett and colleagues, the estimate in the Appendix was given a number and the next available letter in the alphabet. For example, three previous C-values have been reported for *Allium ampeloprasum*, thus the entry for this species in the Appendix was assigned the letter 'd'.

(b) *Taxonomic authorities.* Taxonomic authorities of the species studied were taken from the International Plant Names Index (IPNI) (<http://www.ipni.org/index.html>). A superscript 'b' following a species name indicates that the taxonomic authority was unknown or unclear (i.e. more than one entry in IPNI).

(c) *Family and higher order group.* The family, order and higher group given for each species in Appendix columns 3, 4 and 5, respectively, follows the Angiosperm Phylogeny Group (APG II, 2003). The following abbreviations were used: BA = basal angiosperm; M = monocot; E = eudicot.

(d) *Chromosome number, ploidy and voucher information.* The sentiment of the Convention on Biological Diversity (United Nations Environment Programme, 1992), which noted the need to make biodiversity data available despite imperfections, merits support. Thus, while the species listed in the Appendix generally lack a voucher and information on chromosome number and ploidy level, they can make a valuable contribution to knowledge of plant C-values.

Chromosome numbers and/or ploidy information were entered for 90 taxa where previous C-value reports also included this information and the C-values agreed closely with those reported here. For example, a C-value of 2.9 pg for *Achillea filipendulina* was previously estimated by Dabrowska (1992), who also reported that the accession studied had  $2n = 2x = 18$ . As the 1C-value of 2.88 pg for the same species in the Appendix was very similar to that of Dabrowska (1992), the chromosome number and ploidy data were also entered.

(e) *Life cycle types.* Information on the type of life cycle for species in the Appendix was either taken from the literature or internet. The following abbreviations were used: A = annual; B = biennial; AP = annual–perennial; P = perennial. A superscript 'e' indicates that life cycle information was either unknown or unclear to the present authors.

(f) *DNA amounts and conversion factor.* 1C and 4C values listed in the Appendix were determined by appropriate calculation of the 2C-value. For 1C-values in megabase pairs (Mbp) the conversion factor of 1 pg = 980 Mb (Cavalier-Smith, 1985; Bennett *et al.*, 2000) was used.

(g) *Standard species.* The abbreviation used to indicate which of the five calibration standards was used to estimate the 2C-value for each species in the Appendix is given in Table 1.

(h) *Chromosome numbers in Hyacinthus.* Brandham and West (1993) reported chromosome numbers in

APPENDIX. Chromosome number, ploidy level, life-cycle type, and nuclear DNA content in 411 angiosperm species (the superscript letters refer to notes preceding this table)

Entry number <sup>a</sup>	Species <sup>b</sup>	Family <sup>c</sup>	Order <sup>c</sup>	Higher group <sup>c</sup>	2n <sup>d</sup>	Ploidy level (x) <sup>d</sup>	Life cycle type <sup>e</sup>	DNA amount <sup>f</sup>				
								1C (Mbp)	IC (pg)	2C (pg)	4C (pg)	Standard species <sup>g</sup>
1b	<i>Achillea filipendulina</i> Lam.	Asteraceae	Asterales	E	18	2	P	2.818	2.9	5.8	11.5	<i>A. americana</i>
2d	<i>Achillea millefolium</i> L.	Asteraceae	Asterales	E	54	6	P	7.914	8.1	16.2	32.3	<i>A. americana</i>
3a	<i>Achillea montana</i> Schleich. ex DC	Asteraceae	Asterales	E	— <sup>d</sup>	— <sup>d</sup>	P	2.058	2.1	4.2	8.4	<i>A. americana</i>
4a	<i>Achillea vulgaris</i> <sup>b</sup>	Asteraceae	Asterales	E	— <sup>d</sup>	— <sup>d</sup>	P	2.205	2.3	4.5	9.0	<i>A. americana</i>
5b	<i>Adansonia digitata</i> L.	Malvaceae	Malvales	E	— <sup>d</sup>	— <sup>d</sup>	P	1.436	1.5	2.9	5.9	<i>A. americana</i>
6a	<i>Adonis annua</i> L.	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	A	16.513	16.9	33.7	67.4	<i>A. americana</i>
7a	<i>Adonis vernalis</i> L.	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	13.867	14.2	28.3	56.6	<i>A. americana</i>
8a	<i>Aelropus littoralis</i> Parl.	Poaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	AP	8.232	8.4	16.8	33.6	<i>Clivia</i>
9a	<i>Aeonium nobile</i> (Praeger) Praeger	Crasulaceae	Crasulales	E	— <sup>d</sup>	— <sup>d</sup>	P	4.165	4.3	8.5	17.0	<i>A. americana</i>
10a	<i>Aeonium simsii</i> (Sweet) Stearn	Crasulaceae	Crasulales	E	— <sup>d</sup>	— <sup>d</sup>	P	2.122	2.2	4.3	8.7	<i>A. americana</i>
11a	<i>Agave hartmannii</i> S.Watson	Asparagaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	3.773	3.9	7.7	15.4	<i>A. americana</i>
12a	<i>Agave portoricensis</i> Trel. ex A.Berger	Asparagaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	3.724	3.8	7.6	15.2	<i>A. americana</i>
13b	<i>Alisma lanceolatum</i> With.	Alismataceae	Alismatales	M	26	— <sup>d</sup>	P	5.586	5.7	11.4	22.8	<i>A. americana</i>
14d	<i>Alium aflatunense</i> B.Fedtsch. cv. Purple Sensation	Alliaceae	Alliaceae	M	16	2	P	21.658	22.1	44.2	88.4	<i>A. americana</i>
15d	<i>Alium ampeloprasum</i> <sup>b</sup>	Alliaceae	Alliaceae	M	32	4	P	28.420	29.0	58.0	116.0	<i>Clivia</i>
16l	<i>Alium cepa</i> var. <i>ascalonium</i> L.	Alliaceae	Alliaceae	M	16	2	P	17.052	17.4	34.8	69.6	<i>A. americana</i>
17e	<i>Alium karatavense</i> Regel	Alliaceae	Alliaceae	M	18	2	P	20.433	20.9	41.7	83.4	<i>A. americana</i>
18e	<i>Alium mol</i> <sup>b</sup>	Alliaceae	Alliaceae	M	14	2	P	22.834	23.3	46.6	93.2	<i>A. americana</i>
19a	<i>Alium narcissiflorum</i> Vill.	Alliaceae	Alliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	21.168	21.6	43.2	86.4	<i>A. americana</i>
20g	<i>Alium porrum</i> <sup>b</sup>	Alliaceae	Alliaceae	M	32	4	P	28.371	29.0	58.0	116.0	<i>Clivia</i>
21e	<i>Alium sativum</i> L.	Alliaceae	Alliaceae	M	16	2	P	17.101	17.5	34.9	69.8	<i>A. americana</i>
22b	<i>Alium schoenoprasum</i> <sup>b</sup>	Alliaceae	Alliaceae	M	32	4	P	16.023	16.4	32.7	65.4	<i>A. americana</i>
23c	<i>Alium schubertii</i> Zucc.	Alliaceae	Alliaceae	M	16	— <sup>d</sup>	P	31.801	32.5	64.9	129.8	<i>A. americana</i>
24f	<i>Alium sphaerocephalon</i> L.	Alliaceae	Alliaceae	M	16	2	P	13.867	14.2	28.3	56.6	<i>A. americana</i>
25e	<i>Alium ursinum</i> L.	Alliaceae	Alliaceae	M	14	2	P	31.213	31.9	63.7	127.4	<i>A. americana</i>
26b	<i>Alium vineale</i> <sup>b</sup>	Alliaceae	Alliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	30.625	31.3	62.5	125.0	<i>A. americana</i>
27a	<i>Alocasia longiloba</i> Miq.	Araceae	Araceae	M	— <sup>d</sup>	— <sup>d</sup>	P	9.163	9.4	18.7	37.4	<i>A. stricta</i>
28a	<i>Alocasia lowii</i> var. <i>grandis</i> Hook	Araceae	Araceae	M	— <sup>d</sup>	— <sup>d</sup>	P	8.673	8.9	17.7	35.4	<i>A. stricta</i>
28b	<i>Alocasia lowii</i> var. <i>veitchii</i> Hook	Araceae	Araceae	M	— <sup>d</sup>	— <sup>d</sup>	P	10.927	11.2	22.3	44.6	<i>A. stricta</i>
29a	<i>Alocasia regnula</i> A.Hay	Araceae	Araceae	M	— <sup>d</sup>	— <sup>d</sup>	P	4.851	5.0	9.9	19.8	<i>A. stricta</i>
30a	<i>Alocasia sanderaiana</i> Hort. ex Bull	Araceae	Araceae	M	— <sup>d</sup>	— <sup>d</sup>	P	4.949	5.1	10.1	20.2	<i>A. stricta</i>
31a	<i>Alocasia sp.</i> <sup>b</sup>	Araceae	Araceae	M	— <sup>d</sup>	— <sup>d</sup>	P	9.947	10.2	20.3	40.6	<i>A. stricta</i>
32a	<i>Alocasia × amazonica</i> <sup>b</sup>	Araceae	Xanthorrhoeaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	4.900	5.0	10.0	20.0	<i>A. stricta</i>
33a	<i>Alocasia zebra</i> K.Koch var. <i>tigrina</i> cv. <i>Superba</i>	Rosaceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	5.498	5.6	11.2	22.4	<i>A. stricta</i>
33b	<i>Alocasia zebra</i> K.Koch & Veitch var. <i>reticulata</i>	Rosaceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	5.684	5.8	11.6	23.2	<i>A. stricta</i>
34a	<i>Aloe claviflora</i> Burch. & Reynolds	Poaceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	16.513	16.9	33.7	67.4	<i>A. stricta</i>
35a	<i>Aloe ecklonis</i> Salm-Dyck	Xanthorrhoeaceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	13.524	13.8	27.6	55.2	<i>A. stricta</i>
36b	<i>Aloe gariepensis</i> Pillans	Xanthorrhoeaceae	Alismatales	M	14	2	P	16.121	16.5	32.9	65.8	<i>A. stricta</i>
37a	<i>Aloe micracantha</i> Haw.	Rosaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	13.916	14.2	28.4	56.8	<i>A. stricta</i>
38a	<i>Amelanchier canadensis</i> Medik.	Poaceae	Rosales	E	— <sup>d</sup>	— <sup>d</sup>	P	1.127	1.2	2.3	4.6	<i>A. stricta</i>
39b	<i>Amorphophallus levallei</i> F.Malaisse	Ranunculaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	5.635	5.8	11.5	23.0	<i>A. stricta</i>
40a	<i>Anemone blanda</i> Schott & Kotchy	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	13.622	13.9	27.8	55.6	<i>A. stricta</i>
41c	<i>Anemone blanda</i> Schott & Kotchy	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	15.092	15.4	30.8	61.6	<i>A. stricta</i>
42b	<i>Anemone coronaria</i> L.	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	15.729	16.1	32.1	64.2	<i>A. stricta</i>
43c	<i>Anemone nemorosa</i> L.	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	19.061	19.5	38.9	77.8	<i>A. stricta</i>
44b	<i>Anemone pavonina</i> Lam.	Ranunculaceae	Ranunculales	E	16	2	P	13.284	13.6	27.1	54.2	<i>A. stricta</i>



