

# News from

# Jim & Jenny Archibald

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NEWSLETTER & SEED LIST

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## VIEWPOINT ? READ THE FACTS THE RHS REFUSED TO PUBLISH

In the September 1999 issue of 'The Garden', Christopher Grey-Wilson criticised British gardeners who import plants from China. He alleged that the plants are all collected in the wild and that the Convention on International Trade in Endangered Species (CITES) is being flouted. Do we really need to examine our consciences as he suggests ? Jim asked if he thinks we gardeners are all .....

## DEPRAVED AND CORRUPTED ?

"Can I interest you in a tasteful piece of horticultural pornography ?" said the sales assistant on the bookstall at an American conference I attended recently. Riffing through the pages of Gisela Schliemann's homage to Helen Ballard's hellebores, I could see how easily the interest of the neophyte might be stimulated by the large format, seductively lit studio photographs but to me this was 'Penthouse' stuff. "Have you got any old 'Kew Magazine Monographs' ?", I asked in a low voice. A copy of 'The Genus *Cypripedium*' was pulled out from under the counter : a whole volume dedicated to the slipper of Venus herself, exquisitely illustrated in tantalising detail by the most skilled practitioners of botanical art. For those who wish to explore the outer reaches and the forbidden zones of esoteric, intellectual horto-erotica nothing equals the 'Kew Magazine Monographs' during the period they were edited by Christopher Grey-Wilson : not only 'The Genus *Cypripedium*' (all in CITES Appendix II) but 'The Genus *Lewisia*' (several in CITES Appendix II), 'The Genus *Echinocactus*' (all in CITES Appendix II) ; 'The Genus *Pleione*' (all in CITES Appendix II) and, of course, his own 'The Genus *Cyclamen*' (Several in CITES Appendix I and the rest in Appendix II).

Not only has Chris been responsible for the production of these classics of controlled horticulture but he writes prolifically about all manner of proscribed Oriental delights, travelling internationally to tell of his personal encounters in the Far East and showing superlative photographs of his Chinese experiences. Now that we are all in a frenzy of desire to share just a little of these with him, he castigates us mercilessly. It is "scandalous", "wild and blatant." It is all our fault. We are humiliated. With cruel and consummate skill he has built up our

expectations to cast them down, manipulating our British penchant for wallowing in remorse. An orgy of guilt-ridden censoriousness, finger-pointing, banning and stamping out may follow.

With the increasing pressure to be self-supporting squeezing the finances of formerly government-funded institutions, I certainly should not criticise the management at Kew. Why not exploit the talents of employees to profit from the horticultural appeal of publications devoted to "rare and endangered species" with large and colourful reproductive parts ? While these monographs are all extremely competent works of a high standard, it seems paradoxical that an organisation is involved in advertising the attractions of commodities, whose supply it is in the business of restricting. Cynical subscribers to more abstruse and improbable conspiracy theories might wonder at this overwhelming emphasis on accounts of genera included under CITES, a piece of legislation for which Kew has been largely responsible and acts as consultants to Customs and Excise, the Department of the Environment and the European Union. They might wonder even more when there is a Kew Magazine Monograph anticipated on the genus *Arisaema* and Chris Grey-Wilson advocates that this genus should be listed under CITES without delay. Are we being manipulated? Surely not. After all, this is Britain not China.

Over the past two decades botanical institutes in SW China, notably at Kunming and Chengdu, have evolved an extensive operation serving the demands of foreigners clamouring to collect seeds and plants from Yunnan and Sichuan. Readers of British gardening publications may have the impression that this

has been some sort of exclusive privilege of the British. Individuals and groups from other western European countries, North America, Australasia, SE Asia and Japan have poured in, often flying in and out from Bangkok and avoiding any problems with the authorities at Beijing when they exit. The "special dispensation" for foreigners to collect plants, which Chris mentions, seems to have been quite freely available for some time, in Yunnan at least. In my experience, "special dispensations" in any country depend on either who you are and who you know or what you will pay. The cost of the Chinese package the last time I was asked if I should like to join such a group was \$100 per person per day, a realistic sum by rich western standards but, considering the average income in China, one which could be multiplied by at least ten in comparative terms. The British Alpine Garden Society Expedition, in which Chris Grey-Wilson participated, alone involved almost 500 man-days in the field. \$50,000 is a substantial amount of money in this country but a fortune in Yunnan. Moreover, there was at least one other British group being simultaneously packaged by Kunming. Chris and his fellow-travellers have not only made Chinese botanists aware how much money foreigners will pay to see and collect the local plants but also precisely which groups of plants are of most interest to them. The Beijing end of this new marketing operation is fronted by the daughter of one of the leading Chinese botanical academics and its lists notably concentrate on such fashionable genera as *Fritillaria*, *Lilium*, *Corydalis*, *Arisaema* and *Cypripedium*. Interestingly, during the last year or so, as the export of South-west Chinese plants by way of Beijing has become more significant, "special dispensations" for foreigners to collect and export plant material through Yunnan do not appear to have been forthcoming. Cutting-out middle-men is a standard business practice.

Though it meets with the disapproval of Chris Grey-Wilson, we should not assume that this new export business is not viewed favourably by the present Chinese government. In a recent article on the restoration of the walled garden in the Forbidden City, Lorian Holland writes that "Peking's new leadership, on the lookout for ways of increasing foreign investment, recently dedicated its first world exposition to horticulture. As China has more native flowering plants than Europe and North America combined, Peking is looking to draw in world expertise in bio-technology, medical research and flower production." Historically, gardening has been part of Chinese culture for far longer than in the West. Most of the introductions to Europe, made by that early employee of the Royal Horticultural Society, Robert Fortune, were of plants obtained from Chinese nurseries and gardens in the 1840's. The horticultural industry continues to be extensive. Last year I visited a vast nursery in Vancouver, acting as a clearing-house for container-grown, woody plants imported from China and marketed throughout the West Coast of North America. I was shown around by an enthusiastic, young Chinese botanist, an employee of the Nanjing Botanical Institute working there. I see no grounds for Chris Grey-Wilson's assumption that all plants coming out of China have been "stripped from the wild." On the contrary, I should say that the plants of *Helleborus thibetanus* and the bulbs of *Fritillaria* and *Lilium*, which I have seen, have been cultivated stock. The uses of such plants for either medicinal or culinary purposes are a long-standing feature of Chinese culture. Chris himself remarked elsewhere that the scarcity of a lily in the wild "may be accounted for by the fact that the Chinese like to eat lily bulbs."

There is at present a very extensive, legitimate international business in marketing thousands of ancient, wild-collected tree-ferns (*Dicksonia antarctica*), mainly from Tasmania. All *Dicksoniaceae* are covered by CITES Appendix II but no one complains because these are marketed as having been "rescued from the vast areas of Australia being bulldozed". The Chinese would seem to have entered the world of global capitalism with a naive enthusiasm. They have failed to understand that image is now everything in the West. Window-dressing was needed for their operation. Perhaps they should have increased the price of their plants to pay for a licencing bureaucracy to generate official pieces of paper stamped with 'Certified nursery-grown by the People's Republic of China' or 'Harvested from managed populations' as appropriate. A good public relations firm could then have ensured that they were flying high on angels' wings along with 'The Bodyshop': 'Gathered from sustainable natural sources by the indigenous peoples of Yunnan' and 'A percentage from the sale of this plant will assist in establishing rural clinics in Sichuan' with publicity featuring a picture of a fetching child in traditional costume or, for the British market, a baby panda: 'A percentage from the sale of this plant will ensure his future.'

What is to be done by British gardeners about all this now? I should say absolutely nothing. As far as the importation is concerned, this is solely the concern of British Customs and Excise. In spite of the fact that Chris appears to consider them incompetent, "unwary" and easily fooled, I have always found them to be a courteous and efficient authority to deal with. His statement that "possession of CITES-restricted plants without a valid certificate is unlawful" is, quite simply, wholly untrue. At present, no-one need fear having their door kicked in at 3 a.m. because they have an uncertificated cyclamen in the garden or cactus on the window-sill, no matter how much Chris may relish the thought of a society where such things happen. Anyone importing anything, of course, should ensure that the paperwork is in order. Among all the Chinese genera which Chris mentions only those in *Orchidaceae* are covered by CITES. In spite of the impression he gives, it is perfectly legal to import both wild-collected and cultivated Chinese orchids with the appropriate documentation and to import all the other genera he mentions without any documentation at all, other than a Chinese phytosanitary certificate and accompanying invoice.

As far as the plants are concerned, Chris has made his own views clear and it is now up to moderately well-informed adult individuals to reach their own decisions. If you feel very strongly about the possibility that some of this material may have been collected from wild populations, you can quite simply desist from buying any plant which is native to China. So, if you want to be really sure "just say no" to everything which might be Chinese.

As far as these exports are concerned, I should say that it is solely the business of the Chinese government how it manages any sustainable natural resource which occurs within the confines of its country. Of course, we can all express opinions tactfully and give advice, if it is asked for, but we should only have ourselves to blame if the Chinese say of us in 1999 what Robert Fortune said of them in 1865: "From the highest Mandarin down to the meanest beggar they are filled with the most conceited notions of their own importance."

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business. Apart from personal cheques, payments can be made in bank-notes for any of these currencies (please send by registered mail), a bank draft or International Money Order (in US \$ or £ sterling for these please). We do not operate a Giro account to enable direct transfers nor do we accept credit card payments at present. If remitting by sterling cheque, it is a great help both to you and to us, if you send us an open cheque, limited to the total value of your order. Obviously it cannot be made out for more than the limit but it can certainly be made out for less, avoiding annoying credits or refunds - you will only pay for what we have sent after the order is despatched. If you do not wish to do this, a list of some possible substitutes will be very helpful - we shall not use them unless we have to and, if we do, we always try to send more than the value of the items not supplied. We shall not pay in your cheque until after your order has been sent - it is in our interest, as well as yours, to complete your order as quickly as we can .

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## Our population reference numbers . . . . .

The species in our lists are divided into five distinct geographical areas. Within these areas they run in alphabetical order. The numbers appearing before the names run in numerical order (which means we do not much like generic 'splitting'). These numbers refer to particular populations, mainly in the wild, though cultivated material without data is given a number also. Wild collections which cannot be fully identified will be found under a five-digit field number. This number refers to a collection made by us on a particular date only. Both sets of numbers are permanent. The use of population references is to avoid seed from the same population of plants being distributed under a proliferation of field-numbers. In some instances, the same population of plants can be found in our own field-notes under a multitude of field-numbers, when it has been visited by us in different years. When another collector is involved their name or field number is quoted in the data following the plant name.

Identified species from Europe, W Asia & N Africa have six-digit numbers here, though they have an 0. before them on our records and you may see this on a label. The seven-digit numbers start with a 1. for North America, 2. for South America, 3. for Southern Africa (S of the Sahara), 4. for

Eastern Asia and 5. for Australasia. Garden hybrids and selections (with which we are not much involved) start with 6.

The names we use in this list will usually be those in the standard, modern floras for the areas concerned or those used in standard monographs of particular genera, (as far as either of these exist). We try to maintain a degree of international objectivity & do not necessarily put nomenclature in line with British horticultural reference publications, such as the 'RHS Dictionary', 'AGS Encyclopaedia' or 'The Plantfinder'. Names used in these or in general horticultural use may be in brackets

Cultivated seed, which has become increasingly evident in our lists, as we build up stocks raised from seed of wild origin, is marked with an asterisk (\*). The field-data given in these cases refers to the parents. Almost all cultivated seed was collected in 1999. Much is hand-pollinated but this will not always ensure freedom from hybridization nor does this necessarily produce similar-looking seedlings. As our parent-stocks frequently represent samples of wild populations, seedlings will at least show the considerable variation often present in the wild. We attempt to preserve the genetic diversity of the wild plants not to impose our concepts on them.

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The figure in brackets before the price code is the number of seeds per packet

This first section covers species from Europe, N Africa (N of the Sahara) and W Asia (W from Pakistan N through the Pamirs, the Tien Shan & the Altai), a distinct floristic area. Nomenclature follows the basic floras, 'Flora Europaea', 'Flora of Turkey' & 'Flora Iranica' with a little editing and updating, if this is felt to be helpful to gardeners. Collections from the republics of the former USSR are usually listed under the names supplied. 'Splitting' was always more fashionable than 'lumping' in the old USSR but we try to indicate affinities.

- 106.950 : ACANTHUS SPINOSUS var. SPINOSISSIMUS** \* No data. A horticulturally, if not botanically, distinct race of this fine, long-lived perennial from the E Aegean area. Close clumps of deeply cut, dark green foliage, bristling with stiff, white spines. Spires, over 1m. high, of hooded, purplish, white-lipped flowers in summer. For a well-drained soil in a hot, dry site in the UK. . (6) **B**
- 113.611 : ACONITUM SEPTENTRIONALE from WHITE FORM** (*A. vulparia* group) \* No data. From the creamy white clone, grown as 'Ivorine', of this subarctic species, distributed from Norway into Russia. Earliest of all monkshoods, starting to flower here towards the end of May, with stiff upright stems, less than 1m. high, densely set with deflexed, narrow helmets, rising above the neat clumps of darkest green, coarsely cut leaves. Seedlings may produce the normal, deep violet form as well as whites. . (20+) **B**
- 114.120 : ACONITUM VULPARIA** (*A. lycoctonum* subsp. *vulparia*) No data. A fine summer-flowering, central European perennial with branching stems about 1m. high carrying racemes of deep ivory helmets with curved spurs in summer. This is from Bob Brown's excellent clone 'Dark Eyes' with black stamens and stems and the deeply cut leaves even darker than usual. . . . . (20+) **B**
- 127.710 : ALKANNA ORIENTALIS** \* No data. A bristly perennial, native from S Greece into SW Asia and suitable for a hot, dry, sunny site in the UK. About 40cm. high with undulate, oblong, greyish leaves and dense racemes of yellow flowers. . . (10+) **B**

## Allium : onions galore

While it has its devotees, many gardeners do not fully appreciate the qualities of this large & diverse genus, spread throughout the N Hemisphere with its main centre in Europe & W Asia & another in western N America. We offer a range from the latter area later in this list. All listed here enjoy a well-drained site in full sun in the UK. Most tend to be more successful in alkaline soils in the more continental climate of the E of Britain, rather

than in the wetter, more equable climate of the W but this is quite an adaptable genus on the whole. Though strictly speaking winter-growers, many flower & mature their seed late, so they fit in with summer-growing species for winter-sowing. Although many are easily grown, accommodating garden-plants, there are no species listed is likely to become aggressive under average garden conditions.

- 130.110 : ALLIUM AKAKA** \* No data. From a particularly good, deep pink form grown by Alan Edwards. One of the dwarfers & most western members of Sect. *Acanthoprason*, distributed from E Turkey & NW Iran, N into Armenia & Azerbaijan, frequently on loose shale or scree slopes. One or two, broad, glaucous leaves & short, stout stems with splayed shaving-brush umbels of many, campanulate flowers. Always attractive but often a pale or grubby shade of mauve. Bulb-frame or pot in the UK. . . . (10+) **D**
- 130.600 : ALLIUM ATROPURPUREUM** \* No data. A handsome, 50cm. high plant from SE Europe & Turkey. Linear basal leaves & many-flowered umbels of starry flowers in deep, rich, red-purple on stems of about 50cm. . . . . (15+) **A**
- 131.400 : ALLIUM CAROLINIANUM** \* No data. Most material in cultivation appears to originate from the KBE 268 coll. at about 4000m. on the limestone of the Razbal Gali pass, Kashmir, in 1983. Attractive & little-known, red-purple species. . . . (15+) **C**
- 131.550 : ALLIUM CHAMAESPATHEUM** Greece, Messinia, Pilos. 50m. Open, rocky hillside. B. Mathew coll. (An odd, 30cm. high, autumn-flowering bulb from the limestones of S Greece & Crete. The upper leaf sheathes the stem up to the rounded umbel of cylindrical, white flowers and projects above it in a most distinctive fashion. Possibly for the bulb-frame in the UK.) . . (10+) **B**
- 132.810 : ALLIUM INSUBRICUM** \* No data. This is "*A. narcissiflorum* of gardens". Both species are closely related and equally local in the wild : *A. narcissiflorum* with sugar-pink, erect flowers in the French Alps ; *A. insubricum* from above Lake Como in N Italy with drooping bells in a lovely soft, dim wine-purple. Choice, slow-growing but not difficult in limestone scree. . . (10) **C**
- 132.950 : ALLIUM JESDIANUM** Tadjikistan, Seravschan ridge, Shing valley. (A fine, variable, Central Asian, bulbous species, usually about 1m. high & long confused with *A. rosenbachianum*. Janis Ruksans has named a most distinct, early flowering clone, 'Shing', from this valley : extremely dense, dark purple umbels on 70cm. stems & yellowish-green foliage.) . . . . . (15+) **C**
- 134.060 : ALLIUM MYRIANTHUM** \* Turkey, Denizli, Pamukkale. 400m. Ex a N. Stevens coll. (A type-locality coll. of this distinct, E Mediterranean, 80cm. high, plant with dense mop-heads of numerous, tiny, white flowers on purple pedicels.) . . . (20+) **A**
- 134.100 : ALLIUM NARCISSIFLORUM** \* France, Hautes-Alpes, Pic de Gleize. 2000m. Unstable, limestone screes along S-facing side of summit-ridge. (From "high up in the most awesome shelves of the limestone Alps of Piedmont," this is "the glory of its race" according to Farrer. 15cm. stems carrying umbels of erect (not drooping as in *A. insubricum*) sugar-pink flowers.) . . . (10) **D**
- 134.200 : ALLIUM NEVSKIANUM** \* Tadjikistan, Varsob Gorge, near Chinoro. Ex RM 82-72 (In Sect. *Acanthoprason* (like *A. akaka* & *A. karataviense*). Large umbels of rich, dusky, pinkish-red flowers. Grown outside by some in the UK.) . . . . (10) **E**

# Species from Europe, W Asia & N Africa :Seeds from Jim & Jenny Archibald

- 134.410 : ALLIUM OBLIQUUM** \* Russia, Siberia, Sajon range. (A fine, ball-headed species distributed through Central Asia into S Siberia. One of the last of the taller species to flower, up to 1m. high with dense, almost spherical, umbels of many, cup-shaped, pale-yellow flowers with projecting yellow stamens. A delicate contrast to the purple usual in this group.) . . . . . (20+) C
- 134.801 : ALLIUM ORIENTALE** \* Turkey, Antalya, Irmasan gecidi. 1530m. Openings in *Abies* forest on limestone. (A worthwhile form of this variable, 50cm. high species. Rounded umbels of white flowers with lilac-purple anthers & filaments.) . . . (10+) B
- 136.805 : ALLIUM SCHUBERTII** \* No data. One of the most spectacular species with enormous rounded heads of purplish flowers up to 40cm. across on 50cm. stems. The flower-stalks vary greatly in length, giving an explosive, starburst effect. As attractive in seed as in flower, it dries beautifully. From Syria & Israel, it is best grown in a bulb-frame in the UK. . . . . (15+) C
- 139.000 : ALLIUM SUBVILLOSUM** \* No data. A W Mediterranean plant from maritime sands & grasslands, about 50cm. high, with many-flowered, hemispherical umbels of cup-shaped, pure-white flowers. Warm site or bulb-frame in the UK. . . . . (20+) B
- 138.980 : ALLIUM SUWOROWII** \* No data. A fine, very hardy, Central Asian bulb with stems up to 1m. high carrying hemispherical umbels of many rosy-violet stars with linear segments which reflex & twist after flowering. . . . . (20+) A
- 140.510 : ALTHAEA CANNABINA** \* No data. An elegant, airy perennial hollyhock from S and E Europe. Pink mallow-flowers on long wiry, axillary stems or in terminal panicles can rise to about 1.5m. above the lobed, downy leaves. . . . . (15+) A
- 146.010 : AMSONIA ORIENTALIS** (*Rhazya orientalis*) \* No data. Only recorded from one or two lakeside sites in Bursa & Balikesir provinces in NW Turkey & from winter-wet marshes on the coast of Thrace in NE Greece. Thought to be "near extinction" in nature but well established in UK gardens. A good, long-lived perennial, easily grown in a well-drained, sunny site in the UK, though not so easily obtainable. Woody-based clumps send up 50cm. stems, clad in narrow, grey-green, willow-like leaves & carrying terminal cymes of starry, long-tubed, soft-blue flowers over a long period in summer. . . . . (10) C
- 155.050 : ANDROSACE ALPINA** from **COMPACT FORM** \* No data. Seed from Jim Almond of an outstanding variant of this calcifuge European high alpine & one sought after by alpine-house specialists as, unlike most forms, which tend to straggle in cultivation at low altitudes, this remains tight. Its origins are obscure but we have seen photographs of compact plants taken in Austria by Lionel Bacon. Apart from its habit, this is quite typical *A. alpina* with rich-pink flowers from green rosettes (10+) E
- 157.010 : ANDROSACE VANDELLII** \* No data. A classic alpine-house plant from non-calcareous cliffs in the S Alps, the Pyrenees & the Sierra Nevada. Tight, symmetrical, silvered cushions cover themselves with white, yellow-eyed flowers. . . . . (15+) C
- 171.700 : AQUILEGIA AUREA** \* Bulgaria, Rila Mts., Malgovitsa valley. Ex an A. Edwards coll. (The only yellow-flowered European species. It is a rare plant in cultivation & it is quite a few years since we last listed this endemic of Bulgaria & adjacent Macedonia. About 30cm. high with uptilted, yellow flowers with short, hooked spurs.) . . . . . (15+) E
- 172.409 : AQUILEGIA DISCOLOR** \* Spain, Picos de Europa. Ex a V. Horton coll. (An exquisite endemic of this limestone-range. 1 or 2, bicoloured flowers on 10cm. stems., blue sepals surrounding the spurred white petals. Scree or trough.) . . . . . (20+) B

## Arum : the spectacular & the demure

- 194.752 : ARUM ALPINUM** \* Greece. Ex Christian, Elliott & Hoog 806. (Hardy European species with green spathes.) . . (8) B
- 194.780 : ARUM APULUM** \* No data. A relative of *A. nigrum*, endemic to the hills of Puglia at 300-400m. near the southern heel of Italy. "Attractive but little-known" writes Peter Boyce. Erect green spathes with purple interiors. . . . . (8) E
- 194.850 : ARUM BESSERIANUM** \* A very little known species, described from the NW Ukraine and once thought to be allied to *A. orientale*. In fact it seems very close to *A. alpinum*. As such, it is essentially a plant for the collector. . . . . (8) D
- 195.073 : ARUM CONCINNATUM** (*A. nickeli*) \* No data. Ex a 1960 Furse & Syngé coll., possibly in Turkey. (Foliage can be as much as 1m. high in a well-grown plant & the huge, yellowish-spathes, just rimmed with a purple tint, almost 30cm. long. From Mike Tucker's plant which supplied the material for Plate 3, in the 'Genus Arum'. Needs a warm, sheltered site in the UK.) . . . (8) C
- 195.150 : ARUM CYRENAICUM** \* No data but from the Libyan population. Large spathes, green outside & purplish rose inside with deep purple spadices. A plant of the scrub along the 'green belt' in Cyrenaica, NE Libya. Safest protected from frosts. . . (8) C
- 195.159 : ARUM DIOSCORIDIS** (var. *dioscoridis*) Greece, Simi, NW of Emporios. 110m. Among scrub in terra rossa on limestone ridge. M. Denney 612 & 613. (A rare opportunity to acquire material from one of the few E Aegean island populations of this predominantly S Turkish plant. Peter Boyce mentions the disjunct occurrence of *A.d.* var. *cypricum*, otherwise a plant of Cyprus & Syria, on Rhodes & adjacent islands, like Simi (improbably along with *A.d.* var. *dioscoridis*). *A.d.* var. *cypricum* has a black-purple spadix and the pale-green spathes stained purple only in the basal part. Anticipate considerable exciting variation.) . . . (10+) C
- 195.510 : ARUM ELONGATUM** (ssp. *elongatum*) \* No data but authentic material from the plant used for the illustration in Peter Boyce monograph, 'The Genus Arum'. "An attractive species", distributed around the Black Sea & hardy in the UK. Related to *A. orientale* with an elegant, elongated pale-green spathe, stained with purple around a maroon spadix . . . . . (8) D