APPENDIX. (Continued, the superscript letters refer to notes preceding this table)

Entry number <sup>a</sup>	Species <sup>b</sup>	Family <sup>c</sup>	Order <sup>c</sup>	Higher group <sup>c</sup>	Ploidy level (x) <sup>d</sup>	Life cycle type <sup>e</sup>	DNA amount <sup>f</sup>				Standard species <sup>g</sup>
							2n <sup>d</sup>	1C (Mbp)	IC (pg)	2C (pg)	
92c	<i>Clivia miniata</i> Regel	Alliaceae	Asparagales	M	22	2	P	19,110	19.5	39.0	<i>A. americana</i>
93c	<i>Cocos nucifera</i> L.	Arecaceae	Arecales	M	32	2	P	2,744	2.8	5.6	<i>A. americana</i>
94a	<i>Colchicum autumnale</i> L.	Colchicaceae	Liliales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,283	3.4	6.7	<i>A. americana</i>
95b	<i>Commelinia dianthifolia</i> Delile	Commelinaceae	Commelinales	M	90	6	AP	7,546	7.7	15.4	<i>A. stricta</i>
96a	<i>Cornus mas</i> L.	Cornaceae	Cornales	E	— <sup>d</sup>	— <sup>d</sup>	P	3,332	3.4	6.8	<i>A. americana</i>
97a	<i>Contarinia argentea</i> (Nees) Staff	Poaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,675	3.8	7.5	<i>A. americana</i>
98a	<i>Cotinus coggygria</i> Scop.	Anacardiaceae	Sapindales	E	— <sup>d</sup>	— <sup>d</sup>	P	9,163	9.4	18.7	<i>A. americana</i>
99a	<i>Craterostigma plantagineum</i> Hochst.	unplaced	Lamiaceae	Lamiaceae	— <sup>d</sup>	— <sup>d</sup>	P	1,029	1.1	2.1	<i>A. stricta</i>
100a	<i>Crinum asiaticum</i> var. <i>japonicum</i> Baker	Alliaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	24,745	25.3	50.5	<i>A. americana</i>
100b	<i>Crinum asiaticum</i> var. <i>sinicum</i> Baker	Alliaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	25,284	25.8	51.6	<i>A. americana</i>
101a	<i>Crinum bulbispermum</i> Milne-Redh. & Schweickerdt	Alliaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	19,698	20.1	40.2	<i>A. americana</i>
102a	<i>Crinum moorei</i> Hook.f.	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	20,335	20.8	41.5	<i>A. americana</i>
103a	<i>Crinum natans</i> var. <i>calamistratum</i> Baker	Alliaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	20,531	21.0	41.9	<i>A. americana</i>
104a	<i>Crocus aureus</i> (Hook.) Planch.	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	985	1.0	2.0	<i>A. americana</i>
105a	<i>Crocossa fucata</i> (Herb.) M.P.de Vos	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	936	1.0	1.9	<i>A. americana</i>
105b	<i>Crocossa fucata</i> (Herb.) M.P.de Vos (pleated form)	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	1,372	1.4	2.8	<i>A. americana</i>
106a	<i>Crocossa masonorum</i> (L.Bolus) N.E.Br.	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	907	0.9	1.9	<i>A. americana</i>
107a	<i>Crocossa paniculata</i> (Klatt) Goldblatt	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	975	1.0	2.0	<i>A. americana</i>
108a	<i>Crocossa pottsii</i> (Baker) N.E.Br.	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	877	0.9	1.8	<i>A. americana</i>
109a	<i>Crocossa × crocosmiflora</i> <sup>b</sup>	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	1,098	1.1	2.2	<i>A. americana</i>
110a	<i>Crocossa latifolia</i> <sup>b</sup>	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	1,127	1.2	2.3	<i>A. americana</i>
111a	<i>Crocossa paniculata</i> <sup>b</sup>	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	872	0.9	1.8	<i>A. americana</i>
112a	<i>Crocus angustifolius</i> × <i>flavus</i> (large yellow)	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	6,419	6.6	13.1	<i>A. americana</i>
113a	<i>Crocus chrysanthus</i> Herb. cv. Dorothy Pearl	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,822	3.9	7.8	<i>A. americana</i>
113b	<i>Crocus vernus</i> <sup>b</sup> (white form)	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,969	4.1	8.1	<i>A. americana</i>
114b	<i>Cryptocoryne crispatula</i> Engl.	Araceae	Alismatales	M	8	2	P	10,829	11.1	22.1	<i>A. americana</i>
115a	<i>Cyanotis somaliensis</i> C.B.Clarke	Commelinaceae	Commelinales	M	— <sup>d</sup>	— <sup>d</sup>	P	872	0.9	1.8	<i>A. americana</i>
116a	<i>Cyclamen hederifolium</i> <sup>b</sup>	Myrsinaceae	Ericales	E	— <sup>d</sup>	— <sup>d</sup>	P	5,096	5.2	10.4	<i>A. americana</i>
117b	<i>Cyperus eragrostis</i> (Jacq.) Traub	Alliaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	5,047	5.2	10.3	<i>A. americana</i>
118a	<i>Cyperus montanus</i> R.A.Dyer cv. Firebird	Alliaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	14,455	14.8	29.5	<i>A. americana</i>
119a	<i>Dactylis glomerata</i> L.	Poaceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	13,573	13.9	27.7	<i>A. americana</i>
120g	<i>Dichelostemma ida-maia</i> Greene	Asparagaceae	Asparagales	M	28	4	P	4,312	4.4	8.8	<i>A. americana</i>
121a	<i>Dioscorea elephantipes</i> Engl.	Dioscoreaceae	Dioscoreales	M	— <sup>d</sup>	— <sup>d</sup>	P	17,787	18.2	36.3	<i>A. americana</i>
122a	<i>Doryanthes palmeri</i> <sup>b</sup>	Doryanthaceae	Asparagales	M	48	— <sup>d</sup>	P	6,615	6.8	13.5	<i>A. americana</i>
123b	<i>Dracunculus canariensis</i> Kunth	Araceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,283	3.4	6.7	<i>A. americana</i>
124a	<i>Dracunculus vulgaris</i> Schott	Asparagaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,812	3.9	7.8	<i>A. americana</i>
125b	<i>Drimiopsis maculata</i> Lindl. & Paxt.	Ranunculaceae	Ranunculales	E	32	— <sup>d</sup>	P	6,076	6.2	12.4	<i>A. stricta</i>
126a	<i>Eichornia crassipes</i> (Mart.) Solms	Pontederiaceae	Commelinales	M	32	4	P	3,675	3.8	7.5	<i>A. americana</i>
127b	<i>Elymus arenarius</i> <sup>b</sup>	Poaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	P	1,529	1.6	3.1	<i>A. americana</i>
128a	<i>Elymus junceus</i> Fisch. (= <i>Elytrigia juncea</i> )	Poaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	P	20,825	21.3	42.5	<i>A. americana</i>
129a	<i>Erithronium</i> hybrid cv. Nana	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	12,985	13.3	26.5	<i>A. americana</i>
130a	<i>Erithronium</i> hybrid cv. Pagoda	Ranunculaceae	Ranunculales	E	16	2	P	8,722	8.9	17.8	<i>A. stricta</i>
131b	<i>Erithronium californicum</i> <sup>b</sup> cv. White Beauty	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	11,711	12.0	23.9	<i>Clivia</i>
132a	<i>Erithronium</i> hybrid cv. Firebird	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	— <sup>d</sup>	P	8,036	8.2	16.4	<i>A. americana</i>
133a	<i>Erythronium</i> hybrid cv. Nana	Liliaceae	Liliales	M	— <sup>d</sup>	— <sup>d</sup>	P	36,015	36.8	73.5	<i>A. americana</i>
134a	<i>Erythronium</i> hybrid cv. Pagoda	Liliaceae	Liliales	M	— <sup>d</sup>	— <sup>d</sup>	P	34,986	35.7	71.4	<i>A. americana</i>
135a	<i>Erythronium</i> hybrid cv. White Beauty	Liliaceae	Liliales	M	— <sup>d</sup>	— <sup>d</sup>	P	32,977	33.7	67.3	<i>A. americana</i>

136a	<i>Erythronium dens-canis</i> <sup>b</sup>	29.302	29.9	59.8	119.6	<i>A. americana</i>
137a	<i>Erythronium japonicum</i> <sup>b</sup>	31.115	31.8	63.5	127.0	<i>A. americana</i>
138a	<i>Escallonia langevinis</i> Vilm. & Bois	6.027	6.2	12.3	24.6	<i>A. americana</i>
139a	<i>Eucharis grandiflora</i> Planch. & Linden	15.974	16.3	32.6	65.2	<i>A. americana</i>
140b	<i>Festuca ovina</i> L. cv. Glaica	7.007	7.2	14.3	28.6	<i>A. sisalana</i>
141a	<i>Furcraea sellowii</i> K.Koch (yellow edge)	3.724	3.8	7.6	15.2	<i>A. americana</i>
142a	<i>Graptopterygium bellum</i> Moran & J.Meyran	4.116	4.2	8.4	16.8	<i>Clivia</i>
143a	<i>Graptopterygium macdougallii</i> Alexander	3.283	3.4	6.7	13.4	<i>A. americana</i>
144b	<i>Gunnera manicata</i> Linden ex André	5.782	5.9	11.8	23.6	<i>A. americana</i>
145a	<i>Haberlea rhodopensis</i> Frit.	1.372	1.4	2.8	5.6	<i>A. americana</i>
146a	<i>Hedera algeriensis</i> <sup>b</sup> cv. Gloire de Marengo	2.842	2.9	5.8	11.6	<i>A. americana</i>
147c	<i>Hedera canariensis</i> <sup>b</sup>	1.470	1.5	3.0	6.0	<i>A. americana</i>
148a	<i>Hedera caucasicana</i> Pojark. cv. Tanja	1.666	1.7	3.4	6.8	<i>A. americana</i>
149c	<i>Hedera colchica</i> K.Koch cv. Sulphur Heart	5.243	5.4	10.7	21.4	<i>A. americana</i>
149d	<i>Hedera colchica</i> K.Koch (yellow edge)	5.243	5.4	10.7	21.4	<i>A. americana</i>
150i	<i>Hedera helix</i> L. cv. Erecta	1.470	1.5	3.0	6.0	<i>A. americana</i>
150j	<i>Hedera helix</i> L. cv. Gold Hertz.	1.470	1.5	3.0	6.0	<i>A. americana</i>
151a	<i>Hedera hibernica</i> Hort.	2.940	3.0	6.0	12.0	<i>A. americana</i>
152a	<i>Heloniopsis orientalis</i> <sup>b</sup>	2.622	2.7	5.4	10.7	<i>A. americana</i>
153a	<i>Hermodactylus tuberosa</i> Mill.	13.524	13.8	27.6	55.2	<i>A. americana</i>
154a	<i>Hesperiadoe parviflora</i> (Torr.) J.M.Coult.	3.920	4.0	8.0	16.0	<i>A. americana</i>
155a	<i>Hippocratea cybisteri</i> Benth. & Hook.f.	16.954	17.3	34.6	69.2	<i>A. americana</i>
156a	<i>Hippocratea elwesii</i> C.H.Wright	10.388	10.6	21.2	42.4	<i>A. americana</i>
157a	<i>Hippocratea papilio</i> (Ravennai) J.Van Scheepen cv. Butterfly	14.259	14.6	29.1	58.2	<i>A. americana</i>
158a	<i>Hippocratea reticulatum</i> var. <i>striatifolium</i> Herb.	14.063	14.4	28.7	57.4	<i>A. americana</i>
159a	<i>Hoodia gordoni</i> (Masson) Sweet ex Decne.	2.401	2.5	4.9	9.8	<i>A. americana</i>
160b	<i>Hordeum murinum</i> L.	9.604	9.8	19.6	39.2	<i>A. americana</i>
161q	<i>Hordeum vulgare</i> L. cv. Sultan	4.900	5.0	10.0	20.0	<i>A. americana</i>
162a	<i>Hovea forsteriana</i> Becc.	3.357	3.4	6.9	13.7	<i>A. americana</i>
163a	<i>Hoya carnosa</i> (L.) R.Br.	2.107	2.2	4.3	8.6	<i>A. americana</i>
164a	<i>Humulus japonicus</i> Siebold & Zucc.	1.666	1.7	3.4	6.8	<i>A. americana</i>
165a	<i>Humulus lupulus</i> <sup>b</sup> var. <i>cordifolia</i>	2.842	2.9	5.8	11.6	<i>A. americana</i>
165b	<i>Humulus lupulus</i> <sup>b</sup> cv. Brambling Cross	2.989	3.1	6.1	12.2	<i>A. americana</i>
166d	<i>Hyacinthus orientalis</i> L. cv. White Pearl	26.705	27.3	54.5	109.0	<i>A. americana</i>
166e	<i>Hyacinthus orientalis</i> L. cv. Pink Pearl	27.832	28.4	56.8	113.6	<i>A. americana</i>
167c	<i>Hyacinthus orientalis</i> L. cv. Anna Marie	41.552	42.4	84.8	169.6	<i>Clivia</i>
167d	<i>Hyacinthus orientalis</i> L. cv. Delft Blue	42.532	43.4	86.8	173.6	<i>Clivia</i>
167e	<i>Hyacinthus orientalis</i> L. cv. L'Innocence	50.568	51.6	103.2	206.4	<i>Clivia</i>
168c	<i>Hydrangea anomala</i> ssp. <i>petiolaris</i> D.Don cv. Cordifolia	1.470	1.5	3.0	6.0	<i>A. americana</i>
168d	<i>Hydrangea anomala</i> ssp. <i>petiolaris</i> D.Don	1.499	1.5	3.1	6.1	<i>A. americana</i>
169b	<i>Hydrangea arborea</i> L.	1.294	1.3	2.6	5.3	<i>A. americana</i>
170e	<i>Hydrangea aspera</i> ssp. <i>sargentiana</i> Buch.-Ham. ex D.Don	1.646	1.7	3.4	6.7	<i>A. americana</i>
170f	<i>Hydrangea aspera</i> ssp. <i>robusta</i> Buch.-Ham. ex D.Don	1.715	1.8	3.5	7.0	<i>A. americana</i>
170g	<i>Hydrangea aspera</i> ssp. <i>strigosa</i> Buch.-Ham. ex D.Don	1.823	1.9	3.7	7.4	<i>A. americana</i>
170h	<i>Hydrangea aspera</i> Buch.-Ham. ex D.Don cv. Villosa	2.073	2.1	4.2	8.5	<i>A. americana</i>
170i	<i>Hydrangea heteromalla</i> D.Don cv. Taiwan	2.538	2.6	5.2	10.4	<i>A. americana</i>
171b	<i>Hydrangea heteromalla</i> D.Don	1.813	1.9	3.7	7.4	<i>A. americana</i>
171c	Nepal Beauty	3.263	3.3	6.7	13.3	<i>A. americana</i>
172a	<i>Hydrangea hirta</i> Siebold	1.779	1.8	3.6	7.3	<i>A. americana</i>
173a	<i>Hydrangea integrifolia</i> Hayata	1.103	1.1	2.3	4.5	<i>A. americana</i>
174b	<i>Hydrangea involucrata</i> Siebold	2.626	2.7	5.4	10.7	<i>A. americana</i>
175a	<i>Hydrangea macrophylla</i> <sup>b</sup> (diploid)	2.234	2.3	4.6	9.1	<i>A. americana</i>
176a	<i>Hydrangea macrophylla</i> <sup>b</sup> (triploid)	3.263	3.3	6.7	13.3	<i>A. americana</i>

APPENDIX. (Continued, the superscript letters refer to notes preceding this table)