- 195.600 : ARUM EUXINUM** \* No data. A very hardy, slow-growing, dwarf species from cold, wet, NW Turkey. It resents heat & drought in summer. Compact, hastate, dark-green foliage & stubby, hooded purple-margined spathes. . . . . (5) E
- 196.610 : ARUM ORIENTALE** (subsp. *orientale*) \* No data. Mike Tucker's fine form of the genuine species with extremely large, erect, boat-shaped, dark purple-brown spathes with dull purple spadices and deep-green, floppy leaves. The species as a whole, widely distributed in E Europe & around the N of the Black Sea, is accordingly variable. It is seldom seen in cultivation in any form though most are excellent garden-plants in the UK, being native to similar habitats to *A. maculatum* in cold climates.) . . . (8) E
- 196.860 : ARUM PALAESTINUM** \* No data. A magnificent species from Syria, Lebanon & Israel but unsuited to the cold, wet climate outdoors in most of the UK. No trouble with us grown with unheated protection, forming large clumps of rich-green, sagittate leaves with huge, 50cm. high spathes, solid, velvety darkest maroon-purple inside & reflexing back around the erect, stout, black-purple spadices. Sweet-scented & more or less like a large, maroon-black version of *A. creticum*. . . . . (8) E
- 200.020 : ASARUM EUROPAEUM** \* No data. A woodlander with running underground stems sending up rounded leaves with strange flowers at ground-level, not so large as some N American or E Asian species but still intriguing. . . . . (15+) B
- 202.800 : ASPERULA ORIENTALIS** \* No data. A very fine blue-flowered annual distributed in the steppe & oak scrub areas of E Turkey & W Iran, S into Syria. About 25cm. high & as much across with angled stems, whorled with oblong leaves, carrying heads of bright-blue, tubular flowers, surrounded by a ruff of narrow bracts. Will sow itself, if suited in a dryish, sunny site. . (50+) A
- 220.705 : ASTRANTIA MAXIMA** (subsp. *maxima*) \* No data. An exquisitely lovely meadow-plant from the Caucasus & neighbouring NE Turkey. A little dwarfier with much larger heads than *A. major*, in green-veined, soft rose-pink & carried singly on 60cm. stems over a very long period in summer. The running-clumps with three-lobed, basal foliage enjoy a cool, rich soil . . . . . (20+) A
- 224.270 : ATHAMANTA TURBITH** subsp. **HAYNALDII** \* No data. A slow-growing member of the *Umbelliferae* from the limestones of Albania & adjacent areas & a delightful little, permanent perennial for a hot, dry site. Highly regarded by Wilhelm Schacht. Bright-green foliage cut into linear threads with delicate white umbels on 30cm. stems. . . . . (20+) C
- 224.300 : ATHAMANTA VESTINA** \* No data. Included under *A. cretensis* in 'Flora Europaea' & considered to be an eastern intermediate of it with *A. turbith* subsp. *haynaldii*, to which Tim Ingram compares it as a robust version. Fine filigree mounds of bright-green foliage & many, dainty pure-white, 60cm. umbels. A good, choice perennial for a dry site. . . . . (15+) B
- 245.050 : BUPLEURUM BENOISTII** \* Morocco. Ex a Gothenburg Botanic Garden expedition to the Atlas, this is a small clump-forming perennial with narrow, glaucous, evergreen leaves and stems, about 30cm. high, with sprays of little, *Astrantia*-like, yellow umbels, which deepen to orange shades as they age. Intriguing and hardy with Tim Ingram (Kent, UK) . . . . . (15+) D
- 245.090 : BUPLEURUM FRUTICOSUM** \* No data. A shrubby, Mediterranean species just on the borderline of hardiness in the UK. About 2m. high with umbels of acid-yellow flowers against the leathery, blue-green foliage. Good in maritime areas . (20+) B
- 245.180 : BUPLEURUM SALICIFOLIUM** \* No data. Endemic to cliffs at up to 1000m. in the western Canary Islands, this will tolerate a few degrees of frost but must be considered tender in most of the UK. An attractive small shrub with narrow, linear, grey-blue leaves and umbels of green-yellow flowers. Originally from stock grown at the Chelsea Physic Garden, UK. . . . . (20+) C
- 252.700 : CAMPANULA CARPATHA** \* Greece, Karpathos. Shady, limestone crevices. Ex a H.&I. Barton coll. (A superlative alpine-house species, seldom without a profusion of its large, elongated bells in soft blue-violet against its downy foliage. Introduced by Peter Davis in 1950 & rapidly lost, this is from the Barton's 1983 re-introduction which we maintain here. This choice long-lived, Karpathos endemic, has been disadvantaged through the similarity of its name to that of the easy *C. carpatica*.) . . . . . (30+) D
- 253.600 : CAMPANULA COLLINA** \* Turkey, Trabzon, Soganli Dag. 2300m. Open meadows. (One of the most adaptable & worthwhile Turkish species for the open rock-garden in the UK. About 20cm. high with profuse, violet bells.) . . . . . (20+) B
- 256.800 : CAMPANULA INCURVA** \* Greece, Magnisia, Oros Pilio, above Portaria. 1200m. Mica-schist cliffs. (A stunning monocarpic species, narrowly endemic to this area. Its widely radiating, prostrate, branching stems, which in nature spread over the face of the cliff, do need space but the profusion of huge, ice-blue 'Canterbury Bells' is breathtaking.) . . . . . (30+) B
- 260.210 : CAMPANULA PATULA** subsp. **ABIETINA** \* No data. A comparatively dwarf, stoloniferous perennial in an attractive and variable species-group, seldom seen in cultivation. This race is centred on the mountains of Romania. Rosettes of bright-green leaves send up wiry stems of about 20cm. bearing several upward-facing, open, starry flowers in rich purple. . . . . (50+) C
- 294.550 : CHAEROPHYLLUM HIRSUTUM** from **PINK FORM** From the raspberry-pink form of this umbellifer from the mountain-meadows of S Europe. A robust perennial with cut, downy, soft-green basal foliage and 1.2m. stems with flat umbels of many tiny pink flowers. In character in the wild-garden or cottage-garden & well-behaved with us in good, moist soil. (20+) B
- 325.850 : CONVOLVULUS SABATIUS** \* No data. Beautiful lavender-blue wall-plant from the dry limestones of Sicily. . (8) C
- 331.950 : CORYDALIS NOBILIS** \* No data. A sturdy, long-lived, tap-rooted perennial about 50cm. high and rated by Liden & Zetterlund in their monograph as "probably the most conspicuous & eye-catching species in the genus." Dense heads of yellow, black-tipped flowers rise above the lush, deeply divided, glaucous foliage in late spring & by late summer the whole plant is dormant. An extremely hardy Siberian plant, distributed from the Altai to the Tien Shan & naturalized in Sweden. . . . . (10+) C



- 372.100 : CYNARA HYSTRIX** (*Cynara baetica* subsp. *maroccana*) \* Morocco, Middle Atlas Mts., above Ifrane. 1700m. Open, stony areas on limestone. (Maintained from seed we collected in 1962, this remains little-known in cultivation as it seldom sets much seed. Desired by almost all who see it & one of the most striking thistle-like plants with 50cm. stems of large heads of royal-blue flowers, surrounded by lilac-pink phyllaries, elongated into stiff, curved spines. In nature, the deeply cut foliage vanishes before it flowers in summer. No trouble & seems to live forever (without increasing much vegetatively) in a really hot, sunny, dry site.) . (5) **E**
- 403.400 : DIANTHUS SERRATIFOLIUS** \* Greece, Messinia, S of Pilos. Ex an A. Edwards coll. (This endemic of S Greece has proved a great success in Alan Edwards Surrey garden, flowering all summer into autumn. Its trailing, woody stems carry a succession of pink flowers with deeply toothed petals. Full sun and good drainage - not for cold, wet gardens.) . . . . . (20+) **B**

## Digitalis : a diversity of easy-going foxgloves

- 407.401 : DIGITALIS FERRUGINEA** (subsp. *ferruginea*) \* Greece, Trikala, above Panagia to Katara. 1500m. Margins of *Pinus* woodland. (Long, dense racemes of yellowish, orange-brown-netted flowers with projecting lips, on 1.5m. stems.) . . (50+) **A**
- 407.804 : DIGITALIS GRANDIFLORA** \* France, Alpes-Maritimes, Vallon de Valmasque. 1700m. Among scrub. (Like a dwarfed, soft yellow version of *D. purpurea* but, unlike this, a reliable perennial. Easy anywhere in the UK in light shade.) . . . . (50+) **A**
- 408.300 : DIGITALIS LAMARCKII** \* Turkey, Gumushane, Vauk Dagi, Guvercinlik. 1800m. Open, stony slopes. (An outstanding perennial endemic to NE Turkey & perfectly distinct from *D. lanata* in this area. Clumps of narrow, dark-green leaves & 50cm. stems of large, soft-brown, baggy flowers with huge, prominent, white lips. Long-lived in a well-drained site in full sun.) . . . (50+) **B**
- 409.402 : DIGITALIS OBSCURA** \* Spain, Soria, Puerto del Pinar. 1100m. Among limestone debris on open slopes. (A shrubby perennial with narrow, shiny foliage & amber foxgloves, yellow marked with rust-red inside. This population was only 20-30cm. high in the wild but is somewhat taller in cultivation. A most distinct Spanish endemic for a dry, sunny situation.) . . . . . (50+) **B**
- 409.610 : DIGITALIS PARVIFLORA** \* No data. A leafy, 60cm. perennial from the mountains of N Spain. In the Sect. *Tubiflorae*, like *D. lutea* & *D. viridiflora*, with long, dense, woolly racemes of tubular, red-brown, purple-veined flowers. . . . . (50+) **A**
- 410.000 : DIGITALIS THAPSI** \* Spain, Avila, Sierra de Gredos, Puerto del Pico. 1300m. Granite fissures & in loose, granite grit on steep slopes. (Another Iberian endemic, quite close to *D. purpurea* but a good perennial in a sunny, well-drained place or lime-free scree-bed. Leaves & stems all covered in yellowish indumentum & with many, large, downy, sugar-pink flowers.) . . . (30+) **B**
- 412.180 : DIONYSIA INVOLUCRATA** \* Tadjikistan, Pamir-Alai, Khandar river gorge. 1000m. & over. Ex J. Halda colls. (This & *D. aretioides* have proved the most amenable of an intractable genus. Still a plant only for the experienced alpine-house grower. Cushions of sticky-leaved rosettes with umbels of sugar-pink flowers. A little hand-pollinated seed from Jim Almond) (15+) **E**
- 432.300 : ECHIUM RUSSICUM** \* No data. A striking plant, almost 1m. high, from the dry grasslands of E central Europe, N into Russia. Spike-like inflorescences of many rusty-red flowers with the stamens exerted on long, red filaments. A bristly, short-lived perennial, evocatively illustrated, growing in Russian *Stipa*-steppe, in Rix & Phillips 'Perennials' Vol. 1., p. 170. . . . . (15+) **B**

## Eremurus : the imposing foxtail lilies

The giant asphodels, a magnificent genus of hardy plants spread from the Lebanon & Turkey through to the W Himalaya but centered on Central Asia, are not the easiest of perennials to manage in UK gardens. These are steppe-plants, adapted to a dry climate of extreme cold in winter and extreme heat in summer. While tolerant of very low temperatures when dormant their new growth is vulnerable if their noses emerge too early, so spring growth may need some protection both from late

frosts and slugs. Well suited to gardens in the drier, more continental climates of central Europe or the Rocky Mountain states of the USA, they can be very successfully grown in a well-drained, sunny situation in the UK, especially in the drier east. Several species provide well-established displays at the RBG, Edinburgh, in Scotland. Their massive, fleshy, octopus-like roots grow slowly but most will flower in about 4 years from seed, by far the best way to establish them.

- 444.005 : EREMURUS COMOSUS** \* No data. From Central Asia & adjacent N Afghanistan & seldom seen in cultivation. Fascinating rather than showy. Slender racemes of brownish flowers, emerging from papery white bracts, on stems over 1m. high. . (10) **B**
- 444.044 : EREMURUS FUSCUS** \* No data. Another intriguing brownish-flowered species, originally from Tashkent BG. (10) **B**
- 444.060 : EREMURUS HIMALAICUS** \* No data. A magnificent NW Himalayan species with 2m. spires packed with white flowers. This is one of the earliest of this genus to flower in UK gardens, where it is usually one of the more reliable ones. . . . (10+) **B**
- 444.067 : EREMURUS OLGAE** \* No data. A glorious plant, native to N Iran, Afghanistan & adjacent Central Asia, flowering quite late in summer with stiff stems towering to well over 2m. and carrying massive, columnar racemes of large, pale pink flowers with a dark central stripe on each segment, opening on long pedicels from deeper pink buds. Pure class. . . . . (10) **C**

- 444.085 : EREMURUS ROBUSTUS \*** No data. Equally imposing Central Asian with towering, soft-pink racemes. 2.5m. (10) **B**
- 444.086 : EREMURUS ROBUSTUS from WHITE FORM \*** No data. Later flowering white than *E. himalaicus*. 2.5m. (10) **B**
- 444.101 : EREMURUS SPECTABILIS \*** Turkey, Kahramanmaras, SSE of Goksun. 1550m. (Spires of green-white flowers with exerted orange-brown anthers. 1.5m. In spite of its name, not actually so spectacular as some but intriguing.) . . . . . (10) **C**
- 444.150 : EREMURUS STENOPHYLLUS** (subsp. *stenophyllus*) (*E. bungei*) \* No data. Cylindrical racemes of brilliant yellow flowers, about 1m. high. A species spread from N Iran through Central Asia to W Pakistan & usually the easiest. . . . . (10+) **B**
- 475.250 : EUPHORBIA CERATOCARPA \*** No data. A tall, 1m. high, perennial from S Italy & Sicily. Smooth, pointed, lanceolate leaves with many branching flower-stems from the leaf-axils. Needs a well-drained place in full sun in the UK. . . . . (10+) **C**
- 475.620 : EUPHORBIA CHARACIAS subsp. WULFENII \*** No data. Seed from a fine, strong form of this splendid, shrubby perennial, mainly distributed on the limestones down the Adriatic coast. Striking, cylindrical heads of greenish yellow rise above the evergreen, blue-grey foliage in spring. Usually reliable in a well-drained, sunny site in most UK gardens. . . . . (15+) **B**
- 481.503 : EUPHORBIA RIGIDA** Turkey, Antalya, Bey Da., between Kemer & Ovacik. N. Stevens coll. (Much esteemed member of Subsect. *Myrsiniteae* with erect, sculptured stems of spirally arranged, pointed, fleshy leaves, about 30cm. high. In spring, its flat acid-yellow heads stand out against the blue-grey evergreen foliage. In this area of Turkey it often has the raylet leaves flushed with orange and pink in bud and again later, as they mature. Usually perfectly hardy in a hot, dry site in the UK.) . . . . . (10+) **C**
- 485.110 : FERULA COMMUNIS subsp. GLAUCA \*** No data. A distinct variant of the giant fennel of the Mediterranean area with greyish leaves, distinctly silvery glaucous beneath. One of the most spectacular members of the *Umbelliferae*, towering to 2m. or more high with its huge, yellowish umbels on stout stems rising above the great mounds of finely-cut foliage. . . . . (10) **B**

## Galanthus : 1999 collections from the Ukraine only just received

- 509.209 : GALANTHUS PLICATUS** (subsp. *plicatus*) Ukraine, Krim, near Yalta. (The type-race of this fine snowdrop has two populations, one in E Romania & the other here in the Crimea. This is the one which has given rise to fine garden cultivars like the wild-collected 'Warham', which reputedly came to England during the Crimean War : a pleasant thought.) . . . . . (10+) **C**
- 509.609 : GALANTHUS WORONOWII** Ukraine, near Sochi, Black Sea coast. (Confused with *G. ikariae* for many years, this has been given recognition as full specific level in the most recently published monograph on this confusing genus. Enthusiasts should be only too pleased to acquire authentic, wild-collected material of this, so we have listed these collections without delay. Unfortunately this important seed arrived after our last list of 'bulb' seeds had been sent out. Rather than refrigerate it until summer 2000, we felt it is most likely to benefit from sowing without delay, even if it may not appear before next winter.) . . . (10+) **D**

## Gentiana : white and yellow and pink and blue

- 515.651 : GENTIANA ASCLEPIADEA var. ALBA \*** From the white form of this graceful species. Usually we find white gentians disappointing anomalies but this with its paler foliage stands out even more in the shady places which it enjoys. . . . . (50+) **B**
- 515.652 : GENTIANA ASCLEPIADEA from PALE BLUE FORM \*** From a beautiful paler, turquoise-blue form of the elegant willow gentian, one of the loveliest of autumn-flowering, herbaceous plants. Slow from seed but gradually builds up clumps of 60cm. stems. Blue trumpets cluster in the axils of the pointed, lanceolate leaves from late summer until the frosts. A species of the moist mountain woodlands of central Europe, E along N Turkey to the Caucasus, well-suited to semi-shade in UK gardens.) (50+) **B**
- 515.653 : GENTIANA ASCLEPIADEA from PINK FORM \*** A substantial number of seedlings should flower pink . . (50+) **B**
- 516.720 : GENTIANA BURSERI** (subsp. *burseri*) \* No data. The type-race, endemic to the Pyrenees, one of the robust perennials in Sect. *Gentiana*, possibly closest to the Alpine *G. purpurea*. Rosettes of pointed leaves send up stems to about 50cm., carrying large clusters of yellow, bell-shaped flowers, often dotted with brown. A good, permanent, little-grown hardy plant.) . (50+) **B**
- 517.620 : GENTIANA DINARICA \*** No data. A classic "*G. acaulis*" in the limestone race from central Italy & the Balkans. From Simon Bond's splendid form, which originated as either a collection or selection by the unacknowledged Scottish king of these European alpine, trumpet species, Jimmy Stitt. Generously reliable with its stunning blue flowers on glossy-leaved pads. (20+) **B**
- 518.400 : GENTIANA GELIDA \*** Turkey, Gumushane, Kop Dag. 2300m. Moist to dryish turf. (A handsome, late-flowering species, superficially rather like *G. septemfida* but with creamy yellow flowers, deeper yellow striped with green outside. Not too easy to grow but but successful with some. This seed is from Dinah Batterham who grows it well outside in Dorset, UK.) . . . (20+) **D**
- 518.850 : GENTIANA LUTEA \*** No data. The tall yellow gentian of the S European ranges. Beautiful, large basal leaves & erect, 1.5m. stems, whorled with starry yellow flowers. A magnificent, very long-lived perennial but very slow from seed. . . . . (20+) **B**
- 519.500 : GENTIANA PARADOXA \*** Georgia, Abkhazia. (A relict surviving in a few places on the limestones between Sochi & Sukhumi at around 1300m. Unlike any other. Erect, 20cm. stems, clothed in linear, verticillate leaves & each bearing 1 or 2 trumpets, olive-green outside with pale-blue plicae & lobes. Not too difficult outside but choice enough for the alpine-house.) . (50+) **C**



## Geranium : a pain to collect but a pleasure to grow

It is only since we started growing & collecting cultivated seed in Wales that we have been able to list a small range of this popular & adaptable genus. Collecting wild seed in sufficient quantity to list is exceptionally difficult, as only one or two seed-heads ever seem to be ripe at a time. In cultivation, the same problem exists but can be solved by regular visits, every day or so, over a period of weeks. The existence of a large number of (often very similar) cultivars testifies to the current popularity of the genus and to its capacity for hybridization. All

of the following are open-pollinated and some seedlings may well show variation through hybridization but these are likely to be exceptions rather than a general rule. One must assume that the genus as a whole is of very ancient origin, as some of the 400 or so species occur in the cool-temperate areas of every continent. We plan to gradually increase the range we list from all areas. The majority of the hardy, perennial, herbaceous ones are easily grown, long-flowering garden-plants in the UK and almost all the following fall into this category.

- 526.400 : GERANIUM MADERENSE \*** No data but our stock is traceable back to original material sent from Madeira by Major Pickering to our old friend Trevor Crosby, at that time Curator of the Leeds University Botanic Garden., before it had been described as a new species. At about 1.5m. high, the largest *Geranium*, with trunk-like stems, propped up by the old, reflexed leaf-stalks, bearing an immense mound of purple-pink flowers. Essentially a winter-growing plant, it is really safest, frost-free under glass in the UK but we grew it well outside in Dorset for a time & it is certainly worth attempting in milder coastal areas. . . . . (10+) **B**
- 526.630 : GERANIUM PALMATUM (*G. anemonifolium*) \*** No data. The other Madeiran endemic in Sect. *Anemonifolia*, this lacks the trunk-like stem & persistent, propping leaf-stalks of *G. maderense*. Inflorescences, over 1m. high, with hundreds of purple-rose flowers on stems covered with purple, glandular hairs. Possible in a sheltered site outside in S & W Britain. . . . . (10+) **B**
- 526.800 : GERANIUM PLATYPETALUM \*** Georgia. No further data. Ex a R. Lancaster coll. (From a clone collected by Roy Lancaster & named 'Georgia Blue' but seems quite typical of this species. Darkly veined, rich violet-blue flowers in midsummer on plants of about 30cm. Rounded, hairy, lobed leaves, less cut than the allied *G. ibericum*. Excellent & long-flowering.) (10+) **B**
- 526.920 : GERANIUM PRATENSE f. ALBIFLORUM \*** No data. From a vigorous, 1m. high, white-flowered form of our native meadow cranesbill, a species which extends E to the Himalayas. Fine in the wild-garden with its deeply cut foliage. . . (10+) **A**
- 526.925 : GERANIUM PRATENSE from PINK FORMS** . . . . . (10+) **A**
- 526.926 : GERANIUM PRATENSE from PALE BLUE FORMS** . . . . . (10+) **A**

## G. psilostemon : these forms from Artvin are really outstanding

- 527.000 : GERANIUM PSILOSTEMON \*** Turkey, Artvin, Genya Dag. 1700m. Wet meadow in *Picea* woodland. (Our favourite among the larger ones with its stunning, luminous, magenta flowers, darkly veined & with glossy black centres. Up to 1m. high with large, cut, basal leaves, which emerge from shiny, crimson sheaths in spring & colour to orange & scarlet in autumn. We did not really appreciate just how good the forms we collected above Artvin are until this year. Many are much more compact than any we had before. The colour is intense and the flowers go on & on until frosted. Even if you grow this already, try these.) . . . . (10+) **B**
- 528.220 : GERANIUM SANGUINEUM \*** No data. Mainly from Max Frei's selected clone 'Elspeth'. A long-flowering, reliable species, widespread through Europe to the Caucasus, usually in dryish, limestone habitats but does not resent our acid soil in a wet climate. A bushy growth of much-branched stems, clad in deeply cut leaves, with a profusion on bright magenta-pink flowers. (10+) **A**
- 528.500 : GERANIUM SYLVATICUM \*** Greece, Drama, Falakro. 2200m. Moist meadow. (From a fine form of this widespread European species. Good rose-pink flowers with large white centres on erect, leafy plants, about 1m. high.) . . . . . (10+) **B**
- 528.520 : GERANIUM SYLVATICUM \*** No data. From Amy Doncaster's dwarfed, blue selection - rich lavender-blue flowers with tidy white centres on plants of about 60cm. These two may have crossed but the seedlings should all be worthwhile. . . (10+) **C**
- 554.050 : HEGEMONE LILACINA** Kazakhstan, Tien Shan. 2900m. H. Fuchs coll. (A few seeds only left of this exquisite, dwarf *Trollius*-relative, from the high ranges of Central Asia. It can be almost semi-double in appearance and flushed with a lucent, ethereal lavender-blue, on 10cm. stems above cut, lobed leaves. From "wet, cold, alpine meadows" "a fairly heavy, perpetually moist soil." "No pains would be too much to make it happy" wrote Farrer of this "capricious little creature", "the jewel of all".) . . (15+) **F**
- 565.005 : HEMEROCALLIS LILIOASPHODELUS** Russia, near Tomsk. (Wild-collected, Siberian seed of this elegant species, long-cultivated but rarely seen in gardens, though it is the only European species in an otherwise E Asian genus. Occurring sporadically eastwards from NE Italy, it very seldom sets seed in SE Europe. As the species is self-sterile, one suspects most western colonies are derived from single clones. Much more graceful than the bloated hybrids of unscented *H. fulva* with lily-like, bright yellow flowers on 1m. stems. It has "an unforgettable fragrance" and "great quality and charm" according to G.S. Thomas.) . . . . . (15+) **C**
- 582.510 : INULA MAGNIFICA \*** No data. A splendid 2m. high Caucasian, which needs space in moist, rich soil. "Superb and dignified" with "heads of brown buds opening to large, vivid deep-yellow daisies" writes Graham Stuart Thomas. . . (20+) **B**

# Iris : both wild & bearded and smooth & elegant

Almost all the following fall into two groups of this diverse genus : the bearded irises (Section *Iris*), most of which can be grown in a well-drained site in full sun outside in the UK but some of the Turkish species are not so easy & merit bulb-frame conditions ; the spurias (Series *Spuriae*), which usually make

good, easy garden-plants in most of Europe & N America. The latter tend to be plants from areas with cold winters & hot, dry summers, though often from habitats which are very wet in spring, as well as in scrub & grassland. The best reference for all the species is 'The Iris' by Brian Mathew.