Entry number <sup>a</sup>	Species <sup>b</sup>	Family <sup>c</sup>	Order <sup>e</sup>	Higher group <sup>c</sup>	2n <sup>d</sup>	Ploidy level (x) <sup>d</sup>	Life cycle type <sup>e</sup>	DNA amount <sup>f</sup>				
								IC (Mbp)	IC (pg)	2C (pg)	4C (pg)	Standard species <sup>g</sup>
177b	<i>Hydrangea paniculata</i> <sup>b</sup>	Hydrangeaceae	Cornales	E	36	2	P	3,430	3.5	7.0	14.0	<i>A. americana</i>
178b	<i>Hydrangea quercifolia</i> Bartram (Tennessee clone)	Hydrangeaceae	Cornales	E	36	2	P	1,063	1.1	2.2	4.3	<i>A. americana</i>
179a	<i>Hydrangea scandens</i> var. <i>luukensis</i> <sup>b</sup>	Hydrangeaceae	Cornales	E	36	2	P	1,970	2.0	4.0	8.0	<i>A. americana</i>
179b	<i>Hydrangea scandens</i> <sup>b</sup>	Hydrangeaceae	Cornales	E	36	2	P	2,038	2.1	4.2	8.3	<i>A. americana</i>
179c	<i>Hydrangea scandens?</i> cv. <i>Angustata</i>	Hydrangeaceae	Cornales	E	—d	—d	P	2,332	2.4	4.8	9.5	<i>A. americana</i>
180a	<i>Hydrangea serrata</i> Ser.	Hydrangeaceae	Cornales	E	—d	—d	P	2,102	2.1	4.3	8.6	<i>A. americana</i>
181a	<i>Hydrocharis morsus-ranae</i> L.	Hydrocharitaceae	Alismatales	M	—d	—d	P	2,156	2.2	4.4	8.8	<i>A. americana</i>
182a	<i>Iphion uniflorum</i> (Lindl.) Raf.	Alliaceae	Asparagales	M	—d	—d	P	9,457	9.7	19.3	38.6	<i>A. americana</i>
183a	<i>Iris danfordiae</i> Boiss.	Iridaceae	Asparagales	M	—d	—d	P	15,827	16.2	32.3	64.6	<i>A. americana</i>
184a	<i>Iris germanica</i> <sup>b</sup>	Iridaceae	Asparagales	M	—d	—d	P	12,201	12.5	24.9	49.8	<i>A. americana</i>
185a	<i>Iris lacustris</i> Nutt.	Iridaceae	Asparagales	M	—d	—d	P	4,116	4.2	8.4	16.8	<i>A. americana</i>
186b	<i>Iris pseudacorus</i> L.	Iridaceae	Asparagales	M	c. 34	—d	P	5,488	5.6	11.2	22.4	<i>A. americana</i>
187a	<i>Iris pumila</i> <sup>b</sup>	Iridaceae	Asparagales	M	—d	—d	P	12,936	13.2	26.4	52.8	<i>A. americana</i>
188a	<i>Iris reticulata</i> M.Bieb. cv. Harmony	Iridaceae	Asparagales	M	—d	—d	P	6,909	7.1	14.1	28.2	<i>A. americana</i>
188b	<i>Iris reticulata</i> M.Bieb. cv. Harmony	Iridaceae	Asparagales	M	—d	—d	P	10,045	10.3	20.5	41.0	<i>A. americana</i>
189a	<i>Iris sintenisii</i> Janka	Iridaceae	Asparagales	M	—d	—d	P	3,920	4.0	8.0	16.0	<i>A. americana</i>
190a	<i>Kniphofia hybrida</i> Otto Mann ex Gumbleton cv. Little Maid	Xanthorrhoeaceae	Asparagales	M	—d	—d	P	10,584	10.8	21.6	43.2	<i>A. americana</i>
191a	<i>Lachenalia</i> hybrid cv. Namaqua	Asparagaceae	Asparagales	M	—d	—d	P	3,626	3.7	7.4	14.8	<i>A. americana</i>
191b	<i>Lachenalia</i> hybrid cv. Romaud	Asparagaceae	Asparagales	M	—d	—d	P	3,724	3.8	7.6	15.2	<i>A. americana</i>
192d	<i>Lactuca sativa</i> L. cv. IJssberg	Asteraceae	Asterales	E	18	2	A	2,695	2.8	5.5	11.0	<i>A. americana</i>
193a	<i>Laurus nobilis</i> <sup>b</sup>	Lauraceae	Laurales	BA	—d	—d	P	2,989	3.1	6.1	12.2	<i>A. americana</i>
194a	<i>Layaniella officinalis</i> Chaix	Lamiaceae	Lamiales	E	—d	—d	P	5,537	5.7	11.3	22.6	<i>A. americana</i>
195a	<i>Lebedouria cooperi</i> var. <i>adlamii</i> (Hook.f.) Jessop	Asparagaceae	Asparagales	M	—d	—d	P	5,488	5.6	11.2	22.4	<i>Clivia</i>
196a	<i>Lebedouria socialis</i> (Baker) Jessop cv. Violacea	Asparagaceae	Asparagales	M	—d	—d	P	5,733	5.9	11.7	23.4	<i>Clivia</i>
197a	<i>Lewisia cotyledon</i> Robinson	Portulacaceae	Caryophyllales	E	—d	—d	P	2,499	2.6	5.1	10.2	<i>A. americana</i>
198a	<i>Lewisia nevadensis</i> (A. Gray) B.L.Rob.	Portulacaceae	Caryophyllales	E	—d	—d	P	4,361	4.5	8.9	17.8	<i>A. americana</i>
199a	<i>Lewisia pygmaea</i> (A. Gray) B.L.Rob.	Portulacaceae	Caryophyllales	E	—d	—d	P	4,655	4.8	9.5	19.0	<i>A. americana</i>
200a	<i>Lilium amabile</i> Pall.	Liliaceae	Liliales	M	—d	—d	P	13,426	13.7	27.4	54.8	<i>A. americana</i>
201a	<i>Lilium canadense</i> <sup>b</sup>	Liliaceae	Liliales	M	—d	—d	P	46,942	47.9	95.8	191.6	<i>A. americana</i>
202a	<i>Lilium candidum</i> <sup>b</sup>	Liliaceae	Liliales	M	—d	—d	P	43,169	44.1	88.1	176.2	<i>A. americana</i>
203a	<i>Lilium eustomatum</i> (W.W.Sm. & W.E.Evans) Sealy	Liliaceae	Liliales	M	—d	—d	P	37,877	38.7	77.3	154.6	<i>A. americana</i>
204b	<i>Lilium formosanum</i> Wallace	Liliaceae	Liliales	M	24	2	P	41,405	42.3	84.5	169.0	<i>A. americana</i>
205a	<i>Lilium martagon</i> <sup>b</sup>	Liliaceae	Liliales	M	—d	—d	P	45,668	46.6	93.2	186.4	<i>A. americana</i>
206a	<i>Limonium vulgare</i> Mill.	Plumbaginaceae	Caryophyllales	E	—d	—d	P	2,597	2.7	5.3	10.6	<i>A. americana</i>
207b	<i>Liriopis muscari</i> L.H.Bailey.	Asparagaceae	Asparagales	M	108	6	P	10,339	10.6	21.1	42.2	<i>A. americana</i>
208a	<i>Lonicera nitida</i> E.H.Wilson	Caprifoliaceae	Dipsacales	E	—d	—d	P	931	1.0	1.9	3.8	<i>A. americana</i>
209b	<i>Lonicera periclymenum</i> <sup>b</sup>	Caprifoliaceae	Dipsacales	E	—d	—d	P	2,793	2.9	5.7	11.4	<i>A. americana</i>
210a	<i>Brassica</i> spp.	Brassicaceae	Brassicales	E	—d	—d	B	1,808	1.8	3.7	7.4	<i>A. americana</i>
211a	<i>Lycoris aurea</i> Herb.	Aliaceae	Asparagales	M	—d	—d	P	23,961	24.5	48.9	97.8	<i>A. americana</i>
212b	<i>Magnolia kobus</i> var. <i>stellata</i> Maxim.	Magnoliaceae	Magnoliales	BA	—d	—d	P	2,107	2.2	4.3	8.6	<i>A. americana</i>
213a	<i>Magnolia liliiflora</i> Desr.	Magnoliaceae	Magnoliales	BA	—d	—d	P	4,851	5.0	9.9	19.8	<i>A. americana</i>
214a	<i>Maianthemum bifolium</i> [DC.]	Asparagaceae	Asparagales	M	—d	—d	P	14,994	15.3	30.6	61.2	<i>A. americana</i>
215a	<i>Maianthemum canadense</i> Desf.	Asparagaceae	Asparagales	M	—d	—d	P	17,003	17.4	34.7	69.4	<i>A. americana</i>
216a	<i>Maianthemum dilatatum</i> (Wood) A.Nelson & J.F.Macbr.	Asparagaceae	Asparagales	M	—d	—d	P	16,366	16.7	33.4	66.8	<i>A. americana</i>
217a	<i>Maianthemum japonicum</i> (A. Gray) J.V.La Frankie	Asparagaceae	Asparagales	M	—d	—d	P	20,139	20.6	41.1	82.2	<i>A. americana</i>
218a	<i>Maianthemum racemosum</i> Link	Asparagaceae	Asparagales	M	—d	—d	P	16,611	17.0	33.9	67.8	<i>A. americana</i>

219a	<i>Manfreda</i> (= <i>Agave</i> ) <i>maculosa</i> <sup>b</sup>	Asparagaceae	Asparagales	4,900	5.0	10.0	20.0	<i>A. americana</i>	
220a	<i>Manfreda</i> (= <i>Agave</i> ) <i>sileri</i> Verh.-Will.	Asparagaceae	Asparagales	4,753	4.9	9.7	19.4	<i>A. americana</i>	
221a	<i>Manfreda</i> (= <i>Agave</i> ) <i>undulata</i> Rose	Asparagaceae	Asparagales	4,900	5.0	10.0	20.0	<i>A. americana</i>	
222a	<i>Manfreda</i> (= <i>Agave</i> ) <i>variegata</i> Rose	Asparagaceae	Asparagales	4,802	4.9	9.8	19.6	<i>A. americana</i>	
222b	<i>Manfreda</i> (= <i>Agave</i> ) <i>variegata</i> aff. Rose	Asparagaceae	Asparagales	4,655	4.8	9.5	19.0	<i>A. americana</i>	
223b	<i>Mangifera indica</i> <sup>b</sup>	Anacardiaceae	Sapindales	40	4	1,107	1.1	4.5	
224a	<i>Massonia depressa</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	3,293	3.4	6.7	
225a	<i>Massonia pusillata</i> Jacq.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	3,126	3.2	6.4	
226a	<i>Massonia</i> sp. <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	2,989	3.1	6.1	
227a	<i>Monstera deliciosa</i> Liebm.	Araceae	Alismatales	50	— <sup>d</sup>	4,704	4.8	12.2	
228a	<i>Muscaria armeniacum</i> Leichtlin ex Baker	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	4,214	4.3	8.6	
229a	<i>Muscaria aucheri</i> Hoog ex Turrill cv. Blue Magic	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	3,969	4.1	8.1	
230b	<i>Muscaria comosum</i> (L.) Mill. cv. Plumosum	Asparagaceae	Asparagales	18	2	4,165	4.3	8.5	
231a	<i>Muscaria latifolium</i> J.Kirk.	Rubiaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	4,753	4.9	9.7	
232a	<i>Myrmecodia echinata</i> <sup>b</sup>	Alliaceae	Gentianales	— <sup>d</sup>	— <sup>d</sup>	1,490	1.5	3.0	
233a	<i>Nectarsordium siculum</i> Lindl.	Aliaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	38,073	38.9	77.7	
234a	<i>Nicotiana tabacum</i> L. cv. Xanthi	Solanaceae	Solanales	48	4	4,459	4.6	9.1	
235a	<i>Nolina recurvata</i> Hemsl.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	8,722	8.9	17.8	
236a	<i>Nuphar luteum</i> Sibth. & Sm.	Nymphaeaceae	Nymphaeales	— <sup>d</sup>	— <sup>d</sup>	2,479	2.5	5.1	
237a	<i>Nymphaea alba</i> <sup>b</sup>	Oenothera lamarciana	Onagraceae	— <sup>d</sup>	— <sup>d</sup>	1,950	2.0	8.0	
238a	<i>Oenothera lamarckiana</i> Ser. in DC.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	1,166	1.2	4.8	
239b	<i>Ophiopogon japonicus</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	10,584	10.8	21.6	
240a	<i>Ophiopogon planiscapus</i> Nakai (white form)	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	5,929	6.1	12.1	
240b	<i>Ophiopogon planiscapus</i> Nakai cv. Nigrescens	Cactaceae	Caryophyllales	— <sup>d</sup>	— <sup>d</sup>	5,929	6.1	12.1	
241a	<i>Opuntia microdasys</i> var. <i>albispina</i> (Lehm.) Pfeiff.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	2,190	2.2	4.5	
242a	<i>Ornithogalum apertum</i> (Verdoom) Oberv.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	17,640	18.0	36.0	
243a	<i>Ornithogalum arachicum</i> <sup>b</sup>	<i>Ornithogalum canalicans</i> (= <i>Galtonia candicans</i> )	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	17,983	18.4	36.7
244a	(Baker) J.C.Manning & Goldblatt	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	6,909	7.1	14.1	
245a	<i>Ornithogalum dubium</i> Houtt.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	6,860	7.0	14.0	
246a	<i>Ornithogalum excapum</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	30,037	30.7	61.3	
247b	<i>Ornithogalum longibracteatum</i> Jacq.	Asparagaceae	Asparagales	c. 54	— <sup>d</sup>	7,399	7.6	15.1	
248a	<i>Ornithogalum maculatum</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	4,018	4.1	8.2	
249a	<i>Ornithogalum magnum</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	9,212	9.4	18.8	
250a	<i>Ornithogalum montanum</i> Tenore	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	30,478	31.1	62.2	
251a	<i>Ornithogalum harbonensis</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	32,781	33.5	66.9	
252a	<i>Ornithogalum nutans</i> L.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	21,511	22.0	43.9	
253a	<i>Ornithogalum oligophyllum</i> Clarke	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	4,361	4.5	8.9	
254a	<i>Ornithogalum pyriforme</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	8,477	8.7	17.3	
255a	<i>Ornithogalum pyrenaicum</i> <sup>b</sup>	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	15,239	15.6	31.1	
256a	<i>Ornithogalum saundersiae</i> Baker	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	6,223	6.4	12.7	
257a	<i>Ornithogalum umbellatum</i> L.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	17,297	17.7	35.3	
258a	<i>Ornithogalum viridiflorum</i> (= <i>Galtonia viridiflora</i> )	(Nerd.) J.C.Manning & Goldblatt	Asparagales	— <sup>d</sup>	— <sup>d</sup>	24,353	24.9	49.7	
259a	<i>Orobanche hederae</i> Duby	Orobanchaceae	Lamiaceae	— <sup>d</sup>	— <sup>d</sup>	10,241	10.5	20.9	
260a	<i>Oxalis acetosella</i> <sup>b</sup>	Oxalidaceae	Oxalidales	— <sup>d</sup>	— <sup>d</sup>	2,597	2.7	5.3	
261b	<i>Pachysandra terminalis</i> Siebold & Zucc.	Buxaceae	eudicots	22	2	2,793	2.9	5.7	
262a	<i>Paeonia broteroi</i> Boiss. & Reut.	Paeoniaceae	Saxifragales	— <sup>d</sup>	— <sup>d</sup>	1,691	1.7	3.5	
263a	<i>Paeonia illyricum</i> <sup>b</sup>	Alliaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	20,580	21.0	42.0	
264a	<i>Pancratium maritimum</i> L.	Alliaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	17,787	18.2	36.3	
265a	<i>Paradisea liliastrum</i> Bertol.	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	29,449	30.1	60.1	
266a	<i>Paradisea lusitanica</i> (Cout.) G.Sampaio	Asparagaceae	Asparagales	— <sup>d</sup>	— <sup>d</sup>	3,597	3.7	7.3	
267a	<i>Paris polyphylla</i> Sm.	Melanthiaceae	Liliaceae	— <sup>d</sup>	— <sup>d</sup>	3,700	3.8	7.6	
268a			Liliaceae	— <sup>d</sup>	— <sup>d</sup>	60,466	61.7	123.4	
								Clivia	

APPENDIX. (Continued, the superscript letters refer to notes preceding this table)