- 583.900 : IRIS ATTICA** (Sect. *Iris*) \* Greece, Viotia, Oros Parnassos. 1200m. Clay in limestone pockets. (Mainly from pale yellow forms with some blues & purples. The dwarfest bearded iris, ideal for an alpine-house pan with frequent repotting.) . . . (8) C
- 588.020 : IRIS GRAMINEA var. PSEUDOCYPERUS** (Ser. *Spuriae*) \* No data. A robust race of this easy S European plant. Fine, red-purple flowers, white-pencilled & yellow-shaded, nestle in the 30cm. clumps of broad, rich-green, glossy foliage. . (10+) B
- 590.100 : IRIS JUNONIA** (Sect. *Iris*) \* Turkey, Antalya, Gidengelmez Dag, S of Madenli. 1900m. Fissures on limestone-cliff (A very local bearded iris from high altitudes in the Taurus. Here, in the W of its distribution it inclines towards the W Turkish *I. purpureo-bracteata*, in its somewhat inflated, purple-tinged bracts. Pale yellow, tinged with purple in this form. 30-40 cm. high.) . (5) C
- 590.210 : IRIS KERNERIANA** (Ser. *Spuriae*) \* No data. An elegant N Turkish endemic forming clumps of very narrow leaves, above which rise creamy-yellow flowers on stiff, slender, 30cm. stems. Choice but reliable in a sunny, well-drained site.) . . . (10+) C
- 590.405 : IRIS LACTEA** (Ser. *Ensatae*) Russia, near Tomsk. (Wild, Siberian seed of this widespread species, the only member of its series. Distributed through Central Asia, S to the Himalayas & E to NW China & Korea, this is variable and rejoices in many synonyms (this seed was collected as *I. biglumis*). Clumps of tough, narrow foliage and several, fragrant, purple-blue flowers on stems of about 30cm. in early summer. A very hardy, drought-resistant species, usually easy in an open site.) . . . . . (15+) B
- 591.350 : IRIS ORIENTALIS** (Ser. *Spuriae*) (*I. ochroleuca*) \* No data. An easily grown, imposing species of 1m. or more, native to saline marshes from NE Greece into Turkey. Pure-white flowers with striking yellow blotches on the rounded falls . . (15+) A
- 597.800 : IRIS SINTENISII** (subsp. *sintenistii*) (Ser. *Spuriae*) \* Greece, Ioanina, E of Konitsa. Stony turf in opening among scrub. (From an excellent, compact form of this variable Balkan & NW Turkish species, which we collected in 1996. Clumps of grassy leaves less than 30cm. high & rich violet-blue & white flowers, rather like large versions of *I. reticulata*. . . . . (10+) B
- 599.610 : IRIS SUBBIFLORA** (Sect. *Iris*) \* No data. Bearded iris, about 30cm. high, from Portugal. Upright leaves and flowers in a silky, imperial violet. Said to be satisfactory outside in the UK but we give it a warm summer-rest under cover here. . (8) B
- 599.805 : IRIS TAOCHIA** (Sect. *Iris*) \* Turkey, Erzurum, N of Tortum. 1600m. Steep, open, stony slopes. Ex a R. & R. Wallis coll. (A choice, compact, local iris from igneous slopes in a small area NE of Erzurum. Prominent, broad foliage & branched stems reaching about 30cm. with flowers in pale yellow or dusky purple with yellow-haired beards. From both colour forms.) . (5) D
- 600.100 : IRIS TROJANA** (Sect. *Iris*) \* No data. W Turkish bearded iris with distinctive, bicoloured flowers. Pale blue standards & red-purple falls with beards of white, yellow-tipped hairs. 60cm. Usually good outside in a hot, dry site in the UK. . . . . (8) B
- 612.510 : KNAUTIA MACEDONICA** \* No data. From the deep crimson form of this 1m. high Balkan scabious. . . . . (20+) A
- 618.800 : LATHYRUS JAPONICUS subsp. MARITIMUS** UK, England, Suffolk, near Aldeburgh. Sea-level. Shingle beach. D. Stephens coll. (A 'classy' rhizomatous perennial with procumbent stems, clad with pale glaucous-green, pinnate leaves & carrying many stalked racemes of up to 12 purple flowers, fading to blue. The species as a whole occurs from Japan to both the N Pacific & N Atlantic coasts of America, hence to the shores of NW Europe but in the UK it is known only from a few sites in SE England, around Aldeburgh, where the local people are said to have survived starvation in 1555, by eating its seeds.) . . . . . (10+) B
- 619.710 : LATHYRUS TINGITANUS from PINK FORM** \* Morocco, near Tangier. (Fine, seldom-seen form of this, usually purple-flowered, annual from S Spain & NW Africa. Climbing to over 1m. it sows itself in Harry Hay's Surrey garden.) . . . (10+) A
- 619.860 : LATHYRUS VERNUS from PINK & WHITE FORM** From the form with bicoloured, pink & white flowers, called 'Alboreuseus', which can be expected to come quite evenly from seed. This compact, early-flowering perennial, about 30cm. high, is far too little grown. An adaptable delight with other early spring flowers & with tidy clumps of foliage later in the season. (10+) A
- 626.050 : LEONTOPODIUM ALPINUM subsp. NIVALE** \* No data. The most desirable & distinct dwarf race of edelweiss, localised in the Appenines, Montenegro & the Pirin range of SW Bulgaria, whence most cultivated material probably originates. Pads of leaves densely covered with white wool on both surfaces and the typical edelweiss heads carried on stems less than 5cm. high. By no means easy to grow outside in the UK, this definitely merits careful cultivation in the alpine-house. . . . . (possibly about 20) E
- 627.801 : LEUCANTHEMOPSIS RADICANS** (*L. pectinata*) \* Spain, Granada, Sierra Nevada, SE of Pico del Veleta. 3000m. Open, stony areas on schist. (Endemic to the Sierra Nevada & one of the choicest of alpine *Compositae*. Tight mats of tiny, much-cut, greyish leaves produce sulphur-yellow daisies, which flush crimson as they age. To Farrer, it was "a treasure to be much desired" and to Giuseppe, who probably introduced it in 1933, "one of the prettiest plants in existence... a difficult plant to grow but more than worth the trouble it gives." Try it in a Spartan, acid scree-mix in full sun in the alpine-house or a trough.) . . . (possibly 20+) E

## Lilium : grow lilies from seed for vigorous, virus-free stock.

- 632.600 : LILIUM CANDIDUM** \* Greece, Lakonia, W of Sparti. 500m. Steep, limestone slopes among *Euphorbia*, *Phlomis*, etc. (Incomparable, pure-white lily. Older cultivated stock is sterile & full of virus. This is from plants maintained here by hand-pollination from our 1983 wild seed coll. It survives outside in our wet climate but we grow it under glass for seed.) . . . . . (15+) C
- 633.950 : LILIUM LEDEBOURII** \* Iran, Gilan, Talish. 1700-1900m. Openings in degraded *Fagus* forest. Ex an A. Ala coll. (A very local species, known from one site in the Caspian forest of Iran & one or two in neighbouring Azerbaijan. A superlative plant, now well-established & proving accommodating in several British gardens from Anne Ala's original coll. in the 1970's. Stems about 1m. high with up to 15, white flowers, banded with yellow-green & lightly speckled with purple. Deep orange anthers.) . . . (15+) E
- 634.030 : LILIUM MARTAGON** Russia, near Tomsk. (An interesting Siberian wild coll. of this very variable & usually easily grown species. The race from this area has been considered a distinct taxon & separated at specific, subspecific and varietal levels, the last possibly, if any, being the most acceptable, as *L.m. var. pilosiusculum*, apparently distinguished by its narrower leaves and sparsely spotted, vinous-purple flowers, covered outside with long hairs and opening from cobwebby buds.) . . . . . (15+) C
- 634.040 : LILIUM MARTAGON** \* No data. From a wide range of forms of this widespread Euro-Siberian turkscap lily. Stems of about 2m., whorled with dark leaves carry speckled, pendant flowers in pale pink to maroon. Easy in UK in light shade(20+) A
- 634.050 : LILIUM MARTAGON f. ALBUM** \* No data. From some fine green-tinged whites. Usually comes 'true'. . . . . (20+) B
- 634.401 : LILIUM POMPONIUM** \* France, Alpes-Maritimes, Montagne de Maurel, NE of La Mure. 1000m. Among scrub in steep-sided limestone gully. (Perhaps the most restricted & local of the European lilies in the wild. Purplish stems set with many, twisting, linear leaves rise only to about 50cm. & can carry up to 10 "brilliant little sealing-wax-red turkscap blooms, with minute black spots, like fairy lamps." Not so difficult in a well-drained, sunny site in clay with plenty of limestone chips.)... . . . . . (10+) E
- 634.810 : LILIUM PYRENAICUM** \* UK, Wales, below Ffostrasol. 200m. Mixed deciduous woodland on acid soil. (May or may not be native, though the distribution fits other Pyreneans, but certainly now wild. Dwarfier than populations we have seen in the Pyrenees, at about 60cm., with bright yellow, brown-spotted, turkscap flowers above close-packed, narrow leaves.) . . (10+) C
- 635.220 : LILIUM SZOVITSIANUM** \* No data. One of the best garden-plants in the genus. Doubtfully consistently separable from *L. monadelphum* & others in this intergrading group of beautiful, fragrant, pale yellow Transcaucasian lilies, mainly distinguished by the dimensions & proportions of their flowers. All are worthwhile & likely to appear distinct in the garden.) . . . . . (15+) B
- 673.005 : MELITTIS MELISSOPHYLLUM** (subsp. *melissophyllum*) \* UK, England, Sussex, S of Horsham. Ex an R. Wallis coll. (A handsome, shade-loving, hardy perennial member of the *Labiatae*, surprisingly neglected by British gardeners, though it is an uncommon British native. About 60cm. high with wrinkled, coarsely toothed leaves & verticillasters of fragrant, long-tubed white flowers with large, pale-purple lips. The species occurs locally in Europe with other subspecies in the south & east.) . . (10+) B

## Paeonia : fresh from Azerbaijan, Georgia & Russia

Where we can, we list fresh 1999 seed collected both from cultivated plants & from natural populations in the republics of the former USSR but, even if sown promptly, this may not show leaf-growth until spring, 2001. These are plants for the dedicated and patient grower. Always keep ungerminated seed. It is large enough to check that it is sound. Like some lilies, many peonies will germinate hypogaeally, forming a root-system underground during the first cool period before sending up true leaves the following season. While we should like to list a complete range of this genus regularly every year, peony-

enthusiasts will appreciate, these are all too often unpredictable opportunities. Most species are very local in nature, occurring, sometimes in large numbers, in isolated colonies. It can be a lot of trouble to arrange to collect seed from them, especially as the anarchic situation in most of these areas compounds both the difficulties of collection and the unreliability of communication & transport. Our thanks as ever to Will McLewin for his painstaking efforts to continue collaboration with the botanists in the republics of the former USSR, who have made many of these collections. It is not at all easy.

- 745.802 : PAEONIA ANOMALA** Russia, Khakassia, Shirinsky district. (A central Siberian coll. of this fine species, widespread in the colder areas of N Asia. Foliage cut into narrow segments, beautiful even without the flat flowers, up to 9cm. across, in deepest rose-pink. Well depicted in the wild in Rix & Phillips, Vol. 1. We do not know how much this varies in different sites.) . . . . . (6) C
- 745.850 : PAEONIA ANOMALA** \* Russia, Siberia. (From a tall, 1m. high form, originally from a wild Siberian coll.) . . . . . (6) C
- 745.950 : PAEONIA BIEBERSTEINIANA** (*P. tenuifolia* complex) Russia, Stavropol district. (Possibly from the open grassland-habitat illustrated as that of "*P. tenuissima*" on p.93 of Rix & Phillips 'Perennials' Vol. 2. Much dissected leaves but less finely cut than *P. lithophila* foliage & bright red flowers. Distinct from the others in this geographically disjunct complex in its greyish, hairy foliage. Like the Georgian populations, this seems to be a rather local plant, which it may not be possible to list again.).. (6) F

- 746.100 : PAEONIA CAMBESSEDESII** \* The dwarfiest species, endemic to the limestones of the Balearic Islands and best with some protection, in cyclamen-conditions, in the UK, though most of this seed is from a plant grown outside in Hampshire. About 30cm. high with beautiful, smooth, grey-green foliage, crimson beneath, & big, rosy flowers, up to 10cm. across in spring. . . . (6) C
- 746.130 : PAEONIA CARTHALINICA** (*P. tenuifolia* complex) Georgia, Dampalo hills, Kartli. An obscure entity & a very local plant indeed, only known from the one colony this area. Apparently the most robust of the *P. tenuifolia* complex, described as over 1m. high with bright red flowers & foliage less finely cut than some of the others. We have only a little seed. . . . . (6) F
- 746.150 : PAEONIA CAUCASICA** (*P. mascula* complex) SE Georgia, Daba area. (The fine Caucasian representative of the widespread & variable *P. mascula* complex, distributed through S Europe eastward to N Iran. About 50cm. high with dissected, flat, smooth foliage, glaucous beneath, & big rosy-red flowers with woolly follicles & purple filaments to the yellow anthers.) (6) C
- 746.305 : PAEONIA CORIACEA** (*P. mascula* complex) Spain, Granada, near Alhama de Granada. (Only known in Europe from S Spain, though it extends into Morocco & Algeria. We do not know the peonies in this locality, only the *P. broteroi* colonies in the Sierra Nevada, about 60km. to the E. There should be no confusion as the two are utterly distinct in foliage & in fruit. *P. coriacea* has fewer, much broader, rather smooth, leathery leaflets & usually only 2 glabrous follicles with attenuate tips (whereas *P. broteroi* has up to 4 densely woolly follicles). It can be easily confirmed as soon as the first true leaves appear. A fine species with beautiful, rose-pink flowers set against distinct, lead-green foliage. Moroccan material we have cultivated was very slow-growing.) (6) E
- 746.500 : PAEONIA DAURICA** (*P. triternata*) (*P. mascula* complex) Ukraine, Krim (Crimea). (Close to *P. mascula* but distinct in its few, rounded leaflets with undulate margins. This name has been applied to plants in SE Europe & Turkey which approach the Crimean ones but for the purist this is the only 'real thing'. The valid name is an unfortunate misspelling of "*P. taurica*".) . (6) D
- 746.640 : PAEONIA LITHOPHILA** (*P. tenuifolia* complex) Ukraine, Krim (Crimea). (The Crimean race, which probably constitutes most plants cultivated in the west as "*P. tenuifolia*", is distinct in its light-green, much dissected leaves finely cut into a mass of filiform segments. Glossy, brilliant red bowls hold bright yellow stamens in early summer on compact plants, about 50cm. high. Maybe the most striking of this complex and possibly the most numerous in the wild, this is the race we grew as "*P. tenuifolia*" in our Dorset nursery years ago from seed received from what was then the Nikita Botanic Garden in Yalta.) . . . . . (6) D
- 747.110 : PAEONIA MLOKOSEWITSCHII** \* No data. "A sovereign among Paeonies" according to Farrer. Few would disagree. Large, pale lemon-yellow flowers with deeper yellow stamens above 60cm. clumps of rounded, greyish-green leaves. In the soft climate of the UK, the crimson-tinted, young foliage sometimes develops early and can be scorched by cold winds but that is the fault of our climate not the species. We have some particularly good batches of cultivated seed this season . . . . . (6) C
- 747.150 : PAEONIA OFFICINALIS** (subsp. *officinalis*) Croatia, Istria. We are told this is a very good pink form of this variable South European species. We have tentatively placed this under the type race until we can see the foliage & flowers. . . . . (6) D
- 747.160 : PAEONIA OFFICINALIS** (subsp. *officinalis*) \* Italy, Trentino-Alto Adige, Monte Baldo. From another fine pink selection of this variable S European species, originally made in the wild. Seedlings will vary but should all be worthwhile. . . . . (6) D
- 747.210 : PAEONIA OFFICINALIS** subsp. **BANATICA** \* No data. This eastern race, mainly from Romania but extending into E Hungary & E Serbia, is sufficiently distinct to be recognized at subspecific level in 'Flora Europaea', keyed out on the much less divided foliage. Deep red, cup-shaped flowers hold the multitude of stamens with red filaments. . . . . (6) D
- 747.720 : PAEONIA PEREGRINA** from **ROMANIAN FORM** (*P. romanica*) \* No data. We have not seen this form from the eastern end of the species distribution but it is unlikely to differ substantially from other races of this magnificent plant, which does not vary greatly over its wide range, from Italy through the Balkans. One of the most distinct & spectacular in the genus with large, glossy flowers in eye-burning scarlet over deeply cut, shiny, bright-green foliage. Usually trouble-free in UK gardens. . . . . (6) E
- 747.850 : PAEONIA STEVENIANA** (*P. wittmanniana* complex) (possibly the same as *P.w.* var. *nudicarpa*) Georgia, Bakuriani area. (Likely to be wholly different to *P. mlokosewitschii*. Maybe with paler flowers, just tinged with citron-yellow, holding stamens with reddish filaments, over larger, more wrinkled foliage. Will McLewin thinks these may give deeper yellows than *P. mlokosewitschii*. We still know little of the variation of these Caucasian populations & suspect that Russian 'splitting' is justified.) . . . . . (6) E
- 747.851 : PAEONIA STEVENIANA** A high altitude form coll. at 2000m. in the Caucasus of SE Georgia. . . . . (6) F
- 747.852 : PAEONIA STEVENIANA** Selected forms with reddish stems & leaves from the same 2000m. locality. . . . . (6) F
- 747.900 : PAEONIA TENUIFOLIA** Georgia, Igoeti area. Steppe. (The different populations segregated by Russian botanists as this, *P. carthalinica* & the more western *P. biebersteiniana* & *P. lithophila* are separated on foliage characteristics, height & colour, though we doubt if the latter two features are consistent. This type-race should have rich-green, glabrous foliage, less finely cut than *P. lithophila*, & crimson flowers. This collection is from a very small isolated colony at the SE extremity of the distribution of this group & it is described by the Georgian botanist as 'scarce', which probably means that there is only a handful of plants.) (6) F
- 747.960 : PAEONIA TOMENTOSA** (*P. wittmanniana* complex) Azerbaijan, Lerik, Sinabad, Talysh. (Very little-known. Plants from seed collected in the Iranian Talysh in the 1960's (as *P. wittmanniana*) were compact with white flowers & most distinct.) (6) F
- 747.961 : PAEONIA TOMENTOSA** The preceding is seed collected in the Talysh range, which runs from SE Azerbaijan on into Iran. This is from a locality up towards Armenia, in the the main body of the Caucasus, in NE Azerbaijan. . . . . (6) F

# Species from Europe, W Asia & N Africa : Seeds from Jim & Jenny Archibald

- 748.109 : **PAEONIA WITTMANNIANA** \* Georgia, Abkhazia. (A little cultivated seed of this splendid pale-yellow species, core of the complex populations of yellow and cream Caucasian peonies, collected from stocks of wild origin, growing in the Tblisi & Bakuriani botanic gardens. The natural habitat is not currently accessible due to complete anarchy in Abkhazia.) . . . . . (6) **E**
- 748.110 : **PAEONIA WITTMANNIANA** from **PINKISH WHITE FORM** Seed from plants grown in Bakuriani Botanic Garden. This sounds like a natural hybrid, most likely to be with *P. caucasica*. See the last section in this list for garden hybrids. . (6) **E**
- 751.202 : **PAPAVER BRACTEATUM** \* Turkey, Hakkari, W of Semdinli. 1600m. Steep, stony slopes. (Sumptuous, big oriental poppies in crumpled scarlet silk with glossy black centres, on bristly 60cm. stems from stout, perennial clumps.) . . . . (50+) **A**
- 752.300 : **PAPAVER PAUCIFOLIATUM** \* Turkey, Kars. From an E. Pasche coll. (AHEP 83-65). (A slightly more slender version of *P. orientale* with unblotched, brick-red flowers. A Transcaucasian plant, just entering Turkey in the NE corner.) . . (50+) **B**
- 754.010 : **PARADISEA LILIASTRUM** \* No data. A very beautiful, graceful native of the European Alps with tufts of linear, basal leaves & racemes of large, pure-white, lily-like, green-tipped trumpets carried on stems of about 50cm. in summer. A meadow-plant, which is no great trouble to grow in an open site in the garden in the UK but is very seldom seen. . . . . (10+) **B**
- 758.001 : **PELARGONIUM ENDLICHERIANUM** \* Turkey, Erzincan, E of Refahiye. 1500m. Igneous scree. (This & the next are extraordinary, disjunct relicts stranded in Turkey, thousands of miles from their nearest relatives in Sect. *Jenkinsonia*, in the Cape. Local but widespread from Mugla in the SW to the Coruh valley on the Georgian border. Butterfly-like flowers with two large, upper petals are usually magenta. This is from a bright-pink form with crimson veins. Spectacular in the bulb-frame, creating a brilliant patch of colour in mid-summer, Absolutely temperature-hardy & possible outside in the UK in a very sunny, dry site.) . . . . . (5) **C**
- 758.100 : **PELARGONIUM QUERCETORUM** \* Turkey, Hakkari, S of Hakkari. 1300m. Limestone scree on steep E-facing slope with *Quercus*. (A much larger plant, about 60cm. high, with rounded, lobed, soft, green leaves & crown-like umbels of brilliant sugar-pink flowers. Discovered quite recently in N Iraq this just creeps into SE Turkey in the Zap gorge. Our stock grew well at the base of a S-facing wall in Dorset, UK, but we grow it here with protection. A local plant in nature & rare in cultivation.) . . . (5) **E**
- 774.150 : **PIMPINELLA BICKNELLII** \* No data. A neat, small, Mallorcan endemic member of the *Umbelliferae*, rather distinct and can be placed in the monotypic genus *Spiroceratium*. Fascinating, deep-green foliage, divided & toothed, & umbels of pale-purple to white flowers on 30 cm. stems from a stout perennial rootstock. For a good but well-drained soil. . . . . (20+) **C**
- 774.950 : **PIMPINELLA MAJOR** from **PINK FORM** \* From one of the pink forms, grown as 'Rosea', of this perennial member of the *Umbelliferae*, native from Britain across Europe to the Caucasus. We are unwilling to use the name *P.m.* var. *rubra*, other than for wild collected material from the central European ranges, but this may fit in to it as it is fairly dwarf at about 50cm. Dark green, pinnate foliage, with rounded, toothed segments, and raspberry pink umbels in summer. Easy in any good, moist soil. (15+) **B**
- 784.121 : **POTENTILLA NITIDA** \* No data. From the splendid selection 'Rubra' with rich, deep pink flowers, exquisitely studding tight pads of silvered foliage. An endemic of the limestones of the E Alps & one of the loveliest European alpiners. . . . (20+) **B**
- 800.550 : **PULSATILLA ALPINA** subsp. **APIFOLIA** \* No data. The lovely, sulphur-yellow species of acid, peaty meadows in the Pyrenees & Alps. Finely cut foliage & large flowers open low down but by the time it is in seed, stems may be 60cm. or more. Takes time to establish & build up the long-lived clumps from seed. Be patient and leave it undisturbed. . . . . (15+) **C**
- 800.710 : **PULSATILLA HALLERI** subsp. **SLAVICA** \* No data. Basal leaves much woollier & less finely cut than *P. vulgaris*. From a pale lilac form of the Carpathian race of this eastern species with its widely isolated populations. . . . . (15+) **B**
- 808.020 : **RAMONDA MYCONI** \* No data. A beautiful Pyrenean endemic, with flat rosettes of wrinkled, hairy leaves. Some seed from whites as well as the classic violet ones. By far the easiest of this trio of relic members of the *Gesneriaceae* & the best for garden-purposes, unrivalled in a N-facing dry-stone wall. Though utterly hardy, these have not forgotten their tropical ancestry & are best raised from their very fine seeds sown, like *Rhododendron*, uncovered on the surface of a sterile, peaty soil, in gentle warmth, watered from below, and covered with a pane of glass or kept in a plastic bag.) . . . . . (100+) **B**
- 808.022 : **RAMONDA MYCONI** from **PINK FORM** \* No data. Exquisite shell-pink flowers. . . . . (50+) **C**
- 808.401 : **RAMONDA SERBICA** \* Greece, Ioanina, Farangi Vikou. 800m. Limestone fissures. (Least well-known & reputedly the most temperamental of the three species in cultivation. Usually considered to be best grown in the alpine-house in shade though this seed is from plants, growing happily here in a trough outside in a NW-facing corner. Rosettes of rather greyish, hairy leaves & more bell-shaped, violet flowers, approaching those of *Jankaea* in form, with distinctive dark purple anthers.) . . . . . (50+) **D**
- 823.000 : **RHODODENDRON UNGERNII** \* Turkey, Artvin, Genya Dag above Artvin. 1600m. *Picea* woodland with *R. ponticum* undergrowth. (Grown from seed we collected in 1986, this will be at least as 'pure' as wild seed, as there are no other species in flower here in late July & early August, when its big trusses of white bells appear - in nature a month after the other Turkish species are over. A most distinct species, up to 7m. high with large, spectacular foliage, felted beneath.) . . . . . (30+) **D**

**836.110 : RUPICAPNOS AFRICANA** \* No data. A choice, saxatile member of the *Fumariaceae*, widespread & variable in Morocco. Racemes of spurred, pale-pink, ruby-tipped flowers beautifully set against cut, filigree foliage in grey-blue. Easy & long-lived in the alpine-house in the UK, if grown hard. If overfed & overwatered, it grows out of character & is short-lived.) . . . . . (10+) C

## Salvia : some handsome eastern sages

**843.200 : SALVIA CADMICA** \* Turkey, Konya, Sultan Daglari, SW of Aksehir. 1750m. Open sites in stony clay over limestone. (First found on Sultan Dag by Bornmueller in 1899, we saw this fine plant in flower here in 1994. Norman Stevens established it from cuttings & this seed is from in his Cambridge garden. A W Turkish endemic, which might belong with such as *S. caespitosa* in the woody-based, pinnate-leaved group, except that the hairy, wrinkled basal leaves are entire. The 30cm. stems are ringed with pure-white flowers, each surrounded by a large, campanulate greenish-yellow calyx, which persists & expands in fruit.) . . . . . (8) E

**843.500 : SALVIA CANDIDISSIMA subsp. OCCIDENTALIS** \* Turkey, Adana, below Gezbeli gecidi. 1800m. Loose shale slopes. (Fine species for a hot, dry site with felted, greyish rosettes and 60cm. branching stems of white flowers.) . . . . . (15+) B

**844.005 : SALVIA CRYPTANTHA** Turkey. Z. Zvolanek & J. Carruthers coll. (A fine, mat-forming steppe species with small, rounded, downy, basal leaves and 30cm. stems, whorled with purple flowers appearing from large, pale-green, bell-shaped calyces, which in some forms are strongly tinged with purple and always become papery & persist to aid seed-dispersal.) . . . . . (10+) D

**844.201 : SALVIA CYANESCENS** \* Turkey, Bolu, W of Goynuk. 800m. Loose, exposed shale slopes. (A delightfully airy perennial with flat rosettes of felted leaves and diffuse, branching stems, about 50cm. high, of lovely pale-violet flowers. One of several species now well-established in Colorado gardens from collections we made in the early 1980's. Hot, dry site in the UK.) . . . . . (20+) B

**845.201 : SALVIA HYPARGEIA** \* Turkey, Adana, N of Saimbeyli. 1200m. Open rocky areas. (Neat clumps of narrow, grey-green, wool-backed leaves & 50cm. herbaceous stems whorled with lilac-blue flowers. Now a standard plant in Denver garden-centres but quite accommodating in the UK with good drainage in full sun - used to do well on the RBG Edinburgh rock-garden.) (20+) B

**847.051 : SALVIA RECOGNITA** \* Turkey, Nevsehir, W of Urgup. 1200m. Base of cliffs in light shade. (A most distinct, woody-based perennial, up to 1m. high & sticky with glandular hairs. Pinnate leaves & large, widely spaced, rose-pink flowers on elegant, sparsely branched stems. Successful with many growers in the UK, western North America & Australia.) . . . . . (15+) C

**911.300 : SESELI PALLASII** (*S. varium*) No data. A member of the *Umbelliferae*, from E central Europe. An excellent plant for a hot, dry situation with Tim Ingram in Kent, UK. Attractive silver-grey, finely cut foliage forming neat clumps to about 30cm., followed by myriads of white umbels of tiny white flowers in branching heads to about 60cm. . . . . (20+) B

**950.010 : THALICTRUM AQUILEGIFOLIUM** \* No data. A splendid, 1-2m. tall, herbaceous plant, spread from W Europe, E across Asia. Branching stems rise above the smooth, cut foliage to carry wide panicles of fluffy, pale to deep lilac-pink flowers, whose colour comes from the broad filaments & anthers, not petals. Hardy & easy in any good soil, which does not dry out. (15+) A

**950.011 : THALICTRUM AQUILEGIFOLIUM var. ALBUM** \* From the beautiful, creamy-white version. . . . . (15+) A

**950.360 : THALICTRUM FLAVUM subsp. GLAUCUM** (*T. speciosissimum*) \* No data. Another superlative, tall species for good, moisture-retentive soil, where its stems of fluffy, soft-yellow flowers, opening over a long period in summer, will reach 2m. This Iberian & N African race of this Euro-Siberian species is distinct in its dissected, blue-green foliage. . . . . (15+) B

**950.510 : THALICTRUM LUCIDUM** \* No data. A hardy, robust species, over 1m. high, from wet meadows in E Europe & W Russia. Beautiful, narrow, shiny green leaflets & long-branched inflorescences of slightly greenish yellow flowers. . . . . (15+) B

**980.200 : VERBASCUM ARCTURUS** (*Celsia arcturus*) \* Greece, Crete, Rethimno, near Selia. Ex an A. Edwards coll. (Long-flowering & long-lived, woody-based chasmophyte, endemic to Cretan limestone gorges. Downy, grey foliage & 30cm. stems of bright-yellow flowers with violet filaments. Easy if protected from wetness - sows itself in our unheated greenhouse.) (50+) B

**981.300 : VERBASCUM LEVANTICUM** (*Celsia glandulosa*) \* North Cyprus, Kyrenia, castle walls. Ex an A Edwards coll. (Another chasmophyte, close to *V. arcturus* but distributed at low altitudes in the Lebanon & Israel, though the type-locality is in Cyprus. Hairy, pinnatifid, basal leaves and dense inflorescences of many, yellow flowers, with hairy, cream or purple filaments.) (50+) B

**982.950 : VERBASCUM WIEDEMANNIANUM** \* Turkey, Gumushane, WNW of Bayburt. 1600m. Stony clay in fallow-fields. (A very local N Turkish endemic without any close relatives, still sadly confused in gardens with the widespread *V. phoeniceum*. Monocarpic or a short-lived perennial, with stout, narrow spires, up to 2m. high, packed with scented, violet-purple flowers with the filaments covered in purple hairs. It can be temperamental and needs a long cold period to germinate well.) . . . . . (50+) C

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We hope that we can include species from South America, South Africa & Australasia in our our first list of 2000, planned for issue about April with southern hemisphere winter-growers in a July list.

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A : \$2.00 ; £1.50 ; DM4,- ; FF14.- C : \$4.00 ; £2.50 ; DM7,- ; FF23.- E : \$7.00 ; £4.50 ; DM12,- ; FF41.-  
B : \$3.00 ; £2.00 ; DM5,- ; FF18.- D : \$5.00 ; £3.50 ; DM9,- ; FF32.- F : \$9.00 ; £6.00 ; DM16,- ; FF55.-



Most seeds listed here were collected by ourselves during June, July and August, 1998. There is also a substantial number of 1998 collections made by others, as well as quite a lot of our cultivated seed. All seed collected prior to 1999 has been stored in low humidity under refrigerated conditions. We have quite a lot of additional 1999 North American seed from other collectors in hand & this too has been refrigerated for listing in 2000, when we shall have further fresh collections of our own for a more comprehensive list of North American species.

Nomenclature for Californian species follows 'The Jepson Manual', published in 1993, in most cases. This is "good in parts" but no way approaches the outdated 'A Californian Flora' by Munz & Keck (1959), which remains our primary reference. The incomplete but superlative 'Intermountain Flora', 'A Utah Flora' (Welsh, 1987) 'Vascular Plants of Wyoming' (Dorn, 1988) & 'Flora of the Pacific Northwest' (Hitchcock & Cronquist, 1994) are used for taxa occurring within their areas. We edit with gardeners' interests in mind.

**1.010.003 : ACONITUM COLUMBIANUM** (var. *columbianum*) Cal., Plumas Co., Homer Lake. 2000m. G. Greger coll. (A fine 2m. high, purple-blue & green-white monkshood. From moist sites in the coniferous zone so should be easy in UK.) . (20+) **B**

## Allium : it's worth getting to know the western onions

With about 50 species, western North America (California in particular) is an important secondary centre for this genus. Most of these Americans are little-known in cultivation but many should be no trouble in a dry, sunny, raised bed or in a bulb-frame in the UK. The more recalcitrant ones will be no more difficult than many other N Americans and there are many dwarf, montane species worthy of the alpine-house. As with the

Eurasian species, their tendency is to flower a little later than most of the spring-flowering bulbs, often after leaf-growth is fully developed but there are some very early-flowering, snow-melt bulbs among them. For an overview of the genus in the West and its cultivation, see the article by Jim & Georgie Robinett, who are responsible for some of the following collections, in the 1993 issue of 'Herbertia' (Vol. 49).

**1.030.451 : ALLIUM CAMPANULATUM** Cal., Fresno Co. 1700m. Sandy, granitic soil in open woodland. J. & G. Robinett coll. (Rose-pink, spreading, starry flowers in loose umbels, 4-5cm. across, on 15-20cm. stems.) . . . . . (15+) **B**

**1.030.552 : ALLIUM CRATERICOLA** Cal., Napa Co., N of Calistoga, The Palisades. 840m. Serpentine scree. J. Andrews coll. (Dense umbels of white to pink flowers nestle, almost stemless, on the one or two, thick, channeled, falcate leaves. A desirable dwarf of exposed volcanic or serpentine habitats but a little difficult and needs patience.) . . . . . (15+) **C**

**1.030.701 : ALLIUM DICHLAMYDEUM** \* Cal., Sonoma Co., Stewart's Point. 10m. Coastal rocks. (One of the best of the larger species with fine, bright-pink heads on 20cm. stems. Very satisfactory & trouble-free in a frame in UK.) . . . . . (15+) **B**

**1.030.800 : ALLIUM FALCIFOLIUM** Cal., Humboldt Co., SSW of Willow Creek. 1580m. Stony openings among conifers on serpentine. (Red-purple flower-heads on 5cm. stems between two little, thick, falcate leaves in early spring.) . . . . . (15+) **B**

**1.031.800 : ALLIUM LEMMONII** \* Cal., Modoc Co., N of Canby. 1500m. Among volcanic debris on open, clay 'flats'. (Hardy, 20cm. high species in pink to white from the cold, dry uplands of the north all the way across to Idaho.) . . . . . (15+) **B**

**1.031.900 : ALLIUM MEMBRANACEUM** Cal. J. & G. Robinett coll. (An uncommon species, closest to *A. bisceptrum* & *A. campanulatum*, occurring sporadically up to about 1400m. in the foothill *Pinus ponderosa* woodland of N & central California. Stems of 15-30cm. carry rounded umbels of pale-pink flowers with spreading segments turning papery in fruit.) . . . . . (15+) **C**

**1.032.499 : ALLIUM PENINSULARE** Cal. J. & G. Robinett coll. (A widespread, lower altitude Coast Range plant with fine open umbels of red-purple flowers on 30cm. stems. Quite easy & very worthwhile in a bulb-frame in the UK.) . . . . . (15+) **B**

**1.032.601 : ALLIUM PLATYCAULE** Cal., Modoc Co., Warner Mts., Cedar Pass. 1600m. Steep, loose, gravelly slopes. (Round umbels of deep rose with dark anthers on short flat stems between two thick, falcate leaves. A spectacular 'tumble-weed' species, resembling the SW Asian Sect. *Acanthoprason*, flowering very early, just after the snow has melted. Needs cold winters & fits in well with those from similar climates in E Turkey, Iran & Central Asia.) . . . . . (10+) **D**

**1.033.005 : ALLIUM SISKIYOUENSE** Oregon, Jackson Co., Siskiyou Mts., S of Ashland. 1220m. Vernal wet, rocky serpentine slopes. P. Gustafson 98-0835. (Umbels of deep rose-pink flowers sit, almost stemless, between two flat falcate leaves. A desirable local endemic of the ranges along the state line, close to *A. falcifolium* but narrower leaved & even dwarfer.) (15+) **D**

**1.033.602 : ALLIUM VALIDUM** \* Cal., Placer Co. 1400m. Wet meadow. (Dense, pale-pink umbels. Summer. 75cm.) (15+) **B**

**1.048.210 : AMSONIA TABERNAEMONTANA** var. **SALICIFOLIA** \* No data. Doubtfully sustainable, narrow-leaved variant of this species, widespread but local in wooded areas of SE North America, E to Kansas & S into Texas & Georgia. An elegant, woody-based, willow-leaved perennial up to 1m. high with cymes of starry, pale-blue flowers with darker blue tubes. . . . . (10+) **B**

- 1.060.000 : AQUILEGIA BARNEBYI** Colorado, Rio Blanco Co., above Piceance Creek NW of Rio Blanco. 1980m. Steep-sided gully in loose fragmented shale. (Endemic to moist 'seeps' in the oil-shale 'barrens' of the Uinta Basin & discovered by Ripley & Barneby in 1948. Glaucous leaves & sticky, 30cm. stems of pink & cream flowers. Growing here easily under glass.) (20+) **D**
- 1.060.210 : AQUILEGIA CHAPLINII \*** New Mexico, Eddy Co. Ex a S. Walker coll. (A close relative of *A. chrysantha*, endemic to the Guadalupe Mts., E of El Paso on the border of Texas & New Mexico, where its delicately cut, ferny foliage sheets the moist cliff-faces around Sitting Bull Falls. Long-spurred, pale yellow flowers on stems of around 30cm.) . . . . . (20+) **C**
- 1.060.820 : AQUILEGIA FORMOSA** Cal., Greenville. G. Greger coll. (Widespread western columbine. Variable but always eye-catching. A plant of moist habitats with many nodding, spurred scarlet flowers dancing on branched 60cm. stems.) . . (20+) **B**
- 1.061.200 : AQUILEGIA LARAMIENSIS \*** Wyoming, Albany Co., Laramie Mts. above Friend Creek. 2280m. Granite fissures. (Pure white flowers with short, incurved spurs. Narrow endemic, 10cm. high, closest to the Rocky Mt. *A. saximontana*?) (5+) **D**
- 1.061.300 : AQUILEGIA MICRANTHA** Utah, San Juan Co., above Bluff. 1550m. Seepage lines on shady, sandstone cliffs. (Many, small, palest blue, cream or white flowers on sticky, 50cm. stems. A Colorado Plateau endemic.) . . . . . (15+) **C**
- 1.061.350 : AQUILEGIA aff. MICRANTHA \*** Colorado, Montrose Co., Dolores River Canyon NW of Uravan. 1700m. Sandstone detritus on steep, shaded slope. (From a very beautiful colony we found in 1989. Perhaps the result of hybridization between *A. micrantha* and *A. elegantula* but maybe another is involved. Not very variable in the flowers - soft, creamy yellows with long spurs tinged with apricot - but leaves and the 30-50cm. stems vary greatly in their glandular pubescence.) . . . . . (20+) **C**
- 1.061.800 : AQUILEGIA SCOPULORUM** Utah, Garfield Co., above Butch Cassidy Draw. 2600m. Loose limestone talus on steep slopes. (Exquisite bluish foliage and flowers with very long spurs, wholly in a deep gentian-blue. A taller form, 20-30cm. here, easier to grow & more suitable for a very sunny site in a raised bed or the rock-garden than the tiny Great Basin variants.) . (15+) **D**
- 1.068.000 : ARCTOMECON CALIFORNICA** Nevada, Clark Co., SE of Valley of Fire. 500m. Exposed ridgetops on eroded clay & gravel hills. (An extraordinary Nevadan poppy enthused over by Dwight Ripley in 1942: "bluish leaves, clothed in long pale hairs" and 25cm. "smooth stems, almost leafless, each branching into a corymb of fabulous gold poppies." Strictly for the sunniest, best ventilated alpine-house in cold, wet climates - may be ungrowable but worth every effort.) . . . . . (20+) **D**
- 1.068.050 : ARCTOMECON HUMILIS** Utah, Washington Co., Bloomington Hills S of St. George. 920m. Tops & sides of ridges on eroded clay hills. J. Andrews coll. (To Dwight Ripley this was "one of the most startling plants in all Utah." Rosettes of lobed, blue leaves, clad in long, soft, white hairs; up to 70 white poppies on branching stems to 20cm. but usually 10cm. 'Threatened' here by a housing-development and 'off-road' vehicles. Unpredictable in germination and so far proving very "difficult".) (15+) **E**
- 1.070.201 : ARENARIA HOOKERI** Utah, Emery Co., Moien Reef E of Moore. 1930m. Sandstone detritus & rock-slabs. (Seldom seen in cultivation but with a classic, dense, hard, green cushion, covered with fine, stemless, white flowers.) . . . . . (15+) **C**
- 1.075.400 : ARGEMONE MUNITA subsp. ROTUNDATA** Cal., Plumas Co., E of Chilicoot. 1520m. Open, SW-facing slope. G. Greger coll. (A very prickly Prickly Poppy from a coll. made at the northern limit of its distribution. Masses of diaphanous, white *Romneya* flowers on purple-tinged stems of about 60cm. A short-lived perennial best sown direct in a hot, dry site.) . (20+) **A**
- 1.076.710 : ARISAEMA TRIPHYLLUM subsp. STEWARDSONII \*** Canada. No further data. One of two species in this largely E Asian genus, which grow in eastern North America & one of the hardiest & most satisfactory in European gardens. This subspecies is a plant of acid, humus-rich soils in distinctly wet, deciduous woodland. Light green, tripartite leaves and green spathes, striped with purple in the throat, above the strongly fluted spathe tube. Clusters of scarlet fruits in autumn if your are fortunate.
- 1.084.201 : ASARUM HARTWEGII** Cal., Plumas Co., E of Greenville, along Lights Creek. 1280m. G. Greger coll. (A weird, shade-loving member of the *Aristolochiaceae*, forming low clumps from a deep rhizome. Decorative cordate leaves, marbled with white along the veins, below which lurk the flowers surrounded by large, brown-purple calyces with 3 long-attenuate lobes. Inside these are white, striped with maroon and with bands of copious white hairs. Not difficult in dryish part-shade in the UK.) . (15+) **C**
- 1.102.100 : ASTRAGALUS COCCINEUS** (Sect. *Argophylli*) Cal., Inyo Co., White Mts., near Toll House Springs. 1980m. Loose, stony, clay slope. (An incredible species, unsurpassed in the brilliance of its elongated, glowing scarlet flowers against the low tufts of woolly white foliage. Amazing, horned, white-velvet pods. It has been grown, flowered and exhibited in the UK.) (10+) **D**
- 1.105.600 : ASTRAGALUS LUTOSUS** (Sect. *Lutosi*) Colorado, Rio Blanco Co., NW of Rio Blanco. 2000m. Exposed slopes of loose, fragmented shale. (The famous, extremely local Dragon Milkvech, narrowly endemic to these oil-company owned, oil-shale 'barrens'. Its fate is destined to be decided by the price of oil. Tight mats of little, fascinatingly pleated, greyish leaves & large, shiny, papery, red-blushed pods. A most distinct plant, the only member of its very own section.) . . . . . (10+) **E**
- 1.106.700 : ASTRAGALUS MUSINIENSIS** (Sect. *Argophylli*) Utah, Emery Co., E of Moore. 2100m. Heavy, stony clay on eroded shale hills. (Tiny tufts of grey, trifoliate leaves produce racemes of pink and purple flowers on short, 3cm., stems, followed by the exquisite, inflated, papery, pink-velvet pods. A most distinct endemic of the Canyonlands area of central Utah.) . . . (10+) **D**
- 1.108.650 : ASTRAGALUS PURSHII var. TINCTUS** (Sect. *Argophylli*) Cal., Kern Co., E of Mt. Pinos. 2530m. Open granite-gravel slope. (The Western race of this widespread species, usually with flowers in vivid purple-pink followed by the marvellous woolly pods characteristic of its section, sitting tightly on the pads of grey, downy pinnate foliage.) . . . . . (10+) **C**

- 1.110.200 : **ASTRAGALUS UTAHENSIS** (Sect. *Argophylli*) \* Utah, Salt Lake Co., Parley's Canyon E of Salt Lake City. 1400m. Open, gravelly areas. (Marcus Jones, pioneer of Utah botany, thought this the most beautiful flower in the state. Mats of white-felted leaves, brilliant carmine-purple racemes and pods clad in long, shaggy silver-white hairs. One of the least difficult in the UK & now well-established & being maintained by quite a few growers. Alpine-house or a very well-drained raised bed, dry in winter) C
- 1.130.150 : **BLOOMERIA CROCEA** var. **AUREA** \* Cal., San Luis Obispo Co. 170m. Among grass on open, heavy clay slope. (The central Coast Range race of this species in a small genus of seldom-seen corms near *Brodiaea* & *Triteleia*. Wide umbels of delicate, golden stars on 20-40cm. stems. A really pretty thing, well worth growing in the bulb-frame in the UK.) . . . (20+) B
- 1.140.100 : **BRODIAEA CALIFORNICA** Cal., Yuba Co. 630m. Serpentine scree in chaparral. J. & G. Robinett coll. 1995 (Largest of the genus, about 50cm. here, with loose umbels of spectacular, violet flowers with contrasting white staminodes.) (20+) B

## Calochortus : the mariposas, fairy lanterns & cat's ears

The scope and diversity of this amazing genus is still little appreciated by the skilled growers of Eurasian bulbs. A vast amount of composite knowledge, shared by such enthusiasts as Jim & Georgie Robinett, John Andrews, Wayne Roderick, Stan Farwig & the late Vic Girard, David King, Frank Callahan and Boyd Kline makes this comprehensive list possible. Most of the winter & spring growing species from the western USA are here. We were in the USA too early in the very late 1998 season to collect as much as we should have liked ourselves but we have an increased amount of cultivated seed. Though most seed was collected in 1998, we have included a few older collections. *Calochortus* seed stores very well if dried thoroughly & refrigerated. Cultivation can be best learned from noting the habitats of each collection. There are no generalisations to be made about cultivation, in spite of some dreadfully reprocessed 'received wisdom' we have seen published. Dr. Sylvia Martinelli's recent accounts in several UK publications are the most reliable available but it must be remembered that she writes from experience of a relatively restricted number of

mainly Californian species. The early-flowering, low altitude Fairy Lanterns fit in best with the Mediterranean growth-cycle of many Eurasian bulbs. The late-flowering Mariposas might be compatible with such groups as the *Oncocycclus* & *Regelia* Irises. The species from the cold, dry climates of the Great Basin and further east are proving the most difficult. We suspect they may be best left unwatered until later in winter. Even the Californian mariposas may be best left until winter before watering. We are also provisionally convinced that the latter need little, if any, further watering after the first buds open. The quality of the bulbs will be much better. We shall try to establish as many as possible in cultivation and already we have home-grown seed of quite a few available. We appreciate that the range listed is rather daunting but we cannot overstress their variation. For those new to the genus, two worthwhile 'starter collections' are offered at the end of this section, as well as another more specialised collection to encourage wider cultivation by experienced bulb-growers, many of whom we feel have yet to discover them.