Entry number <sup>a</sup>	Species <sup>b</sup>	Family <sup>c</sup>	Order <sup>c</sup>	Higher group <sup>c</sup>	Ploidy level (x) <sup>d</sup>	Life cycle type <sup>e</sup>	DNA amount <sup>f</sup>					
							1C (Mbp)	1C (pg)	2C (pg)	4C (pg)	Standard species <sup>g</sup>	
269a	<i>Paris quadrifolia</i> L.	Melanthiaceae	Liliales	M	— <sup>d</sup>	P	58.898	60.1	120.2	240.4	<i>A. americana</i>	
270a	<i>Passiflora coerulea</i> Killip	Passifloraceae	Malpighiales	E	— <sup>d</sup>	— <sup>e</sup>	1.421	1.5	2.9	5.8	<i>A. americana</i>	
271c	<i>Phaius tankervillae</i> <sup>b</sup>	Oncidiaceae	Asparagales	M	c. 42	— <sup>d</sup>	19.747	20.2	40.3	80.6	<i>A. americana</i>	
272a	<i>Phaius wallichii</i> Lindl.	Oncidiaceae	Asparagales	M	— <sup>d</sup>	— <sup>e</sup>	10.094	10.3	20.6	41.2	<i>A. americana</i>	
273a	<i>Philodendron pinnatifidum</i> Schott	Araceae	Alismatales	M	— <sup>d</sup>	P	2.391	2.4	4.9	9.8	<i>A. americana</i>	
274b	<i>Philodendron selloum</i> K. Koch.	Araceae	Alismatales	M	36	2	1.793	1.8	3.7	7.3	<i>A. americana</i>	
274c	<i>Philodendron selloum</i> K. Koch.	Araceae	Alismatales	M	36	2	2.269	2.3	4.6	9.3	<i>A. americana</i>	
274d	<i>Philodendron selloum</i> K. Koch.	Araceae	Alismatales	M	36	2	2.636	2.7	5.4	10.8	<i>A. americana</i>	
275c	<i>Phoenix dactylifera</i> L.	Arecaceae	Arecales	M	36	2	1.299	1.3	2.7	5.3	<i>A. americana</i>	
276a	<i>Phragmites communis</i> Trin.	Poaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	1.103	1.1	2.3	4.5	<i>A. stricta</i>	
277n	<i>Pisum sativum</i> L. cv. Frison	Fabaceae	Fabales	E	14	2	A	4.263	4.4	8.7	17.4	<i>A. americana</i>
277o	<i>Pisum sativum</i> L. cv. Minerva Maple	Fabaceae	Fabales	E	14	2	A	4.263	4.4	8.7	17.4	<i>A. americana</i>
278a	<i>Pleione bulbocodioides</i> Rolfe (= <i>formosana</i> ) cv. Orwell Glory	Orchidaceae	Asparagales	M	— <sup>d</sup>	P	5.243	5.4	10.7	21.4	<i>A. americana</i>	
279a	<i>Polianthes geminiflora</i> <sup>b</sup>	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	4.116	4.2	8.4	16.8	<i>A. americana</i>	
280a	<i>Polianthes hybrid</i> cv. Chirp	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	4.557	4.7	9.3	18.6	<i>A. americana</i>	
281a	<i>Polianthes hybrid</i> cv. Sunset	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	4.655	4.8	9.5	19.0	<i>A. americana</i>	
282a	<i>Polianthes tuberosa</i> <sup>b</sup>	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	4.753	4.9	9.7	19.4	<i>A. americana</i>	
283a	<i>Polianthes x brundianii</i> <sup>b</sup>	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	4.361	4.5	8.9	17.8	<i>A. americana</i>	
284a	<i>Polygonatum multiflorum</i> <sup>b</sup>	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	15.043	15.4	30.7	61.4	<i>A. americana</i>	
285a	<i>Polygonatum odoratum</i> Druce	Boraginaceae	Asparagales	M	— <sup>d</sup>	P	11.319	11.6	23.1	46.2	<i>A. americana</i>	
286a	<i>Prunus laurocerasus</i> L. (large form)	Rosaceae	Rosales	E	— <sup>d</sup>	P	3.577	3.7	7.3	14.6	<i>A. americana</i>	
286b	<i>Prunus laurocerasus</i> L. (medium form)	Rosaceae	Rosales	E	— <sup>d</sup>	P	3.577	3.7	7.3	14.6	<i>A. americana</i>	
286c	<i>Prunus laurocerasus</i> L. cv. Otto Luyken	Rosaceae	Rosales	E	— <sup>d</sup>	P	3.577	3.7	7.3	14.6	<i>A. americana</i>	
287a	<i>Pulmonaria longifolia</i> Bast.	Boraginaceae	euasterids I	E	— <sup>d</sup>	P	1.862	1.9	3.8	7.6	<i>A. americana</i>	
288a	<i>Pulmonaria officinalis</i> <sup>b</sup>	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	P	1.558	1.6	3.2	6.4	<i>A. stricta</i>	
289a	<i>Pulsatilla alpina</i> <sup>b</sup>	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	P	12.642	12.9	25.8	51.6	<i>A. americana</i>	
290a	<i>Pulsatilla apifolia</i> <sup>b</sup>	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	P	4.459	4.6	9.1	18.2	<i>A. americana</i>	
291a	<i>Pulsatilla vulgaris</i> Mill.	Ranunculaceae	Ranunculales	E	— <sup>d</sup>	P	17.052	17.4	34.8	69.6	<i>A. americana</i>	
292d	<i>Puschkinia scilloides</i> <sup>b</sup>	Asparagaceae	Asparagales	M	10	2	P	6.860	7.0	14.0	28.0	<i>A. americana</i>
293a	<i>Ramonda pyrenaica</i> <sup>b</sup>	Gesneriaceae	Lamiaceae	E	— <sup>d</sup>	P	1.274	1.3	2.6	5.2	<i>A. stricta</i>	
294b	<i>Ranunculus astacium</i> <sup>b</sup> (double flower form)	Ranunculaceae	Ranunculales	E	16	2	P	8.085	8.3	16.5	33.0	<i>A. americana</i>
295b	<i>Ranunculus ficaria</i> <sup>b</sup> cv. Brazen Hussy	Ranunculaceae	Ranunculales	E	16	2	P	10.584	10.8	21.6	43.2	<i>A. americana</i>
295c	<i>Ranunculus ficaria</i> <sup>b</sup> f. flore-pleno	Ranunculaceae	Ranunculales	E	16	2	P	10.094	10.3	20.6	41.2	<i>A. americana</i>
296b	<i>Ranunculus ficaria</i> <sup>b</sup> ssp. <i>bulbosa</i>	Ranunculaceae	Ranunculales	E	24	3	P	16.464	16.8	33.6	67.2	<i>A. americana</i>
297b	<i>Ranunculus glacialis</i> L.	Cactaceae	Caryophyllales	E	16	2	P	3.724	3.8	7.6	15.2	<i>A. americana</i>
298a	<i>Rebutia albiflora</i> F. Ritter & Buining	Orobanchaceae	Lamiaceae	E	— <sup>d</sup>	P	1.867	1.9	3.8	7.6	<i>A. americana</i>	
299a	<i>Rhinanthus glaber</i> var. <i>glaber</i> Lam.	Hypoxidaceae	Asparagales	M	— <sup>d</sup>	A	2.989	3.1	6.1	12.2	<i>A. americana</i>	
300a	<i>Rhodohypoxis baurii</i> <sup>b</sup> cv. Tetra White	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	1.622	1.7	3.3	6.6	<i>A. americana</i>	
300b	<i>Rhodohypoxis baurii</i> <sup>b</sup>	Hypoxidaceae	Asparagales	M	— <sup>d</sup>	P	1.715	1.8	3.5	7.0	<i>A. americana</i>	
301a	<i>Rhodohypoxis deflexa</i> <sup>b</sup>	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	2.401	2.5	4.9	9.8	<i>A. americana</i>	
302a	<i>Rohdea japonica</i> Roth (white edge)	Iridaceae	Asparagales	M	— <sup>d</sup>	P	52.430	53.5	107.0	214.0	<i>A. americana</i>	
303a	<i>Romulea bulbocodiumoides</i> Eckl.	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	3.430	3.5	7.0	14.0	<i>A. americana</i>	
304b	<i>Ruscus hypophyllum</i> L.	Asparagaceae	Asparagales	M	40	— <sup>d</sup>	P	9.016	9.2	18.4	36.8	<i>A. americana</i>
305a	<i>Sagittaria sagittifolia</i> <sup>b</sup>	Alismataceae	Alismatales	M	— <sup>d</sup>	P	20.825	21.3	42.5	85.0	<i>A. americana</i>	
306a	<i>Sansevieria trifasciata</i> Hort. ex Prain cv. Forescate	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	—	—	1:3	2.6	<i>A. americana</i>	
306b	<i>Sansevieria trifasciata</i> Hort. ex Prain cv. Hahnii	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	1.274	1:3	2.6	5.2	<i>A. americana</i>	
306c	<i>Sansevieria trifasciata</i> Hort. ex Prain cv. Laurentii	Asparagaceae	Asparagales	M	— <sup>d</sup>	P	—	—	2.6	5.2	<i>A. americana</i>	