- 1.150.001 : **CALOCHORTUS ALBUS** \* Cal., Tuolumne Co., NE of Columbia, Italian Bar. 750m. Steep scrub-covered slopes. (The Sierran foothill race of this Fairy Lantern with pendant, globular, pearly-white flowers on 20cm. stems. A widespread, variable Californian endemic, extending S in the Coast Ranges from near San Francisco almost to the Mexican border, and, in the N, entering the Sierran foothills. Usually a plant of shaded woodland habitats & consequently an easy plant to grow in the UK.) . (20+) B
- 1.150.100 : **CALOCHORTUS ALBUS** var. **RUBELLUS** \* Cal., San Luis Obispo Co., W of Templeton. 400m. Steep, stony, shaded banks. (From a famous & outstanding population, on York Mt. in the Coast Range, with translucent, ruby-pink lanterns. The name is not sustainable botanically but is useful for gardeners for denoting this colour phase. Like the other forms, this fits in with Mediterranean species & is now being grown well in the UK. It was awarded a P.C., when shown there in 1995.) . . (20+) C
- 1.150.500 : **CALOCHORTUS AMABILIS** \* Cal., Solano Co., NW of Vacaville, Mix Canyon. 550m. Steep, scrub-covered slopes. (Another Fairy Lantern. Branching, 20-30cm. stems with nodding flowers in clear, deep yellow with widespread outer and incurved inner segments. A Coast Range species, certainly one of the easiest to grow under glass in the UK.) . . . . . (20+) B
- 1.151.000 : **CALOCHORTUS AMOENUS** Cal., Tulare Co., NE of Springville. 1100m. Among scrub on steep granite slopes. (Like the preceding, in Subsect. *Pulchelli* but with purple-rose nodding flowers. Limited to the western foothills of the central & southern Sierra Nevada, this is not so easy as some of its close relatives but has been very well grown & exhibited in the UK.) (20+) B
- 1.151.500 : **CALOCHORTUS ARGILLOSUS** \* Cal., San Luis Obispo Co., NE of San Luis Obispo. 180m. Among grasses in heavy clay on open slope. (The Reservoir Canyon population listed in 1989 under "*C. simulans*". We now feel that it is more correctly placed here, though it does not quite match the following more northern, typical colony. Extremely 'growable' with us, setting seed well. A lovely, rather dwarf, white Mariposa, more or less flushed lilac, with variable dark basal stains & markings.) (20+) C
- 1.151.502 : **CALOCHORTUS ARGILLOSUS** \* Cal., San Benito Co., Arroyo Dos Picachos. 350m. Meadow in heavy clay. (Californian-grown seed from Hoover's type-locality for this very local, obscure and much misunderstood species. White flowers, flushed purple with central red-brown 'eyes' in yellow zones on the inner segments, often pink or lavender basally.) . (20+) D

- 1.152.000 : CALOCHORTUS AUREUS** Arizona, Coconino Co., WSW of Kayenta. 1980m. Open areas among *Artemisia*. (Superb yellow, clump-forming, tetraploid southern race of *C. nuttallii*. A Colorado Plateau endemic, distributed across N Arizona into NW New Mexico & just entering S Utah. Like the other Mariposas in Subsect. *Nuttaliani*, not likely to be easy in more temperate areas, though growing on here. Rich soft-yellow 'tulips' with maroon-purple crescents above the nectaries.) . . . . . (20+) **D**
- 1.153.000 : CALOCHORTUS BRUNEAUNIS** Cal., Inyo Co., White Mts., Westgard Pass. 2230m. Openings among *Artemisia*. (Near the more eastern *C. nuttallii*. Distinct in its green-striped segments. Pure solid-white with clean purple spots.) (20+) **C**
- 1.154.000 : CALOCHORTUS CATALINAE** Cal., Los Angeles Co., Santa Monica Mts. 540m. Coastal chaparral. (Erect, white flowers edged with lavender & with dark basal blotches. Once widespread in the seaward-facing canyons around Los Angeles, little of its habitat, some of the most valuable land on earth, remains. A splendid species, not too difficult in cultivation.) . (20+) **C**
- 1.155.002 : CALOCHORTUS CLAVATUS** Cal., Los Angeles Co., Santa Monica Mts. 520m. In clay among grasses in open woodland. (A big Mariposa, local on the coastal serpentines. Large, golden-yellow bowls, red-brown lined & hairy inside on zig-zag stems of 30-50cm. Variable but always sumptuous and not usually difficult to grow.) . . . . . (20+) **C**
- 1.155.200 : CALOCHORTUS CLAVATUS** var. **AVIUS** \* Cal., El Dorado Co., ENE of Pollock Pines. 1280m. From a S. Farwig & V. Girard coll. (Raised from the historic 1993 flowering of this race from the Sierra Nevada granites. Thought to be all but extinct, until it exploded into flower. Umbel-like inflorescences of huge, butter-yellow bowls on stems of up to 1m.) (20+) **D**
- 1.156.001 : CALOCHORTUS CONCOLOR** Cal., San Diego Co. 1060m. Sandy soil in chaparral. (The huge Goldenbowl Mariposa from the far south. Big bright-yellow 'tulips' marked inside with dark red, up to 7 on 20-40cm. stems. These southerners have been little tried but will need full light and a warm rest in summer, under glass in the UK.) . . . . . (15+) **C**
- 1.158.000 : CALOCHORTUS EURYCARPUS** \* Idaho, Butte Co., W of Craters of the Moon. 1520m. E & SE-facing slopes of stony ridge. (Wiry, 30-50cm. stems carry elegant, bowl-shaped flowers in white or lilac-pink, neatly blotched with maroon and striped with green. A steppe species, in Subsect. *Nitidi*, spread around the N rim of the Great Basin from E Oregon to Montana - covered with snow all winter and not very warm in summer. Much easier to grow in the UK than other Great Basin species.) (20+) **B**
- 1.158.009 : CALOCHORTUS EURYCARPUS** Nevada, Elko Co., Ruby Mts., SE of Lamoille, along Thomas Creek. 2300-2500m. Among grasses in meadow. J. Andrews coll. (A type-locality coll., though it is much less common here than further N in Idaho & in a much moister habitat than in many sites, though we saw it growing in woodland in Idaho in 1998.) . . . . . (20+) **C**
- 1.158.500 : CALOCHORTUS EXCAVATUS** Cal., Inyo Co., Owens Valley S of Bishop. 1350m. Among *Rosa* & *Salix* scrub in clay (dry in summer). (An extremely local mariposa from a few vernal damp sites in this winter-cold area, hot & dry later in summer. In Subsect. *Nuttaliani* with up to six, widely bell-shaped flowers in pale lavender to white, dark purple at the base.) . (20+) **D**
- 1.159.000 : CALOCHORTUS FLEXUOSUS** Cal., Inyo Co., Amargosa Range, Daylight Pass. 1315m. Along dry gullies. (A very strange, desert Mariposa, local but widespread here & there all the way across to SW Colorado. Sinuous stems, 30-40cm. long if straightened, twist and spiral. Up to 6 erect, white, lilac-tinged flowers, purple-spotted & yellow-banded inside.) . (20+) **D**
- 1.159.005 : CALOCHORTUS FLEXUOSUS** Utah, Millard Co., SSE of Garrison. 1900m. Calcareous gravel. J. Andrews coll. (An eastern coll. from an extremely dwarf form near the NE limit for the species. Worth cossetting in the alpine house.) . . (15+) **E**
- 1.163.001 : CALOCHORTUS HOWELLII** Oregon, Josephine Co., Eight Dollar Mt. SW of Selma. 500m. Among sparse *Arctostaphylos* scrub on open, S-facing slope. (Utterly distinct until *C. umpquaensis* surfaced. Beautiful, erect flowers on 30-50cm. stems : white, covered with hairs and darkening centrally to smokey brown. C. Grey records that he found this "very satisfactory in cultivation" in the UK in the 1930's. Growing well & setting seed with us regularly now.) . . . . . (15+) **D**
- 1.163.500 : CALOCHORTUS INVENUSTUS** Cal., Ventura Co., Mt. Pinos. 2680m. Alpine steppe, in granite grit. (Only 15cm. high here, with 1-2, erect, pale lavender flowers, basally stained deep purple. A montane species in Subsect. *Nuttaliani*.) (20+) **B**
- 1.164.000 : CALOCHORTUS KENNEDYI** Cal., Inyo Co., SW of Gilbert Summit. 1620m. Open stony slope with sparse *Artemisia*. (Incomparable & quite unrivalled in the brilliance of its colour - here tending to luminous orange. In California, a plant of high, cold steppe. Intolerant of superfluous water at any time but is has been flowered from seed in the UK.) . . . . . (20+) **B**
- 1.164.200 : CALOCHORTUS KENNEDYI** var. **MUNZII** Cal., Inyo Co., Panamint Range. 2130m. Among *Artemisia* in gravelly soil. (The high altitude race from over 1850m. in the Clark, Providence & Panamint Mts. Just as spectacular as the preceding : intense yellow with black-purple basal markings and anthers. Possibly a great challenge but virtually untried in cultivation.) (20+) **D**
- 1.164.506 : CALOCHORTUS LEICHTLINII** Cal., Plumas Co., N of Greenville. 1100m. G. Greger coll. (A cold-climate mariposa distributed locally on the granite gravels of coniferous forest-openings from the high Sierra Nevada N to Modoc Co. A beautiful plant with white flowers, sometimes tinged pink or smoky-blue & with a striking black blotch above the yellow base.) (20+) **C**
- 1.166.000 : CALOCHORTUS LUTEUS** Cal., Lake Co., N of Clear Lake. 410m. Among grasses on open slope. (Clear yellow, tinged green basally and with extremely variable brown internal markings. One of the most easily grown mariposas.) . . . . . (20+) **A**
- 1.166.100 : CALOCHORTUS LUTEUS** X **SUPERBUS** Cal., Lake Co., Walker Ridge. 600m. Open grassy area, in heavy clay. (Some fine ivories, creams and soft yellows to deep yellow, very variably marked inside.) . . . . . (20+) **B**

- 1.167.005 : **CALOCHORTUS MACROCARPUS** Canada, British Columbia, N Okanagan Valley. 625m. C. Bailey coll. (A widespread species, extending from NE California across the interior of Oregon & Washington into Canada, Idaho into Montana. Very much a plant of volcanic soils in extreme continental climates, it has no close relatives and is placed alone in Subsection *Macrocarpi*. About 50cm. high with large, elegant, erect, purple flowers with median green stripes on the segments.) (20+) C
- 1.168.001 : **CALOCHORTUS MONOPHYLLUS** Cal., Butte Co. 550m. (The only yellow in Subsect. *Eleganti*. A plant of openings in coniferous woodland in the N Sierra Nevada & S Cascades, often with the allied *C. tolmiei*. A little 'sweetie', a few cm. high with bright yellow Cat's Ears. A 'must' for a pan in the alpine-house but keep it cool.) . . . . . (15+) D
- 1.169.503 : **CALOCHORTUS NUDUS** \* Cal., Trinity Co., W of Mt. Eddy. 2080m. Wet mountain-meadow. From a J. Andrews coll. (Another dainty, little plant, like *C. uniflorus* in Subsect. *Nudi*. About 15cm. high with erect flowers, pencilled with purple. In moist alpine-meadows on the high serpentines of the N, superlative rich blue-purple populations, such as this, occur.) (15+) E
- 1.169.599 : **CALOCHORTUS NUDUS** Cal., Plumas Co., Long Valley. 1680m. G. Greger coll. (Since we have seen the more northern, high altitude, Trinity Co. populations of *C. nudus*, we have not been entirely comfortable about how "ethnically pure" these Plumas Co. populations are. Certainly there are hybrids with *C. minimus* in this area (see the next) but we do not know this particular colony. Super little dwarf plants, anyway, and ones we find easy to grow in cultivation in the UK.) . . . . . (20+) C
- 1.169.600 : **CALOCHORTUS NUDUS X MINIMUS** \* Cal., Plumas Co., N of Spanish Ranch. 1220m. Coniferous woodland. (Like pinkish versions of *C. minimus*. In seed their capsules droop, whereas wetter-growing *C. nudus* has upright ones.) . . (15+) C
- 1.170.003 : **CALOCHORTUS NUTTALLII** Colorado, Mesa Co., SW of Whitewater. 1800m. Among *Artemisia* on stony, sandstone slopes. (This is our attempt to secure the amazing, early-flowering sugar-pink forms from this area & the Uintah Basin of Utah. We have collected seed here before but have never seen them in flower : photographs by others inspire us.) . . . . . (20+) C
- 1.170.500 : **CALOCHORTUS OBISPOENSIS** \* Cal., San Luis Obispo Co., NE of San Luis Obispo. 150m. Fissures on loose, serpentine cliffs. (In Sect. *Cyclobothra*, Subsect. *Weediani* but unlike anything else in the genus. Many small flowers on stiff, branching, 30cm. stems. Hairy-tufted, purple-tipped yellow segments, like a piece of miniature, feather millinery. Our own cultivated seed of this very local plant, raised from our 1989 coll. & now growing well under glass with no special treatment.) . (15+) D
- 1.171.000 : **CALOCHORTUS PALMERI** \* Cal., Los Angeles Co., San Gabriel Mts., Bandido Camp. 1770m. Open slopes with *Artemisia* & sparse *Pinus*. (A dainty, little mariposa from the ranges E of Los Angeles, where its flowers look like grass pinks in a European meadow. Pink with occasional whites, brown-spotted & yellow-haired inside. About 30cm. high) . . . . . (15+) D
- 1.171.101 : **CALOCHORTUS PALMERI** var. **MUNZII** Cal., Riverside Co. 1300m. Sandy clay in open woodland. J. & G. Robinett coll. 1995 (Lacks the stem-bulbils of the type-race. Little-known and very local with bright lavender-pink flowers.) . (15+) E
- 1.171.500 : **CALOCHORTUS PANAMINTENSIS** Cal., Inyo Co., Panamint Mts. 2300m. Stony openings among *Pinus* & *Juniperus*. (The real thing, an isolated endemic in Subsect. *Nuttaliani*, closest to *C. bruneacumis*, stranded on the top of this desert range. Immaculate, white flowers, green-striped externally. A coll. unlikely to be repeated & a challenge.) . . . . . (15+) E
- 1.171.510 : **CALOCHORTUS** aff. **PANAMINTENSIS** Cal., Kern Co., W of Walker Pass. 1650m. Open stony areas. (A puzzling population from the SE limits of the Sierra Nevada, directly WSW of the Panamints but separated by about 120km. of desert. Unspotted, white, green-striped flowers key-out as *C. panamintensis* but a few are flushed rose or lavender.) . . . . . (15+) E
- 1.173.504 : **CALOCHORTUS PLUMMERAE** Cal., Riverside Co. 580m. Dry chaparral. (Superlative, late-flowerer in Subsect. *Weediani*. Its habitats around Los Angeles are diminishing. Great pink bowls, densely golden hairy inside. 60cm.) . . (20+) C
- 1.174.500 : **CALOCHORTUS PULCHELLUS** Cal., Contra Costa Co., Mt. Diablo NE of Danville. 520m. Steep, wooded slopes. J. Andrews coll. (A charming, 20cm., bright lemon-yellow Fairy Lantern, only known from Mt. Diablo. Distinct from *C. amabilis* in its greener leaves and larger, spherical flowers. Easy to grow in the bulb-frame or alpine-house in the UK.) . . . . . (15+) C
- 1.175.800 : **CALOCHORTUS SIMULANS** Cal., San Luis Obispo Co. 660m. Among chaparral on gritty clay bank. J. & G. Robinett 1995 coll. (The true plant this time. Confused by us with *C. argillosus* (both taxa were described by Hoover in 1944), which grows on heavy clays. This inhabits, usually granitic, sands in a very limited, hot, dry zone of the inner S Coast Ranges. Flowers are superficially similar to *C. catalinae* with dark nectaries but can vary to pale yellow edged with rose-pink.) . . . . . (15+) E
- 1.176.000 : **CALOCHORTUS SPLENDENS** \* Cal., Ventura Co., off Lockwood Valley Road. Openings among *Artemisia* in sandy clay. (Beautiful, soft lavender mariposa with white, wispy hairs and dark anthers. Easily grown in our experience.) (20+) A
- 1.176.001 : **CALOCHORTUS SPLENDENS** Cal., Lake Co., Walker Ridge. 600m. Openings in scrub over serpentine. J. & G. Robinett coll. (From the northern limit for this species. Marked basally with deep purple. 30-50cm. high.) . . . . . (20+) B
- 1.176.500 : **CALOCHORTUS STRIATUS** Cal., Los Angeles Co., N of Lancaster. 760m. Open, level sites among desert scrub. (Distinct mariposa endemic to a few alkaline seeps in the Mojave. Many, pale-lavender flowers veined with maroon-purple, just like the petals of *Geranium* 'Ballerina'. Probably difficult but growing on here quite well so far, though not yet flowered.) (15+) D

- 1.177.000 : CALOCHORTUS SUPERBUS** \* Cal., Mariposa Co., NNW of Hell Hollow. 700m. Open, stony, serpentine slope. (From the type-locality of this classic Mariposa, distinct from *C. venustus* in its linear, inverted V-shaped gland. Almost invariably white here with purple-brown blotches & basal markings. Easy to grow with us and now setting seed well.) . . . . . (20+) **B**
- 1.177.006 : CALOCHORTUS SUPERBUS** Cal., El Dorado Co., N of Placerville. 720m Openings among *Pinus*. J. & G. Robinett coll. (From a famously spectacular & infinitely variable colony with lilac, lavender & purple flowers, rich shades of faded antique fabrics, beautifully & intricately marked inside. A stand now sadly becoming depleted by 'ranchette development'.) . . (15+) **D**
- 1.178.007 : CALOCHORTUS TOLMIEI** Oregon, Douglas Co., above Callahan Creek. 460m. Openings among *Pinus* on serpentine slope. (The 1998 seed-set on this early-flowering Cat's Ear was unusually poor almost everywhere. The late, wet spring really upset it. Around 15cm. high with a succession of very hairy, lavender flowers. Usually quite easily grown in the UK.) . . . . (20+) **B**
- 1.178.020 : CALOCHORTUS TOLMIEI** Cal., Humboldt Co. 900m. Open, grassy meadow. J. & G. Robinett coll. (A beautiful violet centred form of this little Cat's Ear, the most widespread and arguably the most variable species in this genus.) . . . . (15+) **C**
- 1.179.001 : CALOCHORTUS UMPQUAENSIS** Oregon, Douglas Co., above Callahan Creek. 460m. Steep, open, serpentine slope. (From a different locality to the Robinett 1995 coll. but still in the upper drainage of the Umpqua. A very local serpentine-endemic, described in 1989. Closest to *C. howelli* and not unlike it in its very hairy flowers, creamy white with a large maroon-black centre, but substantially different in its large, drooping seed-capsules. Very striking and not too difficult so far in the UK.) . . (10+) **E**
- 1.179.500 : CALOCHORTUS UNIFLORUS** \* Cal., Lake Co., NE of Middletown. 290m. Open meadow in heavy clay. (A dwarf, lilac flowered member of Subsect. *Nudi*, easily grown in Europe, where it fits in with Mediterranean bulbs. In this site, it grows mixed with *C. vestae* but has dropped its seeds and gone dormant before the latter flowers.) . . . . . (15+) **B**
- 1.179.501 : CALOCHORTUS UNIFLORUS** \* Oregon, Josephine Co., SW of O'Brien. 550m. Wet depressions among sparse conifers. (From one of the northern populations : the species has a wide range well into Oregon, always in vernal wet places. This grows easily with us under glass & may be possible outside. Lilac with purple markings above the nectaries.) . . . . . (15+) **B**
- 1.180.507 : CALOCHORTUS VENUSTUS** Cal., Fresno Co. (Sierra Nevada NE of Fresno). 1740m. Sparsely wooded slope in sandy, granitic soil. J. & G. Robinett coll. (This widespread species, distinguished by its rather square nectary, is the ultimate in variability of ground-colour and markings. Most commonly found with a white ground-colour, this population exceeds imagination in shades of pink, purple, red and orange with every combination of these and of the complex blotches and basal markings.) . . (15+) **D**
- 1.180.550 : CALOCHORTUS VENUSTUS** \* Cal., Kern Co., Cuddy Valley. 1840m. Openings among *Pinus*. (A famous, restricted & unique colony in a series of subtle red shades, like scarlet velvet, faded to varying degrees. The basal markings are lost but the golden hairs stand out strikingly. The limited habitat here is heavily grazed by horses but it flowered well in 1998.) . . (15+) **D**
- 1.181.500 : CALOCHORTUS VESTAE** Cal., Mendocino Co., SW of Covelo. 390m. Among grasses on heavy clay slope. (Double crescent nectaries & a different chromosome number distinguish this from *C. superbus* & *C. venustus*. Spectacular, solid-white flowers with big brown-purple blotches in yellow zones & purple-pencilled bases. A splendid northern mariposa.) . . (20+) **B**
- 1.182.003 : CALOCHORTUS WEEDII** (var. *weedii*) Cal., San Diego Co. 750m. Chaparral, in rocky clay. J. & G. Robinett coll. 1995 (A big, southern *Cyclobothra* in Subsect. *Weediani*, unlike any other here, except *C. plummerae*. Up to 6, erect, rich-yellow bowls, variably brown-tinted at the rim & intricately marked at the base, filled with long, yellow hairs. 40-80cm.) . . . . . (15+) **C**
- 1.182.200 : CALOCHORTUS WEEDII** var. *VESTUS* Cal., Monterey Co., Monterey Range, Lottie Potrero. 700m. Serpentine outcrops. J. Andrews coll. (An obscure, odd, northern disjunct race, thought to have affinities to *C. obispoensis*. Squarish bowls in creamy, brown or purplish shades with dark hairs instead of yellow ones. Little known & seldom collected.) . . . . (15+) **E**
- 1.182.500 : CALOCHORTUS WESTONII** Cal., Kern Co., S of Alta Sierra. 2050m. Coniferous woodland. (A little subalpine Cat's Ear stranded a long way from any relatives, at the S end of the Sierra Nevada. 15cm. with hairy, lilac-tinged bells.) (15+) **E**

**CALOCHORTUS : COLLECTION No. 1 : FAIRY LANTERNS & CAT'S EARS**

Eight members of Section *Calochortus*. If you grow Mediterranean bulbs, you can grow these : *C. albus*, *C. albus rubellus*, *C. amabilis*, *C. amoemus*, *C. nudus*, *C. pulchellus*, *C. tolmiei*, *C. uniflorus* List value at least \$20.00 or £17. - for only \$15.00 or £10.

**CALOCHORTUS : COLLECTION No. 2 : MARIPOSAS**

Eight Californian members of Section *Mariposa* : *C. argillosus* (1.151.500), *C. clavatus*, *C. luteus*, *C. splendens*, *C. superbus*, *C. venustus* in two variants, including the Cuddy Valley reds, & *C. vestae* List value at least \$20.00 or £17. - for only \$15.00 or £10.

**CALOCHORTUS : COLLECTION No. 3 : INTERMOUNTAIN SPECIES**

For the serious enthusiast & to encourage those who wish to push out the boundaries of our knowledge of cultivation, nine collections from the cold deserts and steppes between the Sierra Nevada and the Rockies. The species from this climate of extremes are proving the most difficult to grow in cultivation : *C. aureus*, *C. bruneanus*, *C. eurycarpus*, *C. excavatus*, *C. flexuosus*, *C. invenustus*, *C. kennedyi*, *C. kennedyi munzii* and *C. nuttallii* . . . . . List value at least \$37.00 or £25. - for only \$20.00 or £15.00



- 1.211.050 : CEANOTHUS INTEGERRIMUS var. CALIFORNICUS** Cal., Plumas Co., Indian Falls. 1220m. G. Greger coll. (A variable, deciduous shrub, about 3m. high. "One of the most elegant" writes Bean, "producing its long, graceful panicles in great profusion" in mid-summer. Colour can grade from white through to blue or occasionally pink. Seed from a cold area.) (30+) A
- 1.213.005 : CEANOTHUS PROSTRATUS** Cal., Lassen Co., N of Westwood. 1580m. G. Greger coll. (A prostrate, evergreen shrub, forming wide mats, usually in open pine-forest. With its little, toothed holly-leaves & clusters of flowers in pale to deep blue, it has been described as "one of the most showy & desirable of alpine shrubs". Temperature-hardy but needs a hot, dry site.) (20+) B
- 1.231.810 : CLEMATIS VIORNA \*** No data. A semi-woody, pinnate-leaved, eastern species, climbing to 2-3m. Little, nodding, leathery, narrow-mouthed bells with recurved tips to the sepals, in red-purple. Feathery, brown seed-heads. . . . . (15+) B
- 1.259.550 : CORNUS NUTTALLII** Cal., Tehama Co., WSW of Lake Almanor. 1220m. G. Greger coll. (The Pacific dogwood, "noblest" of the genus & one of the most beautiful of small trees. It can reach more than 15m. in nature, though rarely more than a large shrub in the UK. Heads of tiny flowers surrounded by whorls of about 6, large, petal-like, creamy-white, pink-flushed bracts wreath the branches in early summer & in autumn the leaves flame to yellow & scarlet. Flowers when quite young.) . (10) B

## Delphinium : the golden larkspur takes to cultivation

At last we seem able to maintain a good range of *Delphinium* species. Since we first visited California in 1989, we hoped to be able to strike it lucky with seed but it was not until 1995 that we managed a wide variety. We now list cultivated seed from some of these, the most exciting of which we think is *D. luteum*, one of California's rarest plants but one which set seed with abandon in the UK in 1999. We hope we can ensure its wide distribution and long-term future in cultivation. All here are more or less summer-dormant perennials, retiring underground to a variety of rootstocks when it is hot and dry. The wet-growers, *D. glaucum* and *D. trolliifolium*, are likely to remain growing longest in a UK summer but even most of the dry growers will remain active and in flower for much longer in cooler, moister climates than they do in the wild.

Choose as well-drained and as sunny a site as possible for most. Though we have never experienced any difficulties personally, seed-germination has given problems to some in the past. We suggest that they require quite a long cool period. A few degrees above freezing for a couple of months or so should be enough for most. Those from colder areas may need longer. Putting the pots outside in the UK has worked for us. If they do not come up the first year, they come up the next, as with most summer-dormant species. Taxonomically, the genus is difficult with many hybrids. Like many genera with their centre of diversity in California, it is in a very 'fluid' state. We have found Michael Warnock's account in the new 'Jepson' very workable and realistic so far and the nomenclature used here, for the Californians, follows his assessment of the genus.

- 1.300.000 : DELPHINIUM ANDERSONII** (var. *andersonii*) Nevada, White Pine Co., NW of Ely. 2200m. Openings among *Juniperus* in gravelly clay. (From the winter- cold, interior steppes. Rich pure-blue flowers. 30-50cm.) . . . . . (20+) C
- 1.300.700 : DELPHINIUM CARDINALE \*** Cal., Ventura Co., NW of Ojai. 650m. Among scrub on steep slope above dry stream-bed. (Truly breathtaking in flower. This has no affinities with *D. nudicaule*, in spite of its red flowers. A big plant, well over 2m. here, from a massive rootstock, with a much branched stem carrying a long succession of opulent flowers in brilliant, eye-burning scarlet-red. Endemic to the S Coast Ranges just into Mexico, it is recorded up to 1500m. and seems reasonably hardy in the UK, though it is liable to wind-damage here & if foliage appears early, it may need protection.) . . . . . (20+) D
- 1.300.850 : DELPHINIUM DECORUM subsp. TRACEYI** Cal., Siskiyou Co., SW of Castle Lake. 1580m. Openings among scrub on steep, stony slopes. (Dwarf, montane N Californian race with blue-purple flowers. 10-20cm. Cool summer rest.) (20+) D
- 1.302.500 : DELPHINIUM LUTEUM \*** Cal., Sonoma Co., SW of Bodega. Ex a W. Roderick coll. (A species hovering on the verge of extinction, known from two small populations on seasonally wet cliffs near the coast NW of San Francisco. It is essential that we maintain this unique species in cultivation. Not previously generous about setting seed in cultivation, seed-set with several friends was splendid in 1999 : mainly from plants grown in the open garden. Learn the lesson : like many plants from the chilly, misty Californian coast, it does not enjoy hot weather. How temperature-hardy it will be outside in a severe UK winter, however, is yet to be established. A truly beautiful plant when well grown - the only really yellow N American. Branching stems, of about 30 -50cm., packed with large, waxy, shining, clear-yellow flowers in early summer. Dormant in late summer.) . . . . . (20+) E
- 1.302.700 : DELPHINIUM NUDICAULE** Cal., Plumas Co., S of Greenville. 1370m. Among conifers on steep, gravelly, clay slope. (A high altitude inland form, about 30cm. high, of this scarlet-orange species. It will be much hardier than coastal ones) (20+) C
- 1.302.751 : DELPHINIUM NUDICAULE \*** Cal., Trinity Co., N of Zenia. 1660m. Serpentine outcrop. (Apparently, an unrecognized, distinct, tall race endemic to these high, inaccessible serpentines on the inner N Coast Ranges. We have found a restricted colony of similar plants further S in Mendocino Co. Up to 1m. high with the long-spurred, brilliant scarlet flowers held out on long pedicels. From our 1989 coll., grown successfully as a border-plant outside by Dinah Batterham (Dorset, UK)) . . . . . (15+) D

- 1.303.100 : DELPHINIUM PARISHII** Cal., Inyo Co., SW of Gilbert Summit. 1620m. With sparse *Artemisia* on open, stony slope. (Cold-desert species with 50cm. racemes of downy, white-eyed flowers in a beautiful pale azure-blue.) . . . . . (20+) C
- 1.304.300 : DELPHINIUM TROLLIIFOLIUM** Cal., Humboldt Co., SSW of Willow Creek. 1070m. Steep, moist, part-shaded banks. (A magnificent wet-grower distributed in the N Coast Range from Humboldt Co. N into W Oregon, which we first saw in flower here in 1989 & have been trying to collect seed from ever since. Every year up till now, it has been grazed off by deer coming to drink at the nearby spring. About 2m. high with large, laciniately lobed leaves & spires of rich, deep blue flowers. This should be an important species for gardeners in the UK, where it should be easily grown in any good, rich moist soil.) . . . . . (20+) C
- 1.304.500 : DELPHINIUM VARIEGATUM** (subsp. *variegatum*) \* Cal., Mendocino Co., SW of Covelo. 390m. Heavy clay on open, grassy slope. (A spectacular species around 50cm. high with racemes of flowers in rich, deep royal-blue. This has grown very well with us, flowering for a very long period & setting seed well. It should be easy in a bulb-frame anywhere in the UK or perhaps even in a well-drained sunny site outside, providing an unique colour in late spring & early summer.) . . . . . (20+) C
- 1.308.300 : DICHELOSTEMMA IDA-MAIA** \* Cal., Humboldt Co., NNE of Orleans. 180m. Stony slope at woodland margin. (A startling endemic *Brodiaea* of the N Coast Range. Over 1m. high when well grown, with pendant, tubular flowers in pure glowing red with greenish-cream segments surrounding the white staminodes. Will grow well outside in UK.) . . . . . (20+) C
- 1.320.200 : ERIGERON ARGENTATUS** Cal., Inyo Co., Westgard Pass. 2230m. Openings among *Artemisia* in gravelly soil. (One of the best medium-sized species. Generous, lilac-blue daisies from narrow-leaved, silvery-grey clumps. 20cm.) . . . (20+) B
- 1.320.400 : ERIGERON COMPACTUS** Nevada, Eureka Co., W of Eureka. 2100m. Exposed, bare alkaline 'flats' with sparse *Juniperus*. (Firmly compacted, round hummocks cover themselves with daisies on 5cm. stems - usually white, sometimes lilac-pink, and red on the reverse of the rays. Described by Dwight Ripley as "one of the choicest of its race.") . . . . . (15+) E
- 1.323.720 : ERIGERON UNCIALIS** var. **CONJUGANS** Nevada, Clark Co., Spring Mts., Charleston Peak. 3450m. Limestone fissures. J. Andrews coll. (The tiniest in the genus, a compact, tap-rooted, alpine cushion-plant with hairy basal leaves and little daisies on stems under 5cm. high. The purplish discs are surrounded by many rays in rose, pale lavender or white. The species occurs in the desert ranges of E California with this downier race on the limestones of Clark & Nye Counties in Nevada.) . . (15+) E
- 1.330.250 : ERIOGONUM CAESPITOSUM** Cal., Mono Co., White Mts. 2300m. Open, stony, limestone slope. (One of the best & also one of the easiest to grow among the tightly pulvinate ones. A widely distributed species forming compact mats of tiny, spatulate, white-felted leaves. Clustered yellow heads, opening almost stemless, flush to red as they mature.) . . . . . (20+) C
- 1.331.500 : ERIOGONUM OVALIFOLIUM** Cal., Mono Co., White Mts., Westgard Pass. 2230m. Gravelly steppe. (Woody mats of oval, grey-white leaves with many 10cm. stems with round heads of flowers, creamy-white maturing to pink here.) (20+) C
- 1.335.550 : ERIOGONUM UMBELLATUM** var. **SPECIOSUM** Oregon, Jackson Co., W of Applegate Lake. 1220m. Dry, rocky, S-facing serpentine slope. P. Gustafson 98-0859 (A local race from N California & adjacent Oregon & one of the most spectacular variants of this widespread species. A robust, dwarf shrub, about 30cm. high with big, rich-green leaves, massed with compound inflorescences of brilliant yellow flowers which mature in intense scarlet to rust-red shades. Sunny, lime-free scree.) . (15+) C
- 1.373.900 : GENTIANA SETIGERA** Oregon, Josephine Co., W of Cave Junction. 400m. Bogs & streamsides. P. Gustafson 98-0885 (Endemic to wet places in NW California & SW Oregon with stems of about 20cm. carrying long, narrow, rich-blue bells, with white throats & green-speckle inside, in late summer. A lovely thing which should be growable outside in the UK.) . . . . . (30+) C
- 1.375.700 : GILIA CAESPITOSA** Utah, Wayne Co., SE of Teasdale. 2450m. fissures on sloping, white sandstone outcrops. (A very little 1998 seed of one of the few N American chasmophytes. Only known from this area, it is a bit like a mound of *Saxifraga cochlearis* with long-tubed, *Dionysia*-flowers in a distinctive, soft orange-scarlet, on thready, 5cm. stems. Earlier 1993 & 1995 colls. have seen it tenuously established & propagated vegetatively in the UK. For experienced alpine-house growers only.) (10) F
- 1.376.500 : GILIA FORMOSA** \* New Mexico, San Juan Co., NW of Aztec. 1900m. Ridgetops of eroded clay hills. (Close, woody-based tufts of tiny, hair-thin, bright-green leaves send up wiry-stemmed panicles of long-tubed flowers in clear pink shot with violet-blue. "The special glory of Aztec..known only from here and as beautiful as it is rare" wrote Dwight Ripley in 1943. Being successfully grown under glass from our 1993 & 1995 colls. & we hope we can now maintain this very local species.) (15+) E
- 1.404.000 : HASTINGSIA ALBA** Cal., Plumas Co., NE of Greenville. 1220m. G. Greger coll. (A tall-growing, N Californian, liliaceous bulb, allied to *Schoenolirion* from the SE States. Narrow basal leaves & spires of densely packed, yellow-white flowers on stems of about 60cm. A plant of wet meadows and seeps, which should do well outside in the UK.) . . . . . (15+) B
- 1.422.109 : HESPEROCHIRON PUMILUS** Cal., Plumas Co., Bellas Flat. 1370m. G. Greger coll. (A beautiful, little, summer-dormant member of the *Hydrophyllaceae*. In all, about 5cm. high with tiny, narrowly spoon-shaped leaves and flat, rounded, wide-open flowers, usually in white, more or less tinged with lavender and veined with purple. A plant of wet meadows & flats, inundated after snow-melt in spring but drying out later. A delightful pan-plant for the alpine-house, where it can spend most of the year sleeping under the bench. It is all but impossible to find the small, dormant roots, so sow thinly &, if you have to repot, spread most of the contents of the seed-pot over a larger pan. Then you are set for the next decade. They deserve every effort to cultivate successfully but actually need very little. Rather less in fact than locating & collecting the seed in the wild.) . . . . . (30+) C

## Iris : endless permutations of the pacific coast rainbow

These Pacific Coast irises (Series *Californicae*) exemplify better than any other genus how much speciation is proceeding actively in this area : variation, intergradation and hybridization are considerable. Lee Lenz's 1958 classification (adopted by Munz, by Brian Mathew in 'The Iris' and more or less by "Jepson") is a brilliant and acceptable compromise but do not imagine his taxa are always clearly defined units in the wild. In gardens, much material is of hybrid origin &, while this is

frequently the case in nature as well, remember that most wild plants are likely to be both less showy and less easy to grow than the garden hybrids. Most grow wild in light woodland or among scrub, usually on steep slopes : they need excellent drainage and a neutral to slightly acid soil. A site in sun, in N Europe, might be preferable to half-shade. Lime-free scree will suit some small ones. A few, such as *I. hartwegii columbiana*, *I. fernaldii* and *I. munzii*, might be best in a bulb-frame.

- 1.460.000 : IRIS BRACTEATA** Oregon, Josephine Co., Waldo Hill. 650m. Open, stony, serpentine areas, among scrub. (From near Howell's 1884 type-locality for this very local & distinct species. Thick, broad, leathery leaves & large, showy flowers, always in pale yellow, veined with maroon or brown, in the 'true' species. We doubt if much, if any, cultivated stock is 'pure'.) . (15+) C
- 1.460.009 : IRIS aff. BRACTEATA** Cal., Del Norte Co., SW of Oregon state line. 1040m. P. Gustafson 98-0853 (From an outstanding colony of dwarf irises possibly derived from the larger *I. bracteata*, described by Phyllis as "really beautiful small plants, usually with 2 flowers on each 10-15cm. stem, in cream and white with red, purple or violet-blue markings." We have not seen this population but Phyllis enthuses over these and tells us "even Roy Davidson" agreed they are among the very finest.) . (15+) D
- 1.460.202 : IRIS DOUGLASIANA** Cal., Sonoma Co., Irish Hill. 150m. grassy slopes with coastal exposure. (Tough & vigorous, although a low-altitude, coastal plant. Rich purple forms here. Easy with no particular soil preferences in UK gardens.) (15+) B
- 1.460.600 : IRIS HARTWEGII subsp. COLUMBIANA \*** Cal., Tuolumne Co., NE of Columbia. 650m. Steep, stony slope. (Only known from around the type-locality here and "much more attractive" than the type-race according to Victor Cohen. Virtually, a pale-yellow version of splendid *I. munzii*, which grows 225km. to the S. Well established with us under glass.) . . . . . (15+) C
- 1.460.701 : IRIS HARTWEGII subsp. PINETORUM** Cal., Plumas Co., near Greenville. 1100m. Openings in coniferous forest. G. Greger coll. (A Plumas Co. endemic, though some record the type-race in this area : they may intergrade. Much dwarfer than the long-stemmed type-race, it often opens two of its creamy yellow flowers simultaneously. A very cold area here.) . . . (15+) C
- 1.460.791 : IRIS INNOMINATA** Oregon, Josephine Co., SW of Galice. (Tufts of very narrow, glossy leaves & 20cm. stems with butter-yellow flowers in this classic form (the colour is diagnostic as far as the "Jepson" account is concerned) . . . . . (10+) C
- 1.460.800 : IRIS INNOMINATA** Oregon, Curry Co., N of Agness. 400m. Steep, stony slopes, facing E & SE, in coniferous zone. (Victor Cohen described this population on the divide of the Rogue & Coquille Rivers, in 1965, as "rich golden-yellow & orange" to "pale apricot or light creamy buff." Galen Burrell visiting here in 1993 tells us these are "a beautiful orchid color".) (10+) C
- 1.461.150 : IRIS MISSOURIENSIS** Washington, Whitman Co., Steptoe Butte. 1020m. N-facing slope with sparse *Pinus*. (The only one here not from Series *Californicae*. In *Longipetalae* and very widespread. This is an unusual habitat, growing with *Erythronium* through low scrub, & an extremely dwarf form, not more than 30cm. high. Should be pale-blue to lavender-blue.) . . (15+) C
- 1.461.300 : IRIS MUNZII \*** Cal., Tulare Co., E of Springville. 520m. Scrub-filled gully. (Largest flowered of the group, limited to a few colonies above the Tule & Kaweah Rivers in the S Sierra Nevada. Broad, evergreen leaves & 60cm. stems. Described by Cohen as "pale powder-blue...lavender to purple... delicately veined in violet or turquoise-blue.") . . . . . (15+) D
- 1.461.701 : IRIS TENUISSIMA subsp. PURDYIFORMIS** Cal., Butte Co., Butte Meadows. 1220m. G. Greger coll. (A very local and somewhat obscure race from the shade of yellow pine woodland in the northern Sierra Nevada. We have never managed to collect more than a small amount of seed of this ourselves and we are grateful to Greg for making an effort to collect a little in 1999. Pale yellow flowers with few or no dark veins on stems clasped by pink-flushed, bract-like leaves.) . . . . . (10+) E
- 1.461.800 : IRIS THOMPSONII** Cal., Del Norte Co., SW of Gasquet. 530m. Stony openings among *Arctostaphylos* & sparse conifers. P. Gustafson 98-0850 (From one of two places where Boyd Kline considers the 'true' plant grows. We're not worried if you call this *I. innominata* 'Dwarf Purple Form'. The smallest iris we have seen in this series : tight tufts of leathery, grassy leaves & very short stems. Not seen in flower by us but Boyd & Phyllis say it ranges through rich, deep blues & purples.) . . (15+) D
- 1.492.000 : LEPIDIUM NANUM** Nevada, Eureka Co., W of Eureka. 2100m. Gravelly bare-patches among sparse *Juniperus*. (A poor seed set on 1998 on this classic Great Basin endemic. "Its hummocks look like those of some extra tight *Dionysia*, of a peculiarly intense shade of sap-green... this is the *Draba* to end all *Drabas*..." wrote Dwight Ripley in 1944. Now being successfully grown, it becomes more compact as it ages in cultivation and can produce its stemless, straw-yellow flowers generously.) . . (20+) E
- 1.493.600 : LESQUERELLA TUMULOSA** Utah, Kane Co., SE of Cannonville. 1500m. Shale ridges. (Another pulvinate-caespitose crucifer, perhaps the most condensed of the genus, forming dense hard mounds of downy leaves with yellow flowers on 1-4cm. stems. Extremely local on "white bare shale knolls" in this small area of Kane Co. near Kodachrome Basin.) . . . . . (15+) E

## Lilium : beautiful but temperamental

The species fall very roughly into two groups : the dry-growers with ovoid bulbs with longer, unjointed scales and the wet-growers with rhizomatous bulbs with shorter, jointed scales. In the latter group, *L. pardalinum*, the equivalent of the eastern *L. superbum*, is the focus of a number of taxa. These have been placed under it at subspecific level by Mark Skinner in "Jepson" but we keep them at specific level here, as we feel this is of

more use to gardeners. The wet-growers are going to be much more amenable to the open-garden in cool temperate climates, seldom needing the very wet conditions of their natural habitats. These are well-suited to the peat-bed or similar humus-rich conditions. The dry-growers are more of a challenge. In all cases, the westerners are plants of lime-free soils. Seed sown in winter should give no problems.

- 1.498.100 : LILIUM BOLANDERI** Cal., Humboldt Co. 1200-1500m. In chaparral on serpentine. J. & G. Robinett coll. (Maybe the most beautiful & maybe the most difficult. We have seen photographs of splendid plants grown from seed in the UK - so it can be done. A N Coast Range, serpentine-endemic, it can reach 1m. with up to 7 flowers but is often dwarf : a single huge flower on a 15cm. stem! Stems whorled with thickish, blue-grey leaves carry funnel-shaped flowers in muted crimson (though it can vary to salmon & brick shades), glaucous outside & purple-dotted inside, with dark purple anthers & orange pollen.) . . . . . (15+) **D**
- 1.498.500 : LILIUM COLUMBIANUM** Cal., Humboldt Co. 500 m. J. & G. Robinett coll. (The spectacular lily of the redwood glades, extending N from here into Canada. Up to 30 golden orange turkscap flowers, speckled with maroon on stems as much as 2m. high. Segmented bulb-scales but not a plant of really wet sites, preferring woodland glades & open N slopes.) . . (15+) **B**
- 1.499.200 : LILIUM KELLOGGII** Cal., Humboldt Co. 800m. J. & G. Robinett coll. (A beautiful dry-grower from the California-Oregon line, usually in openings among conifers. Can have 15-20 fragrant, turkscap flowers in pink, striped yellow on the basal third of each segment & speckled purple along the edges. Narrow, greyish, crinkled leaves. Usually under 1m.) . . . . . (15+) **D**
- 1.499.701 : LILIUM PARDALINUM** Cal., Plumas Co., W of Canyon Dam. 1370m. Among *Salix* & grasses in wet meadow. G. Greger coll. (Most widespread wet-grower, variable but distinct in its long filaments & capacity to form wide clonal rhizomatous mats. Red-orange turkscap flowers with maroon spots margined with yellow on the recurving segment-tips.) . . . . . (20+) **B**
- 1.499.920 : LILIUM PARRYI** \* Arizona, Santa Cruz Co., Huachuca Mts., S of Tucson. Ex an S. Walker coll. (Except for *L. humboldtii ocellatum*, the most southern species and a distinct one - like no other in its strongly fragrant, bright yellow, trumpet-shaped flowers, with a few tiny, sparse maroon dots, held horizontally or slightly nodding - up to 30 on stems of about 2m. A very local plant of wet meadows & streamsides in coniferous forest in SW California & S Arizona, where it is rare.) . . . . (10+) **D**
- 1.500.400 : LILIUM RUBESCENS** Cal., Humboldt Co. 500m. Edge of woodland. J. & G. Robinett coll. (An exquisite dry-grower with stems up to 2m. high, carrying 20 or more wide, upward-facing, extremely fragrant trumpets, opening white with minute purple dots, which suffuse over the surface until it is wine-coloured. Whorls of grey-green leaves with crinkled edges.) . . . . (15+) **D**
- 1.500.500 : LILIUM SHASTENSE** Cal., Shasta Co. 1400m. Wet meadow, along a creek across old lava-flow. J. & G. Robinett coll. (Wet-grower, currently placed as a subsp. of *L. pardalinum* but does not increase clonally to the same extent. Nearest to *L. vollmeri* with similar two-toned, red-orange flowers but has yellow to orange pollen. Up to 1.8m. with 30 flowers.) . (20+) **C**
- 1.500.900 : LILIUM VOLLMERI** Oregon, Josephine Co. 500m. Along wet ditch. J. & G. Robinett coll. (Wet-grower near the preceding but has purple anthers & red pollen. A really splendid, 2m. high population here. A local serpentine-plant.) (15+) **C**
- 1.501.002 : LILIUM WASHINGTONIANUM** (subsp. *washingtonianum*) Cal., Plumas Co., N of Greenville. 1220m. G. Greger coll. (Marvellously fragrant, great flaring white trumpets, up to 12cm. across, face out or nod slightly on stems of 40-120cm., whorled with crinkled, grey-green leaves. A dry-grower, usually in open scrub or woods, and reputedly difficult to grow well.) (15+) **D**
- 1.622.001 : MIMULUS CARDINALIS** Oregon, Josephine Co., near Galice. 270m. Moist sites. P. Gustafson 98-0849 (A glandular-hairy, rhizomatous perennial with a multitude of striking, long-tubed, orange-scarlet flowers streaked with darker red. An eye-catching, hardy (it grows up to 2400m.) wet-grower, surprisingly seldom seen in Europe. 50-90cm. high here.) . . . (100+) **B**
- 1.624.009 : MIMULUS LEWISII** Cal., Placer Co., Monumental Ridge above Yuba Gap. 2000m. Streamside on granite. J. Andrews coll. (A long succession of rich, luminous carmine-pink flowers on erect, leafy stems about 60 cm. high in summer. A showy, very hardy, wet-growing perennial, extending up into Alaska & the Yukon. Does well in the UK in any good, moist soil.) (100+) **B**
- 1.649.000 : NOTHOCHELONE NEMOROSA** Oregon, Jackson Co., W of Applegate Lake. 1500m. Humus-rich soil in shade. P. Gustafson 98-0863. (A handsome, 50cm. high, herbaceous perennial. A monospecific segregate from *Penstemon*, near *Keckiella* but not shrubby & with woolly anthers. Panicles of *Penstemon*- shaped flowers, in lavender-pink in this colony.) . . . (20+) **B**
- 1.650.600 : OENOTHERA CAESPITOSA** var. **CRINITA** Utah, Millard Co., SSE of Garrison. 1600m. Steep, loose, stony slope. (The most important race of this spectacular & variable species for the alpine-house grower. The dry climate development with downy, grey leaves & a succession of long-tubed, white flowers maturing to rosy shades. As hot & dry as possible.) (15+) **C**
- 1.692.600 : OXYTROPIS LAGOPUS** (var. *lagopus*) Wyoming, Park Co., NW of Cody, Dead Indian Hill. 2800m. M.&P. Stone 98-41 (A neat, very hairy, dwarf species with globular, woolly heads of red-purple flowers on 8cm stems from felt-leaved mats. We collected seed of this here in 1987 and the name is our 1987 guess but we are open to correction.) . . . . . (15+) **D**