306d	<i>Sansevieria trifasciata</i> Hort. ex Prain cv. Moonshine		2.6	5.2	<i>A. americana</i>
307b	<i>Saururus cernuus</i> <sup>b</sup>		0.6	1.2	<i>A. americana</i>
308a	<i>Scadoxus multiflorus</i> Raf.		43.316	44.2	88.4
309b	<i>Scilla mischtschenkoana</i> Grossheim		24.500	25.0	50.0
310a	<i>Scilla monophyllos</i> Link		7.252	7.4	14.8
311b	<i>Scilla peruviana</i> L.		17.346	17.7	35.4
312a	<i>Scilla peruviana</i> L.		26.705	27.3	50.5
313g	<i>Scilla siberica</i> A.H.Haworth		36.946	37.7	150.8
313h	<i>Poaceae</i>		36.946	37.7	<i>A. americana</i>
314m	<i>Secale cereale</i> L. cv. Petkus Spring		7.595	7.8	150.8
315a	<i>Sedum suaveolens</i> Kinnmack		8.918	9.1	31.0
316a	<i>Senecio 'Kilmanjaro'</i>		4.998	5.1	<i>A. stricta</i>
317a	<i>Senecio abbreviatus</i> S.Moore		5.880	6.0	<i>A. americana</i>
318a	<i>Senecio aloides</i> DC.		9.898	10.1	20.2
319a	<i>Senecio articulatus</i> Sch.Bip.		2.842	2.9	5.8
320a	<i>Senecio cedrorum</i> Raynal		4.704	4.8	19.2
321a	<i>Senecio cephalophorus</i> (Compton) Jacobsen		14.896	15.2	60.8
322a	<i>Senecio curviformis</i> Rowley		2.675	2.7	24.0
323a	<i>Senecio crassistimus</i> Humbert		4.018	4.1	40.4
324a	<i>Senecio crassulaefolius</i> Sch.Bip.		5.635	5.8	11.6
325a	<i>Senecio decaryi</i> Humbert		4.802	4.9	23.0
326a	<i>Senecio fulgens</i> <sup>b</sup> (small form)		4.165	4.3	10.9
326b	<i>Senecio fulgens</i> <sup>b</sup> (large form)		4.263	4.4	16.4
327a	<i>Senecio hallianus</i> Rowley (large form)		6.468	6.6	26.4
327b	<i>Senecio hallianus</i> Rowley (small form)		6.615	6.8	27.0
328a	<i>Senecio heddingii</i> <sup>b</sup>		12.642	12.9	51.6
329a	<i>Senecio herreianus</i> Dinter (small form)		4.508	4.6	19.6
330a	<i>Senecio herreianus</i> Dinter (large form)		7.889	8.1	17.0
330b	<i>Senecio herreianus</i> Dinter (variegated)		4.900	5.0	32.2
331a	<i>Senecio implexus</i> Bally		4.459	4.6	10.0
332a	<i>Senecio jacobsenii</i> Rowley (compact form)		12.005	12.3	20.0
332b	<i>Senecio klenzia</i> Less.		12.495	12.8	49.0
333a	<i>Senecio kleniiformis</i> Suesseng.		6.958	7.1	18.4
334a	<i>Senecio kleniiformis</i> Suesseng. (small form)		2.597	2.7	51.0
335a	<i>Senecio macroglossus</i> DC.		9.457	9.7	32.2
336a	<i>Senecio mwerensis</i> ssp. <i>leptophyllus</i> Baker		4.116	4.2	28.4
337a	<i>Senecio mwerensis</i> ssp. <i>sagittatus</i> Baker		9.751	10.0	30.0
338a	<i>Senecio nyikensis</i> var. <i>hildebrandtii</i> Baker		19.306	19.7	38.6
339a	<i>Senecio nyikensis</i> var. <i>nyikensis</i> Baker		3.626	3.7	10.6
340a	<i>Senecio oxyrifolius</i> <sup>b</sup>		18.914	19.3	77.2
341a	<i>Senecio radicans</i> Sch.Bip. (large form)		9.653	9.9	39.4
342a	<i>Senecio pendulus</i> <sup>b</sup>		4.900	5.0	20.0
343a	<i>Senecio pendulus</i> <sup>b</sup> (large form)		25.627	26.2	104.6
344a	<i>Senecio picticaulis</i> Bally		11.074	11.3	45.2
345a	<i>Senecio radicans</i> Sch.Bip. (large form)		2.744	2.8	11.2
346a	<i>Senecio radicans</i> Sch.Bip. (small form)		14.406	14.7	55.8
347a	<i>Senecio rowleyanus</i> var. <i>variegata</i>		14.749	15.1	58.8
347b	<i>Senecio rowleyanus</i> <sup>b</sup>		11.221	11.5	60.2
348a	<i>Senecio sempervivus</i> ssp. <i>granti</i> Sch.Bip. (large form)		13.671	14.0	30.1
348b	<i>Senecio sempervivus</i> ssp. <i>granti</i> Sch.Bip. (intermediate form)		2.793	2.9	10.8
348c	<i>Senecio sempervivus</i> ssp. <i>semperfervens</i> Sch.Bip. (large form)		11.221	11.5	45.8
348d	<i>Senecio sempervivus</i> ssp. <i>semperfervens</i> Sch.Bip. (small form)		11.123	11.4	22.7
349a	<i>Senecio staphelaeformis</i> Phillips		10.045	10.3	41.0

APPENDIX. (Continued, the superscript letters refer to notes preceding this table)

Entry number <sup>a</sup>	Species <sup>b</sup>	Family <sup>c</sup>	Order <sup>c</sup>	Higher group <sup>c</sup>	Ploidy level (x) <sup>d</sup>	Life cycle type <sup>e</sup>	DNA amount <sup>f</sup>				Standard species <sup>g</sup>	
							2n <sup>d</sup>	(Mbp)	IC (pg)	2C (pg)		
349b	<i>Senecio stapediiformis</i> Phillips var. <i>minor</i>	Asteraceae	Asterales	E	— <sup>d</sup>	— <sup>d</sup>	P	10,192	104	20.8	<i>A. americana</i>	
350a	<i>Senecio stapediiformis</i> × <i>implexus</i> <sup>b</sup>	Asteraceae	Asterales	E	— <sup>d</sup>	— <sup>d</sup>	P	12,642	129	25.8	<i>A. americana</i>	
351d	<i>Senecio vulgaris</i> L.	Asteraceae	Asterales	40	4	A	1,715	1.8	3.5	7.0	<i>A. stricta</i>	
352a	<i>Senecio × abbreviatus</i> <sup>b</sup>	Asteraceae	Asterales	— <sup>d</sup>	— <sup>d</sup>	P	6,566	6.7	13.4	26.8	<i>A. americana</i>	
353a	<i>Senecio × cephalophorus</i> <sup>b</sup>	Asteraceae	Asterales	— <sup>d</sup>	— <sup>d</sup>	P	15,533	15.9	31.7	63.4	<i>A. americana</i>	
354a	<i>Senecio × peregrinus</i> <sup>b</sup>	Asteraceae	Asterales	— <sup>d</sup>	— <sup>d</sup>	P	2,695	2.8	5.5	11.0	<i>A. americana</i>	
355e	<i>Silene latifolia</i> <sup>b</sup>	Caryophyllaceae	Caryophyllales	E	24	2	AP	2,793	2.9	5.7	<i>A. americana</i>	
356a	<i>Silene rubra</i> <sup>b</sup>	Caryophyllaceae	Caryophyllales	E	— <sup>d</sup>	— <sup>d</sup>	— <sup>e</sup>	2,793	2.9	5.7	<i>A. americana</i>	
357b	<i>Sisyrinchium bermudianum</i> L.	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	3,141	3.2	6.4	<i>A. americana</i>	
358b	<i>Skimmia japonica</i> (male) <sup>b</sup> cv. <i>Rubella</i>	Rutaceae	Sapindales	E	30	— <sup>d</sup>	P	2,499	2.6	5.1	10.2	<i>A. americana</i>
358c	<i>Skimmia japonica</i> (female) <sup>b</sup>	Rutaceae	Sapindales	E	31	— <sup>d</sup>	P	2,597	2.7	5.3	11.4	<i>A. americana</i>
359a	<i>Skimmia reevesiana</i> R.Fortune	Rutaceae	Sapindales	E	30	2	P	5,684	5.8	11.6	23.2	<i>A. americana</i>
360a	<i>Spathiphyllum</i> cv. <i>Cupido</i>	Araceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	6,909	7.1	14.1	28.2	<i>A. stricta</i>
361a	<i>Spathiphyllum</i> cv. <i>Macho</i>	Araceae	Alismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	9,849	10.1	20.1	40.2	<i>A. stricta</i>
362a	<i>Stapelia grandiflora</i> <sup>b</sup>	Apoynaceae	Gentianales	E	— <sup>d</sup>	— <sup>d</sup>	P	2,259	2.3	4.6	9.2	<i>A. americana</i>
363a	<i>Stratiotes aloides</i> L.	Hydrocharitaceae	Arismatales	M	— <sup>d</sup>	— <sup>d</sup>	P	4,851	5.0	9.9	19.8	<i>A. americana</i>
364a	<i>Tamarix tetrandra</i> <sup>b</sup>	Tamaricaceae	Caryophyllales	E	— <sup>d</sup>	— <sup>d</sup>	P	1,519	1.6	3.1	6.2	<i>A. americana</i>
365a	<i>Tecophilaea cyanocrocus</i> var. <i>violacea</i> Leyb.	Tecophilaeaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	2,210	2.3	4.5	9.0	<i>A. americana</i>
366a	<i>Tigridia pavonia</i> <sup>b</sup>	Iridaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	4,263	4.4	8.7	17.4	<i>A. americana</i>
366b	<i>Tecophilaea cyanocrocus</i> var. <i>leichtlinii</i> Leyb.	Tecophilaeaceae	Asparagales	M	— <sup>d</sup>	— <sup>d</sup>	P	2,210	2.3	4.5	9.0	<i>A. americana</i>
367a	<i>Tillandsia cyanea</i> <sup>b</sup>	Bromeliaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	P	1,083	1.1	2.2	4.4	<i>A. stricta</i>
368a	<i>Tillandsia usneoides</i> (L.) L.	Bromeliaceae	Poales	M	— <sup>d</sup>	— <sup>d</sup>	P	1,235	1.3	2.5	5.0	<i>A. stricta</i>
369a	<i>Tradescantia dracaenoides</i> (C.B.Clarke ex DC.) Greenm.	Commelinaceae	Commelinaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	11,613	11.9	23.7	47.4	<i>A. americana</i>
370b	<i>Tradescantia fluminensis</i> Vell cv. <i>Maiden Blush</i> .	Commelinaceae	Commelinaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	9,408	9.6	19.2	38.4	<i>A. stricta</i>
371a	<i>Tradescantia naviularis</i> Ortgies	Commelinaceae	Commelinaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	28,861	58.9	117.8	348.9	<i>A. stricta</i>
372b	<i>Tradescantia pallida</i> (Rose) D.R.Hunt	Commelinaceae	Commelinaceae	M	24	4	P	24,892	25.4	50.8	101.6	<i>A. americana</i>
373b	<i>Tradescantia stllamontana</i> Matuda	Commelinaceae	Commelinaceae	M	24	4	P	17,052	17.4	34.8	69.6	<i>A. americana</i>
374a	<i>Tradescantia spathacea</i> Sw.	Commelinaceae	Commelinaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	7,595	7.8	15.5	31.0	<i>A. stricta</i>
375e	<i>Tradescantia virginiana</i> L.	Commelinaceae	Commelinaceae	M	24	4	P	40,915	41.8	83.5	167.0	<i>A. americana</i>
376a	<i>Tradescantia zeyheri</i> Hook.f.	Commelinaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	17,689	18.1	36.1	72.2	<i>A. americana</i>
377a	<i>Tricyrtis hirta</i> Hook.f.	Liliaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	4,655	4.8	9.5	19.0	<i>A. americana</i>
378a	<i>Trillium aestival</i> Makino	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	93,100	95.0	190.0	380.0	<i>Clivia</i>
379a	<i>Trillium cernuum</i> <sup>b</sup>	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	55,615	56.8	113.5	227.0	<i>Clivia</i>
380a	<i>Trillium chloropetalum</i> (Torr.) Howell	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	57,722	58.9	117.8	235.6	<i>Clivia</i>
381a	<i>Trillium cuneatum</i> Raf.	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	56,693	57.9	115.7	231.4	<i>Clivia</i>
382a	<i>Trillium decipiens</i> J.D.Freeman	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	57,575	58.8	117.5	235.0	<i>Clivia</i>
382b	<i>Trillium decipiens</i> J.D.Freeman	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	59,927	61.2	122.3	244.6	<i>Clivia</i>
383c	<i>Trillium erectum</i> L.	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	56,301	57.5	114.9	229.8	<i>Clivia</i>
384a	<i>Trillium luteum</i> Harbison	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	56,007	57.2	114.3	228.6	<i>Clivia</i>
385a	<i>Trillium recurvatum</i> Beck	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	56,252	57.4	114.8	229.6	<i>Clivia</i>
386a	<i>Trillium reliquum</i> J.D.Freeman	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	56,987	58.2	116.3	232.6	<i>Clivia</i>
386b	<i>Trillium reliquum</i> J.D.Freeman	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	60,613	61.9	123.7	247.4	<i>Clivia</i>
387a	<i>Trillium rivale</i> S.Watson	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	43,953	44.9	89.7	179.4	<i>Clivia</i>
388a	<i>Trillium smallii</i> Maxim.	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	83,741	85.5	170.9	341.8	<i>Clivia</i>
389a	<i>Trillium underwoodii</i> Small	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	56,154	57.3	114.6	229.2	<i>Clivia</i>
389b	<i>Trillium underwoodii</i> Small	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	58,065	59.3	118.5	237.0	<i>Clivia</i>
389c	<i>Trillium underwoodii</i> Small	Melanthiaceae	Liliaceae	M	— <sup>d</sup>	— <sup>d</sup>	P	59,094	60.3	120.6	241.2	<i>Clivia</i>