- 1.693.020 : OXYTROPIS OREOPHILA** var. **JUNIPERINA** Nevada, Eureka Co., W of Eureka. 1870m. Eroded banks of calcareous clay. J. Andrews coll. (The two pulvinate forms of this species are among the most desirable of cushion-plants. Solid, woolly hummocks described by Dwight Ripley, as "densely caespitose & clothed all over in shaggy silver hair, each plant covered with hundreds of violet pea-flowers..." followed by inflated, beaked capsules, which are usually eaten by local rodents.) . . . . (8) F
- 1.751.201 : PHLOX TUMULOSA** Nevada, White Pine Co., NW of Ely. 2200m. Openings among *Juniperus* in gravelly clay. (The most densely pulvinate-caespitose development in the genus, from a few intermontane valleys in E Nevada, just into W Utah. Tiny rosettes compressed into the hardest of mats or mounds up to 50cm. across with stemless flowers in white to pale violet. Needs year-round cultivation in the alpine-house in the UK, where it cannot have enough sunshine. Summer temperatures here often exceed 40C, well over 100F, with the soil surface temperature greatly in excess of that. Seed-collecting is not fun.) . . . . . (6) F
- 1.760.300 : POLEMONIUM CHARTACEUM** Cal., Trinity Co., Mt. Eddy. 2740m. Exposed summit area. J. Andrews coll. 1995 (A remarkable disjunct population here. Otherwise known only from above 4000m. in the White Mts. In effect, a miniature *P. viscosum* but distinguished from this & *P. eximium* by its exerted stamens & the papery (chartaceous) base of the petioles. Little tufts of glandular foliage and heads of blue flowers, usually with yellow throats. Should be growable in skilled hands.) (10+) E
- 1.768.100 : PRIMULA DOMENSIS** Utah, Millard Co., House Range, Notch Peak above Sawtooth Canyon. 2450m. Ledges on & at base of limestone cliffs, in part-shade. J. Andrews coll. (Quite recently discovered & described relic member of the *P. cusickiana* group, separated morphologically on rather fine characteristics but widely disjunct geographically. Between 7 & 15cm. high & possibly nearest to *P. maguirei* but with even larger flowers, described as rose to lavender. Alpine-house in the UK.) (20+) F
- 1.770.001 : PRUNUS ANDERSONII** Cal., Lassen Co., near Milford. 1340m. G. Greger coll. (The desert peach - a splendid small shrub not in general cultivation in Europe. It can reach 2m. but is usually much dwarfer with a stiff, spiny habit. Deep-pink to red flowers followed by orange-red, downy fruits. Very much a plant of the dry southern ranges (we last listed this from the Providence Mts. at the edge of the Mojave), this seed is from a northern colony (we did not even know it grew up in Lassen Co.) and may be much more growable in Europe, though remember this is a cold-desert area and give it optimum drainage & sunshine.) (5) C
- 1.775.205 : PULSATILLA PATENS** (*Anemone patens*) Montana, Madison Co., Gravelly Range. 2900m. M. & P. Stone 98-35 (This has a much wider distribution than the preceding, down the interior ranges from Alaska to Colorado, with disjunctions in Illinois & Texas, & is accordingly variable. Clumps of finely cut, silky, hairy, greyish leaves with large, blue to purple flowers, hairy outside, open on stems of about 10cm., which elongate to as much as 50cm., as it matures its showy head of plumed seeds.) . (15+) C
- 1.855.400 : SILENE HOOKERI** \* Oregon, Josephine Co., E of Takilma. 850m. Openings among conifers, in stony turf. (We have our cultivated stock rolling now under glass. One of our favourite plants. Decumbent stems with downy, greyish leaves & a very long succession of flowers with deeply cut petals, soft salmon-pink in this form. Eventually summer-dormant.) . . . . (10+) C
- 1.855.500 : SILENE HOOKERI** subsp. **BOLANDERI** \* Cal., Trinity Co., S of Hayfork. 750m. Openings among conifers on W-facing slope. (Our cultivated seed of this local plant, limited to this area. Distinct both horticulturally & botanically & possibly worthy of specific status (though all subspecific divisions are disregarded in modern 'standard' floras). Large, pure-white flowers with the petal blades deeply cut into linear segments. A little more difficult to grow & maintain than the type-race.) . . . (8) D
- 1.860.310 : SISYRINCHIUM DOUGLASII** Oregon, Jackson Co., Siskiyou Mts. 1500m. P. Gustafson 98-0617. (From an exceptional population of this outstanding, 20cm. high plant of open, montane meadows, surely the finest in the genus. Grassy stems & leaves & "noble hanging bells", in this case, in shades of rose, pink & white, instead of the usual violet. It flowers early and goes dormant later in summer. Growable in the alpine-house or in a trough or scree-bed outside in the UK.) . . . . . (15+) C
- 1.870.245 : SPHAERALCEA CAESPITOSA** Utah, Millard Co., SSE of Garrison. 1900m. Open slopes in calcareous gravel. J. Andrews coll. (Variable & probably grading into *S. ambigua* around here, though this area is virtually next-door to the type-locality. John tells us that this coll. has been selective. Woody-based, dwarf perennials, 5-10cm. high with tightly clustered orange flowers on pads of felted foliage, which, typically, should be thick, grey-white & crenate, barely if at all lobed. Our own 1993 & 1995 colls., though variable, produced some good compact plants which have appeared on the British show-benches.) . . . . . (10+) D
- 1.873.200 : SPHAEROMERIA COMPACTA** Nevada, Clark Co., Spring Mts., Charleston Peak. J. Andrews coll. (Most reduced member of its genus : pads 10cm. across. Dwight Ripley writes in 1942 : "...probably the most decorative of all the Charleston Peak plants...this exquisite tansy from desert snows should vie persistently with winners in the 'Silver Foliage' class...") . . . (20+) D
- 1.890.405 : SYNTHYRIS PINNATIFIDA** Montana, Madison Co., Gravelly Range. 2860m. M. & P. Stone 98-30. (A classic alpine-tundra species of the N central Rocky Mts. Ground-hugging, deeply cut, pinnatifid leaves, grey-green above & usually grey-felted beneath, with terminal racemes of little, deep lavender-blue bells with projecting anthers, on stems of 15cm. or less.) . (15+) C
- 1.925.120 : TRITELEIA BRIDGESII** from 'ROBINETT SELECTIONS' \* Loose umbels of starry flowers, 2cm. wide, in shades of pink, rose & lavender, lighter in the centres & with a glassy appearance. Selected in various N Californian locations. (20+) B
- 1.925.300 : TRITELEIA CROCEA** Cal., Siskiyou Co., W of Yreka. 1750m. Loose serpentine talus on N & W-facing slopes. (A little-known local plant, confined to the Klamath Ranges on the Oregon line. About 20cm. high with bright yellow flowers.) (15+) D.



- 1.926.300 : **TRITELEIA HENDERSONII** Oregon, Douglas Co., above Callahan Creek. 460m. Among *Pinus* on serpentine. (A SW Oregon endemic, superficially not unlike *T. crocea*. Yellow flowers with a central inky-blue stripe on each segment.) (15+) D
- 1.926.700 : **TRITELEIA IXIOIDES** subsp. **SCABRA** Cal., Fresno Co. 1740m. Steep granite-sand slope in open woodland. J. & G. Robinett coll. (The 'Foothill Pretty Face' with light yellow flowers striped grey on the reverse on 25cm. stems. From an outstanding colony with much larger flowers than normal, carried in wide umbels, over 15cm. across, of about 50 flowers.) . . . . (20+) B
- 1.926.820 : **TRITELEIA LAXA** from 'GIANT LAVENDER' \* Cal., Tulare Co. 600m. (A Robinett selection from the southern Sierra Nevada. Very large, lavender flowers, 4-5cm. across in umbels up to 35cm. wide on stems reaching 75cm.) . . (20+) B
- 1.926.850 : **TRITELEIA LAXA** from 'HUMBOLDT STAR' \* Cal., Humboldt Co. 700m. Open, grassy, S-facing clay bank. (Another Robinett wild selection. Densely packed, 20cm. wide umbels with about 50 dark purple flowers.) . . . . . (20+) B
- 1.926.860 : **TRITELEIA LAXA** var. **NIMIA** \* Cal., Marin Co., SSW of Tomales. 15m. Fissures & ledges on W-facing coastal cliffs. (Magnificent with us, flowering under glass long after the Eurasian 'bulbs' are over, keeping the mariposas. company. A local race from the Marin Co. coast with large heads of luminous, deep violet-blue flowers on long stipes.) . . . . . (20+) C
- 1.975.001 : **VERATRUM CALIFORNICUM** (var. *californicum*) Cal., Plumas Co., Horton Ridge. 2010m. Moist, SW-facing slope. (Magnificent herbaceous perennial. Huge, pleated, bright-green leaves. Dense panicles of white stars. 1.5m.) . . . . . (15+) C

## Viola : violets from serpentine-woodland & sagebrush-steppe

The twenty or so summer-dormant *Viola* spp. of the American West have never become well-known in cultivation. We suspect that the very considerable difficulty in collecting seed from them is the main reason & we are again grateful to Greg Greger for keeping a close eye on his local species. When we were involved with growing alpine-house plants we grew several

quite successfully. We outline a few pointers under *V. beckwithii*, which we grew well. One other comment from personal experience, is to note that several species produce only cotyledons in the year of germination, so do not think seedlings have died if they go dormant without producing true leaves. Keep the seedlings growing as long as possible.

- 1.981.150 : **VIOLA BAKERI** Cal., Plumas Co., near Greenville. 1100m. G. Greger coll. (A dwarf, more or less summer-dormant, tap-rooted perennial from openings in the coniferous forests of N California up to Washington. Tufts of entire, lanceolate basal leaves and bright yellow flowers, often backed with purple and veined with brown on the lower three petals.) . . . . . (10) D
- 1.981.205 : **VIOLA BECKWITHII** Cal., Plumas Co., N of Lake Davis. 1830m. G. Greger coll. (A summer-dormant species from the northern rim of the Great Basin. A very lovely thing with greyish leaves palmately cut into linear segments & two-toned flowers : the 2 upper petals deep red-purple ; the 3 lower ones pale lilac, yellow at the base. We maintained this for many years without any great trouble in an alpine-house in the UK. We had no problem with overdrying when dormant with a deep, clay pot plunged in damp sand. We always potted very low & topped up with grit, building this up to a depth of about 8cm. over a few years.) . . (8) E
- 1.981.300 : **VIOLA CUNEATA** Oregon, Josephine Co., SW of O'Brien. 460m. Openings among conifers. (Little, round, white-faced flowers with purple eyespots & violet backs, on branching stems about 10cm. high with small, somewhat triangular, purple-veined leaves. A summer-dormant serpentine-plant from the open coniferous woodlands of S Oregon & N California.) . . . . . (10) D
- 1.981.370 : **VIOLA DOUGLASHII** Cal., Plumas Co., N of Greenville. 1100m. G. Greger coll. (A plant of vernal moist grassland, often on serpentine, & one of the more widespread, summer-dormant Californians. Erect stems about 10cm. high with dissected, bipinnate leaves carry dark-veined, golden-yellow violets, with the upper two petals, usually stained brown-purple on the backs.) (10) D
- 1.981.450 : **VIOLA GLABELLA** Cal., Plumas Co., along Light's Creek. 1220m. G. Greger coll. (A 20cm. tall, rhizomatous species, which grows N to Alaska & E to the Rockies. From moist, shady habitats so doubtless much easier to grow outside in the UK than the dry-growers. Heart-shaped basal leaves and rich yellow violets, veined with purple on the lower petals.) . . . . . (15+) C
- 1.981.500 : **VIOLA HALLII** Cal., Humboldt Co., SSW of Willow Creek. 1420m. Stony turf in opening of coniferous woodland over serpentine. (Very close to *V. beckwithii* but the cut leaves are more glabrous & the flowers usually less elongated & more rounded. They have darker, velvety purple upper petals & cream lower ones. Some think this is even 'classier' than *V. beckwithii*. Restricted to the Coast Ranges on the California-Oregon line, cooler & perhaps moister in summer than the *V. beckwithii* habitat.) (8) E
- 1.981.606 : **VIOLA LOBATA** (subsp. *lobata*) (*V.l.* subsp. *psychodes*) Cal., Plumas Co. G. Greger coll. (A plant of dry, usually coniferous, woodland, widespread S from here into N Mexico but always occurring sparsely in ones & twos. Glaucous, palmately lobed leaves rise to about 8cm. from running rhizomes. Deep yellow flowers, purple-brown outside & veined with purple on the lower petals. Possibly very difficult but there has not been much chance to try this in cultivation.) . . . . . (8) E
- 1.981.900 : **VIOLA PINETORUM** (subsp. *pinetorum*) Cal., Plumas Co., Dixie Canyon. 1370m. G. Greger coll. (In a complex group of tap-rooted, Californian endemics occurring sporadically from here S to the San Jacinto Mts. near Mexico. A plant of rather dry habitats, usually under pines, with tufts of narrow, more or less linear, wavy-edged leaves and lemon-yellow flowers with purple-brown veining & backs to the petals. We have no experience of this in cultivation : it is probably difficult to grow.) . . (10) E



We are pleased to be able to expand the range of E Asian seed from cultivated plants again this season. We hope for much more in 2000, by which time we may be able to make this section the main feature of a December list. For the most part, these species suit our cool, moist climate and we have a great many young stocks, raised from seed collected by recent western travellers, growing on. It will be some time before these can yield enough seed to list. We are also attempting to establish stock from imported plants, especially in such genera as *Arisaema*, *Lilium*, *Fritillaria* and *Iris*. The flora of SW China

has been exploited by western 'plant-hunters' for well over 100 years and, as we state in our introductory remarks, we see western criticism of Chinese botanists as misplaced. We are ourselves only interested in establishing basic 'breeding-stocks' of about ten clones of each species. From such material many thousands of seeds can be generated to establish these plants in cultivation outside China. This cannot all be done in an instant. Much material coming from China is incorrectly named and this too takes time to sort out. We hope, however, to be able to hold your interest for some years to come.

- 4.005.210 : ACONITUM CARMICHAELII var. WILSONII** (*A. wilsonii*) \* No data. A magnificent, summer-flowering, Chinese perennial. Deeply cut foliage and erect, 2m. high branching stems, distinct with their many, 40cm. long, axillary branches, forming pyramids, massed with deep blue and violet, helmet-shaped flowers. Permanent in rich, moist soil in sun or part-shade. (20+) B
- 4.005.510 : ACONITUM HEMSLEYANUM** \* No data. A Chinese perennial with herbaceous stems twining to 3m. or more. Cut, rich-green foliage & racemes of spurred, violet helmet-shaped flowers in autumn. Splendid in a draughty corner here. (20+) B
- 4.022.810 : ALLIUM MAIREI** \* No data. A charming, small, late-flowering species from SW China. It is hardy and clumps up well in sunny scree in West Wales. Umbels of bright, deep-pink bells on stems about 20cm. high in summer. . . . . (15+) B
- 4.023.000 : ALLIUM PRATTII var. LATIFOLIATUM** \* China, Sichuan, Emei Shan. 2600m. Cliff ledges. Ex E. Needhan 981 (A recent, striking collection, unlike any other *Allium* we have in gardens, tentatively identified by Jill Cowley at Kew as this or perhaps *A. ovalifolium*. Choice and slow-growing but proving hardy with Mike Tucker (Somerset, UK) in his shady *Arisaema*-bed. Clumps of bulbs with reticulate tunics, their necks above the ground, send up, in early spring, big, broad, shiny-green, aspidistra-like leaves, which look good well into the autumn, when rounded umbels of purple-pink flowers rise above them on 30cm. stems. (10+) E
- 4.024.710 : ALLIUM THUNBERGHII** \* No data. A very late-flowering, hardy, little species from Korea and the mountains of central & S Japan. The umbels of many, rosy purple bells on 20cm. stems remain attractive until the first severe frost. . . . . (15+) B
- 4.025.010 : ALLIUM WALLICHII** \* China, Yunnan. Ex CLD 1500. (This clump-forming, summer-flowering species, about 50cm. high with heads of usually lilac to purple, starry flowers varies greatly over its wide range in the Himalaya & China. It seems reliably hardy and no great trouble to grow in most UK gardens but remains little-known. These are all distinct variants.) . . . . (10+) B
- 4.025.011 : ALLIUM WALLICHII** \* Ex S & L 4766. A fine form from Ron McBeath. Fruits usually fleshy and purple. (10+) B
- 4.025.012 : ALLIUM WALLICHII** \* Nepal. Ex a Len Beer coll. (Marvellous, glossy purple-black seed capsules.) . . . . (10+) C
- 4.025.013 : ALLIUM WALLICHII** \* China, Yunnan, Lijiang, Yulong Shan. 2800m. Ex CLD 1029. From M. Tucker. . (10+) B
- 4.044.010 : ANEMONE OBTUSILOBA from BLUE FORM** \* No data. From a good, rich blue form of this very variable, buttercup-like perennial, widespread in meadow habitats through the Himalayas from Pakistan to Burma, between 2000 & 4300m. Flower stems rise to 15cm. from clumps of leaves, in this case, deeply cut and bright green. Seed of both this & *A. trullifolia* drops when green. We are not yet sure how well it can be stored. It has been kept refrigerated since collection & we should be grateful for reports of germination of these two. Even when sown freshly, we find it germinates irregularly, taking about 2 years to show>>) (10) C
- 4.046.010 : ANEMONE TRULLIFOLIA** \* China, Yunnan, Dali, Cang Shan. Ex SBEC 797. (A succession of ice-blue to white flowers from indigo stained buds on decumbent, branching 15-20cm. stems. A charming, recently introduced 'blue buttercup', which seems more accommodating than the old *A. obtusiloba patula* & has been satisfyingly permanent here in peaty scree.) . . . . . (10) C
- 4.045.009 : ANEMONE RIVULARIS** China, Gansu, SE of Tianshui. 1350m. (A wild collection from the NE extremity of the distribution of this montane meadow-plant. Likely to vary somewhat, if not substantially, from the following.) . . . . . (15+) C
- 4.045.010 : ANEMONE RIVULARIS** \* No data. A lovely, 60cm. high meadow-plant, widespread along the Himalaya, from Kashmir E into Tibet & Yunnan. Distinct from the umbel-flowered *A. narcissiflora*-group in its long-stalked flowers, individually cup-shaped, pure-white inside & usually slate-blue tinged outside. Easy & hardy in the UK in a good, moist soil in sun. . . . . (20+) B

## Arisaema : fascinating eastern aroids

- 4.080.500 : ARISAEMA AMURENSE** \* No data. An extremely hardy NE Asian plant. Impressively large, deeply veined foliage with broad leaflets. Green spathes, striped with a paler shade, with elongated deflexed tips. Red autumnal fruits. . . . . (10+) C
- 4.081.510 : ARISAEMA CONSANGUINEUM** \* No data. About 1m. tall with elegant, cut leaves & hooded green spathes, followed by nodding heads of scarlet fruits. One of the most widespread species growing through the Himalaya E into China. . . (10+) B
- 4.081.859 : ARISAEMA DILATATUM** \* China, Yunnan. (Near *A. elephas* with a purple-stained spathe & spadix.) . . . . . (5) E

- 4.082.100 : ARISAEMA ELEPHAS** (*A. wilsonii*) \* China, Yunnan, Cangshan. 3200m. Ex E. Needham 1024. (Illustrated in the recent AGS Bulletin on Chinese plants (Vol.64, No.2, p.186), where Ron McBeath writes "one of my favourites...striking & handsome...reasonably easy to cultivate at Edinburgh." Mike Tucker (Somerset, UK) also finds it vigorous & hardy, though it appears early. Large, trifoliate, rugose leaves, often flushed purple & margined with red. Elongated black-purple spadices snake out from hooded spathes striped with parallel purple & translucent white lines. 40cm.) . . . . . (10+) E
- 4.082.170 : ARISAEMA ERUBESCENS** f. **LATISECTUM** China, Gansu, SE of Tianshui. 1400m. (Wild collected seed & the name may be misapplied by the Chinese botanist. The Himalayan, type-race is characterized by its lovely foliage : parasols of many, pointed, lanceolate leaflets, dark, shining green above & greyish below. The hooded spathes, on rosy, red-streaked stems, are no less beautiful : white striped on a brown-pink to purplish ground and covered with a white bloom . Whatever it turn out to be, this material from the cold, continental climate of Gansu, will btemperature-hardy in most of Europe & N America.) . . . . . (10) E
- 4.082.501 : ARISAEMA GRIFFITHII** \* Nepal, Modi Khola valley towards Annapurna sanctuary. 2600m. Ex E. Needham 389. (A striking thing from the forests of central Nepal into Bhutan. Very large, broad spathes, curving over on themselves and with big, broad side-flaps, all netted with greeny white on a dark purple ground. The purple spadix-appendage narrows to a tail and extrudes. Two large, trifoliate leaves rise above all this. Quite hardy when established in humus-rich soil in shade in the UK.) . . . . (6) D
- 4.082.550 : ARISAEMA GRIFFITHII** var. **PRADHANII** \* No data. From a small area in Lachung, Lachen & Jeluk, in Sikkim, above 3000m, in *Rhododendron* scrub & in more open, rocky places, this is, in effect, the largest & most spectacular race of an extraordinary species. Two big trifoliate leaves overtop the large spathe with broad, lateral lobes, up to 20cm. wide & purple-brown netted with creamy white. The purple spadix-appendage snakes out, tapering to a flagellate tail, 50cm. long.) . . . . . (10+) E
- 4.083.309 : ARISAEMA JACQUEMONTII** \* No data. The most western & maybe the hardest of the Himalayan species, distributed between 2800-4000m., among the alpine & subalpine scrub of drier areas from Afghanistan to Bhutan & SE Tibet. Most cultivated plants probably originate from Kashmir and this form with leaves with 6 tapering leaflets seems typical of these. The elegant, elongated spathes, striped longitudinally in green & white, with their extended, tortuous tips rise up above the foliage. (10+) D
- 4.086.910 : ARISAEMA PROPINQUUM** (*A. wallichianum*) \* No data. A variable, hardy species, widely distributed through the Himalaya from Kashmir to Bhutan & SE Tibet between 2500 & 4000m. One or two trifoliate leaves emerge from brown-mottled cataphylls & deep purple, or occasionally green, hooded spathes, striped with white, surround the spadix, which tapers & extends at an angle from the mouth. The spadix-appendage is shorter than in the allied, rather similar, Nepalese *A. costatum*. . . (10+) D
- 4.099.009 : ARISAEMA TORTUOSUM** \* Nepal, Dudh Khosi valley. 2700m. Degraded forest. Ex a J. Grimshaw coll. (This seems to be a particularly hardy, vigorous, giant form, well established with Mike & Polly Stone (Inverness-shire, UK). The species is one of the tallest in the genus, up to 1m. high or more. Stout, purple-mottled stems with 2 or 3, large, pedate leaves carry green spathes above the foliage. From these an extraordinary, tapering, green or purple, S-shaped spadix-appendage snakes outwards then upwards. Distributed through the Himalayan woodlands from the Punjab E into SW China at altitudes between 1400m & 2800m.) (10+) C
- 4.099.975 : ARISAEMA YUNNANENSE** \* China, Yunnan, Gholigan Shan. 2400m. Rough grassland near stream. Ex I. Stokes 46. 190 (Listed last year without a specific name, we are now fairly confident that this is the correct determination. A tall, elegant plant with one or two trifoliate leaves, greatly overtopped by stems of 50cm. or more, carrying a green & white striped spathe with a long, attenuate tip arching over the curved yellow-green spadix-appendage. Likely to be reasonably hardy in the UK.) . . . . . (8) E
- 4.060.510 : AQUILEGIA FRAGRANS** \* No data. A fine W Himalayan species, distributed from N Pakistan to Uttar Pradesh in subalpine scrub & meadows up to 2600m. Big, creamy columbines, sometimes tinged greeny blue, on 50cm. stems. . . (20+) B
- 4.110.120 : ASTILBE CHINENSIS** var. **DAVIDII** \* South Korea. Ex M.S. Fillan 789 (A wild collection of this parent of many garden hybrids. Narrow, branched spires of fluffy raspberry-pink flowers above dark-green, divided leaves.) . . . . . (50+) B
- 4.111.720 : ASTILBE RIVULARIS** var. **MYRIANTHA** \* China, Yunnan. Ex I. Stokes 163 (The splendid SW Chinese race of this imposing Himalayan perennial for a moist site. Worth growing for the large, beautifully textured, deeply veined, burnished bronze-green foliage alone. Immense branching heads of tiny creamy flowers on 2m. stems very, very late in the season.) . . . . (50+) D
- 4.159.510 : CALOSCORDUM NERINIFLORUM** \* No data. An attractive central Asian bulb, in a monotypic genus, related to *Allium*, spread from the Pamirs through S Russia & N China. Stems of about 20cm. bear umbels of up to 20, bright-pink flowers over a long period in late summer. Not at all difficult, though it resents wet conditions, especially in winter. . . . . (10+) B
- 4.190.550 : CIMICIFUGA SIMPLEX** \* Russia, Sakhalin.. (One of the finest species in this outstanding genus of late-flowering herbaceous perennials. A meadow-plant native from Japan N to Kamschatka with cut foliage & arching, purple-brown flushed stems about 1m. high carrying fine heads of white flowers in autumn. Thrives best in rich, moist soil in partial shade.) . . . . (20+) C
- 4.192.500 : CIRSIUM PURPURATUM** \* Japan, Honshu, Shizuoka Pref., Fujisan, SW slope on lava-slides. 2600m. Ex a D. Elick coll. (Don wrote of his original 1996 coll. : "This is an immense alpine thing restricted to Mt. Fuji & some neighbouring volcanic slopes...easily reaches a yard by a yard or taller in size...it cannot be moved - ever - and is best put where it is to grow as soon as the seedlings have made 3-4 leaves...the flowers are virtually everlasting...I think it has a great future..." Clumps of huge, slashed, bright-green leaves & branched, 1m., cobwebby stems carrying big, nodding thistle-heads of bright crimson-purple flowers, emerging from purple-tinted involucre. Coarse but very classy indeed & of certain impact in bold, naturalistic plantings.) . . . . (10+) D