390a	<i>Triteleia laxa</i> Benth. (= <i>Brodiaea laxa</i> ). <i>Triticum aestivum</i> L. cv. Chinese Spring <i>Trollius europaeus</i> <sup>b</sup> cv. Orange King	Asparagaceae Poaceae Ranunculales	M M M	— <sup>d</sup> — <sup>d</sup> — <sup>d</sup>	— <sup>d</sup> — <sup>d</sup> — <sup>d</sup>	11.7 11,466 23.4	46.8 69.8 34.9	<i>A. americana</i> <i>A. americana</i> <i>A. americana</i>
391q	<i>Tuberaria guttata</i> <sup>b</sup> (from Kew, UK)	Cistaceae	E	P	A	17,101 4,327	8.8 4.4	17.7 14.4
392a	<i>Tuberaria guttata</i> <sup>b</sup> (from Ireland)	Malvales	E	P	A	3,538 3,675	3.6 3.8	7.2 7.5
393b	<i>Tuberaria guttata</i> <sup>b</sup> (from Utrecht, The Netherlands)	Malvales	E	P	A	3,724	3.8	15.0 15.2
393c	<i>Tuberaria guttata</i> <sup>b</sup> (from Spain)	Malvales	E	P	A	3,778	3.9	15.4
393d	<i>Tuberaria guttata</i> <sup>b</sup> (from Coimbra, Portugal)	Malvales	E	P	A	4,606	4.7	9.4 18.8
393e	<i>Urginea maritima</i> Baker (from Crete)	Asparagaceae	M	P	P	13,279 19,747	13.6 20.2	54.2 80.6
394a	<i>Urginea maritima</i> Baker (from Benidorm, Spain)	Asparagaceae	M	P	P	16,464	16.8	67.2
394b	<i>Vanda coerulea</i> Griff. ex Lindl.	Orchidaceae	M	P	P	7,595	7.8	33.6 31.0
395a	<i>Vanilla planifolia</i> <sup>b</sup>	Orchidaceae	M	P	P	9,996	10.2	40.8
396b	<i>Veltheimia bracteata</i> Harv. ex Baker	Asparagaceae	M	P	P	10,731	11.0	21.9
397a	<i>Veltheimia capensis</i> DC.	Asparagaceae	M	P	P	12,985	13.3	43.8 53.0
398a	<i>Vicia faba</i> L.	Fabaceae	E	P	P	12	2	2.0
399u	<i>Vicia sativa</i> var. <i>nigra</i> L.	Fabaceae	E	P	P	1,911	3.9	7.8
400z	<i>Vinca major</i> <sup>b</sup>	Gentianales	E	P	P	2,058	2.1	4.2
401a	<i>Yucca elephantipes</i> <sup>b</sup>	Asparagaceae	M	P	P	5,880	6.0	12.0
402a	<i>Yucca glauca</i> <sup>b</sup>	Asparagaceae	M	P	P	2,597	2.7	5.3
403a	<i>Yucca gloriosa</i> L.	Asparagaceae	M	P	P	2,989	3.1	10.6 12.2
404a	<i>Yucca harriettiae</i> Trel. aff. <i>nana</i>	Asparagaceae	M	P	P	2,646	2.7	10.8
405a	<i>Yucca whipplei</i> Torr.	Asparagaceae	M	P	P	2,744	2.8	5.6
405b	<i>Zamioculcas zamiifolia</i> Engl.	Araceae	M	P	P	3,822	3.9	7.8
406a	<i>Zantedeschia aethiopica</i> Spreng.	Araceae	M	P	P	23,569	24.1	15.6 48.1
407a	<i>Zantedeschia albomaculata</i> Baill.	Araceae	M	P	P	2,254	2.3	9.2
408a	<i>Zephyranthes candida</i> (Lindl.) Herb.	Alliaceae	M	P	P	18,620	19.0	9.2 38.0
409a	<i>Zephyranthes cirtina</i> Baker	Alliaceae	M	P	P	15,435	15.8	76.0 31.5
410a								63.0
411a								

13 *Hyacinthus orientalis* cultivars and noted that aneuploidy was common. Two of the cultivars studied ('Pink Pearl' and 'Delft Blue') were the same as those listed in the Appendix. Since the cultivars are clonal the chromosome numbers given in Brandham and West can be assumed to be the same as those studied here. Thus 'Pink Pearl' is listed as a diploid with  $2n = 16$ , while 'Delft Blue' is an aneuploid tetraploid with  $2n = 4x - 2 = 30$ . Based on similar C-values in cultivars 'Pink Pearl' and 'White Pearl' (28.4 and 27.3 pg, respectively), the latter is also entered as diploid. Further, as the DNA amounts for cultivars 'Delft Blue' and 'Anna Marie' are similar (43.4 and 42.4 pg, respectively), the latter is entered as circa tetraploid, although the exact chromosome number is unknown. The higher C-value cultivar 'L'Innocence' (51.60 pg) suggests it is pentaploid.

(i) *Sansevieria tricasciata ploidy chimeras*. The leaves of *Sansevieria trifasciata* 'Laurentii' and 'Forescate' are ploidy chimeras (Zonneveld and Van Iren, 2000). Most plant leaves

are built up from three layers, L1, L2 and L3, which develop from the apical meristem. In the variegated *S. trifasciata* 'Laurentii' the yellow leaf edge corresponds to cells derived from L1 and the green cells in the leaf centre from L3. Between L1 and L3 is a single layer of cells which comprise L2, from which the floral meristem and hence the gametes will arise. Measurements of 2C values from leaf tissue taken from the yellow edge gave a 2C value of 5.2 pg whereas nuclei isolated from the green central tissue (L3) were  $2C = 2.6$  pg. As it was difficult to be sure of obtaining cells from L2, the 1C value of the gametes is unclear. Thus this value has been omitted from the Appendix, and just the 2C and 4C values from the layer with the lowest DNA amount (i.e. from L3) are entered. In *S. trifasciata* 'Forescate' cells in the green central tissue had a 2C value of 7.8 pg (L3) whereas those at the yellow edge (L1) were  $2C = 5.2$  pg. Again, the 1C value was omitted and just the 2C and 4C values for the layer with the lowest DNA amount (i.e. from L1) were entered.