- 4.200.110 : CLEMATIS AETHUSIFOLIA** \* No data. A very graceful, hardy, small climber, no more than 2m. high, from N China. Finely cut downy leaves & a profusion of little, narrow, nodding, pale yellow bells in late summer. . . . . (20+) B
- 4.200.810 : CLEMATIS FUSCA** \* No data. A more or less herbaceous climber, less than 3m. high, with urn-shaped flowers, characteristic of the N American *C. viorna* group, in dark purple, covered in red-brown wool & carried on short, densely hairy stalks. A fascinating but hardly spectacular species from the Russian Far East through N China to N Japan. . . . . (20+) B
- 4.201.060 : CLEMATIS KOREANA f. LUTEA** \* No data. A NE Asian representative of the circumpolar Sect. *Atragene*, allied to the European *C. alpina* &, most closely, to the N American *C. verticillaris*. A trailer or small climber, less than 3m. high, with coarsely toothed leaflets & pale yellow flowers in this form, in contrast to the dull violet of the type-race. . . . . (20+) B
- 4.202.110 : CLEMATIS REHDERIANA** \* No data. A lovely & distinct, deciduous climber, which can reach 8m., from W China, with downy, pinnate leaves and panicles of nodding, sweetly scented, velvety, primrose-yellow bells in autumn. . . . . (15+) C
- 4.202.200 : CLEMATIS SERRATIFOLIA** \* No data. A Korean climber, about 3m. high & close to *C. tangutica* but with ternate not pinnate leaves. Numerous, downy, soft-yellow flowers with purple stamens in late summer. . . . . (20+) B
- 4.202.510 : CLEMATIS TIBETANA subsp. VERNAYI** \* No data. Climbs to about 4m. with greyish-green, ferny foliage & thick-textured, fleshy, yellow flowers. Most cultivated stock originates from the Ludlow, Sherriff & Elliot 13342 coll. made in 1947 in SE Tibet (long grown as "*C. orientalis*" or 'Orange Peel') but there have been more recent colls. from Nepal. . . . . (20+) B
- 4.221.420 : CODONOPSIS LANCEOLATA** \* No data. A hardy climber (especially distinct in its winged seeds, unlike any other we know) from N China through E Russia & Korea to Japan. Though with such a wide geographical range it is variable, this seed is from specialist Paul Kneebone, who describes it as "one of the best...covered in largish green bells with purple markings", growing about 2.5m. high. Don Elick sent us seed from Japan some years ago & described it as reaching 5m., often in alluvial soil along streams, where "wide open bells reminiscent of a richly coloured *Fritillaria graeca* dangle in profusion." . . . . . (15+) D
- 4.221.850 : CODONOPSIS OBTUSA** \* Afghanistan, Panjshir Valley. 2400m. Beside stream. Ex P. Furse 8643. (A dubious, obscure name, considered to be a synonym for *C. clematidea* or *C. ovata*. We acquired this long ago identified as *C. obtusa* & no other positive, alternative determination has been suggested. Certainly near *C. clematidea* but the big, ice-blue bells lack the internal markings and shade into glossy yellow-green instead. Hardy & reliable with us in a raised bed over many years. . . . . (30+) C
- 4.222010 : CODONOPSIS PILOSULA** \* No data. A climber, close to *C. tangshen*, from montane scrub in N China. The true plant is allegedly in cultivation but, the confusion of names is such that we cannot give a total guarantee this is it. Seed from Dinah Batterham (Dorset, UK) who has grown it outside for many years & describes it as having shiny, yellow-green bells. . . (20+) B
- 4.222.805 : CODONOPSIS VINCIFLORA** \* No data. A less vigorous member of the *C. convolvulacea* group from the E Himalaya & SW China with smaller, thinner-textured, toothed leaves & saucer-shaped, lilac-blue flowers. Twines delicately to no more than 1m. in height. Seedlings are best left to tangle the first season : sort out the dormant tubers & replant in winter.. . . . (20+) B
- 4.225.500 : CORTUSA MATTHIOLI var. YEZOENSIS** \* A race of this charming subarctic shade-lover endemic to the mountains of Hokkaido in N Japan. Particularly densely downy, lobed, rounded leaves & umbels of pendant rosy purple bells on 20cm. stems in summer. Like a little *Primula* in Sect. *Cortusoides* & thriving in a cool, peaty, part-shaded position. . . . . (20+) C
- 4.250.910 : DAPHNE RETUSA** \* No data. Compact, dark-leaved, evergreen shrub native to W China & SE Tibet. . . . . (5) C
- 4.251.010 : DAPHNE TANGUTICA** \* No data. A fine, evergreen shrub also from W China, about 1m. high, with clusters of fragrant flowers, rose-purple outside & lilac-tinged white inside. Close to *D. retusa* but the two are distinct enough in gardens. . . (5) B
- 4.285.500 : DRABA OREADES** \* No data. One of the most worthwhile E Asian species for the alpine-house enthusiast (not to be confused with the similarly named Moroccan *D. oreadam*). A high-alpine, widespread from Central Asia, through the Himalayas to SW China, in rocky places at altitudes between 3500m. & 5500m. Tiny, hairy rosettes compressed into pads or cushions with heads of yellow flowers on 2cm. stems. Not too difficult given careful cultivation by experienced growers. . . . . (20+) D
- 4.265.310 : DELPHINIUM BRUNONIANUM** \* No data. A variable species, widespread in nature above 4000m. from the Pamirs through the Himalaya to SE Tibet. from the form well-established in British gardens and close to *D. cashmerianum*. About 30cm. high with rounded, lobed foliage and chubby, downy black-eyed flowers of dusky purple with stubby spurs in summer.. (20+) B
- 4.266.100 : DELPHINIUM DELAVAYI** \* China, Yunnan, Lijiang, Yulong Shan, between Bai Shui and Hei Shui. 2900m. Ex CLD 895. (Clumps of deeply divided basal leaves and branching stems about 60cm. high carrying a succession of long-spurred, deep blue-violet, white-eyed flowers from late summer into autumn. So far, seems a good, reliable garden plant.) . . . . . (15+) C
- 4.290.500 : DRACOCEPHALUM FORRESTII** \* China, Yunnan, Diqing, 5km. from Zhongdian, by the Lhasa road. 3220m. Ex KGB 728. (Woody-based, sub-shrubby steppe-species with fine leaves & massed heads of little, rich purple, labiate-flowers.) (15+) C
- 4.335.005 : ERITRICHIMUM RUPESTRE var. PECTINATUM (E. strictum)** \* No data. Grey leaves & lots of little turquoise-blue forget-me-not flowers on branching 15cm. stems. Not difficult in really sharp scree, where it will sow itself. . . . . (10+) B

- 4.360.505 : EUPHORBIA CORNIGERA \*** No data. In a confusing group of Himalayan species, this has been grown as the allied *E. wallichii*. Much UK stock possibly originated from seed distributed as *E. wallichii* by the Kohli family, formerly collectors in Kashmir. An attractive hardy perennial, about 40cm. high with a mound-forming habit, apple-green foliage and yellow raylet leaves. Possibly best in the UK in a sunny, well-drained place as long as it does not become too starved or dry in summer. . . . (10+) **C**
- 4.361.005 : EUPHORBIA GRIFFITHII \*** No data. This superlative Bhutan endemic loves our moist, acid clay, growing 1m. or more high here with many, running stems, clad in lush, green or purple-tinged leaves, carrying wide heads of orange-red bracts over a long period in early summer. Accommodating but less luxuriant in drier soils. Seed from the clones 'Fireglow' & 'Dixter'. . . (15+) **B**
- 4.361.410 : EUPHORBIA SCHILLINGII \*** Nepal, Dudh Kosi valley. 2500-3000m. (An excellent late-season species, which can reach about 1m. in height but is usually half that. Bright green foliage with the characteristic pale mid-rib of these Himalayan species and branching stems carrying a profuse display of brilliant greenish yellow bracts until frosted. Good, moist soil in sun.) . . (10+) **C**
- 4.361.610 : EUPHORBIA SIKKIMENSIS \*** No data. Endemic to Sikkim & the most aristocratic of Himalayan spurge. Up to 1.5m. high with heads of rounded, yellow bracts. Beautiful red-tinted young foliage. Not the easiest & best in rich, moist soil (10+) **C**
- 4.390.110 : FRITILLARIA CAMTSCHATCENSIS \*** No data. A marvellous plant with stems of 30cm. or more, whorled with rich-green leaves, carrying nodding, thick-textured bells in darkest brown-purple. Distributed from Japan in a N Pacific arc through Sakhalin & Kamchatka into Alaska & Canada. Utterly hardy & quite easy outside in the UK in a cool situation. . . . . (20+) **C**
- 4.430.510 : GERANIUM CLARKEI from PURPLE FORMS \*** No data. A beautiful relative of *G. pratense* from the mountain meadows of Kashmir between 2000 & 4000m. Mats of creeping rhizomes send up deeply cut leaves and 50cm. stems with large, veined flowers, blue-purple in these forms, usually grown in the UK as 'Kashmir Purple', over a long period in summer. (10+) **B**
- 4.430.511 : GERANIUM CLARKEI from WHITE FORM \*** India, Kashmir, Gadsar Valley. This pale phase, basically white, pencilled with pink veins & grown as 'Kashmir White', seems to be the geographical race dominant in this area. . . . . (10+) **B**
- 4.430.512 : GERANIUM CLARKEI from PINK FORM \*** From 'Kashmir Pink', which occurred in cultivation. . . . . (10+) **B**
- 4.432.010 : GERANIUM SINENSE \*** No data. A late-flowering, 60cm., woodland-plant of SW China, in Yunnan & Sichuan, long grown in gardens as the allied *G. delavayi* &, as such, extolled as a "connoisseur's plant" by such writers as A.T. Johnson & Will Ingwersen. A succession of many, small, inverted flowers with reflexed petals in ruby-black around a coral-pink base.) (10+) **B**
- 4.432.500 : GERANIUM WALLICHIANUM \*** India, Garhwal Himal. Ex an Udai Pradhan coll. (A vigorous, wide-spreading form of this variable species, which dies back annually to a stout, compact rootstock. Bright pink flowers with distinct white centres produced from midsummer until the first severe frosts on prostrate, trailing stems 60cm. or more long. Extremely enthusiastic here - plants moved to a new site among shrubs climbed to over 2m. up adjacent *Magnolia sieboldii*. Quite new & excellent.) (10+) **C**
- 4.432.550 : GERANIUM WALLICHIANUM 'BUXTONS VARIETY' \*** No data. Called after E.C. Buxton, who gardened in N Wales, this comes so evenly from seed that it may be a geographical race. More compact than the Garhwal form, the long succession of soft lavender-blue flowers with large white centres is unrivalled. "A pearl beyond price" wrote G.S. Thomas . . . . . (10+) **B**

## Incarvillea : sumptuous Sino-Himalayan alpines

- 4.478.205 : INCARVILLEA EMODI** (Subgen. *Amphicome*) \* Pakistan, Rawalpindi, Margalla Hills. Crevices of limestone rocks. Ex an A. Paterson coll. (A woody based saxatile perennial from the drier western Himalayan regions, E from the Afghan border through Nepal. Pinnate basal foliage & spectacular one-sided clusters of brilliant pink, yellow-throated trumpets. A beautiful photograph of this, taken by Andrew Paterson in the site of his original seed coll., is in Phillips & Rix 'Perennials' Vol. 1. p. 178. Not difficult under alpine-house conditions with Alan King (Northants. UK) who maintains it from this 1987 coll.) . . . . . (20+) **D**
- 4.478.850 : INCARVILLEA SINENSIS var. PRZEWALSKII** China, Gansu, S of Lanzhou. 1700m. ("This interesting plant does not appear to be in cultivation" comments Chris Grey-Wilson in a review of the genus. A local race, limited to Gansu & Shensi, in a variable species-group. Quite unlike the familiar incarvilleas in subgenus *Pterocleris*. A woody-based perennial, about 30cm. high, with erect, loose racemes of long-tubed bells. Farrer saw it here : "...set with finely feathered ferny foliage & bearing...a steady flight of lovely citron-yellow Allamandas...on the hottest & driest & barest exposures on the hot, bare, dry loess hills...") . . (15+) **D**
- 4.478.140 : INCARVILLEA DELAVAYI \*** No data. Pink form of this Chinese endemic from NW Yunnan & S Sichuan. (15+) **A**
- 4.478.150 : INCARVILLEA DELAVAYI from WHITE FORM \*** From a good white form of this splendid, hardy, herbaceous perennial in *Bignoniaceae*. Beautiful, cut, basal foliage appears from stout, permanent tuberous roots & sturdy, 50cm. stems carry tropical-looking trumpet-shaped flowers. Easy & reliable in good soil in a well-drained, sunny site in the UK. . . . . (10+) **C**
- 4.478.951 : INCARVILLEA ZHONGDIANENSIS \*** China, Yunnan, S of Zhongdian. 3215m. Dry grassy banks on eroded hillsides. Ex ACE 1600. (A spectacular species described in 1998. Allied to *I. mairei* but with numerous, smooth, thin-textured leaves and eventually forming clumps with many 20cm. flower-stems, each carrying about 3 huge bright magenta-crimson trumpets with white flares around their yellow throats. Flowering in early summer and proving to be excellent in many parts of the UK.) . . (15+) **D**

- 4.480.520 : **IRIS CHRYSOGRAPHES** from **DARK FORMS** (Ser. *Sibiricae*) \* No data. A fine wet-grower in Series *Sibiricae* from SW China. We doubt if many named stocks are indeed vegetatively propagated. A good range of velvety purple-blacks can be expected from seed, though hybrids can occur with other members of Ser. *Sibiricae* & even Ser. *Californicae* . . . . . (20+) A
- 4.480.750 : **IRIS DELAVAYI** (Ser. *Sibiricae*) \* China, Yunnan. Ex an I. Stokes coll. (A tall, handsome plant from damp sites in Sichuan & neighbouring Yunnan. Clumps of erect sword-leaves about 1m. high, overtopped by 1.5m. stems carrying several, large violet-purple flowers with white, dagger-like signals on the broad blades of the falls. Easy in a border or by a pond.) . . (15+) B
- 4.481.905 : **IRIS MILESHI** (Sect. *Lophiris*) \* No data. An 1m. tall 'Evansia' from N India, in the W Himalayan region, up to 2700m. Fans of pale-green foliage & branched stems of yellow-crested flowers in lilac-pink mottled with purple, from spreading, green rhizomes. "Beautiful but rarely seen" writes Martyn Rix. Hardy & trouble-free in an open, well-drained site. . . . . (10+) B
- 4.482.200 : **IRIS PANDURATA** China, Gansu, S of Lanzhou. (One of several species in Sect. *Hexapogon* (Sect. *Pseudoregelia*) native to this drier part of W China, none of which is well-known in cultivation. This Gansu & Qinghai endemic has been confused with the taller, more widespread allied *I. tigridia* from NE China & Mongolia. A very desirable dwarf plant from grassy steppe with tufts of linear, greyish foliage about 15cm. high rising from a small, tuber-like rhizome with thick, fleshy roots & covered with the yellowish fibrous bases of the old leaves. Big red-purple flowers with yellow beards carried in pairs on 3-12cm. stems in late spring. Unlikely to be easy to grow in wetter, softer climates and deserving of careful alpine-house cultivation in Europe.) . . . . . (5) E
- 4.482.711 : **IRIS SANGUINEA** from **WHITE FORM** \* No data. A close, NE Asian relative of the more western *I. sibirica*, with which most cultivated stock is likely to have crossed About 50cm. high with white flowers, usually purple-veined. . . . (15+) A
- 4.482.809 : **IRIS SETOSA** (Ser. *Tripetalae*) \* Japan. No further data. Ex an AGS expedition to Japan coll. A handsome species, spread from N China across into Alaska & E to Newfoundland. This & the next are very hardy & best in a rich, moist site. . . (20+) A
- 4.490.010 : **KIRENGESHOMA PALMATA** \* No data. A most distinct, choice, slow-growing, hardy perennial in *Hydrangeaceae*, endemic to the mountain-woodlands of S Japan, where it occurs locally on Kyushu & Shikoku. About 1.5m. high here with erect, purple-black stems, clad in soft-green, palmately lobed, maple-like foliage & ending in branched cymes of waxy, pale-yellow bells in autumn. Flowers with us until cut down by the first severe frosts and loves our acid soil & cool, moist summers, though Bob Brown (Worcestershire, UK) tells us that he has no problems growing it on his very alkaline soil (pH 8.5) as well.) . . (15+) B
- 4.516.001 : **LILIUM AURATUM** (var. *auratum*) \* Japan, Honshu, Shizuoka Pref. Ex a D. Elick coll. (The "Queen of Lilies", a spectacular Honshu endemic, with huge, heavily scented, horizontally held flowers in waxy white, banded with gold & spotted with crimson, on stems of 1m. or more in late summer. A species of hill-slopes at quite low altitudes & likely to thrive best in good, loose, sandy loam in a warm, sunny site in the UK - definitely not in a cool, wet, peaty place. Our own Welsh-grown seed.) . (15+) D
- 4.516.030 : **LILIUM AURATUM** var. **PLATYPHYLLUM** \* No data. Apparently the southern race & rated to be hardier & an easier plant to grow in UK gardens. Broader leaved with enormous flowers with fewer, more central crimson spots. Raising these from seed ensures virus-free plants. It does not take long. We have flowered *L. auratum* in less than 2 years . . . . . (15+) D
- 4.517.610 : **LILIUM DUCHARTREI** \* Scottish seed of this glorious, stoloniferous, W Chinese species, closely allied to *L. taliense* & *L. lankongense*. Brownish, 1.5m. stems with up to 12, pendant, scented, white flowers, with recurving segments spotted with deep purple & reddening with age. Most cultivated stock appears to derive from the 1915 Farrer coll. in S Gansu, where he wrote that 'its cold bone-white turkscaps have a glacial beauty.' Moist but well-drained, humus-rich soil in light shade. . . . . (20+) D
- 4.518.110 : **LILIUM FORMOSANUM** var. **PRICEI** \* Taiwan. 2600m. (A dwarf, alpine ecotype of this species with big, scented, white trumpets, purple-tinted outside. Recorded as not exceeding 45cm. in the wild, it has remained dwarf (or even dwarfer by selection) in gardens. Fairly hardy in the UK, it flowers quickly from seed, if sown in gentle warmth in winter.) . . . . . (20+) B
- 4.520.010 : **LILIUM MACKLINIAE** \* India, Manipur, Sirhoi near Ukhrul. 2300-2450m. Steep, grassy slopes. (All the cultivated stock seems to stem from the collections made by Frank Kingdon-Ward on this one mountain in 1946 & 1948. An exquisite species in the group approaching *Nomocharis* with nodding, white, bowl-shaped flowers, flushed with rose-pink outside, on stems of about 50cm. Perfectly hardy with us - enjoys an acid soil & the cooler, moister summers of the North & West of the UK.) . . . . . (20+) C
- 4.520.910 : **LILIUM PHILIPPINENSE** \* No data. Slender, elegant, 1m., grassy-leaved stems with very long-tubed, horizontally carried, pure-white, scented trumpets, sometimes tinged green or brown outside. One of the most southern Asian lilies, from the mountains of Luzon in the N Philippines. Australian seed but recorded as hardy over several years in N England. . . . . (20+) C
- 4.522.220 : **LILIUM SPECIOSUM** var. **CLIVORUM** \* Japan, S Shikoku, Agawa river gorge. Damp shady cliffs. Ex a D. Elick coll. (From Don's 1988 type-locality coll. of this very local race, described in 1956. Hanging out of the cliffs "like a giant *Tricyrtis*.. stems 6ft. or longer with up to 20 smaller, light-pink flowers on very long pedicels." A truly sumptuous plant, growing successfully in the UK, in rich, peaty soil, both under glass & outside, with gloriously scented, crimson-speckled flowers in late summer.) (10+) D
- 4.542.500 : **LYSIMACHIA DECURRENS** \* China, Yunnan, Dali, Cang Shan. 3000m. Loose gravel in road-cut. Ex I. Stokes 46.092. (A quietly attractive species proving most adaptable in W Wales. About 50cm. high & as much across, because of the spreading side-shoots, with upright racemes of quite large, white, dark-centred flowers carried over a long period in summer.) . . . . . (50+) C

# Meconopsis delavayi : the ultimate alpine poppy

A superlative dwarf alpine species, unlike any other in the genus & placed in a section of its own. Of fairly limited distribution in the wild, confined to limestone screes & stony turf in NW Yunnan, between 10,000ft. & 14,000ft., it has been in an out of cultivation since Forrest's original introduction of 1913. This seed is derived from several collections made in recent years, raised by Ian & Margaret Young in Aberdeen, Scotland, with a view to establishing a strain more adapted to cultivation. It was successfully maintained over many years by Dick Trotter near

Inverness and we grew plants derived from his stock for some time. The main problem in our case was finding the right degree of moisture to keep the overwintering buds in good condition without rotting them or drying them out. It is certainly a challenge but it is also possible and it is perennial. Diminutive rosettes of glaucous, entire, more or less hairless, leaves & large half-nodding, usually 4-petaled, flowers in the richest, most luminous imperial purple on stems of about 15cm. Truly exquisite and one of the most beautiful of all alpine plants.

- 4.550.510 : MECONOPSIS DELAVAYI \*** ..... (15+) **E**
- 4.551.550 : MECONOPSIS aff. HORRIDULA \*** From several collections made in Yunnan. Current thinking is that these should not be placed under *M. horridula* at all & may belong under *M. prattii* and *M. rudis*. It is unlikely, however, that, without a considerable amount of effort, the local races can be kept 'pure' in cultivation. Expect bristle-leaved rosettes and racemes of violet-blue poppies on stems of around 30cm. high. These may be happier with better drainage & more sun than many in this genus. .... (50+) **B**
- 4.552.449 : MECONOPSIS NAPAULENSIS from RED FORMS \*** No data. These cultivated colour-forms mainly originate from the confusing natural hybrids with *M. regia* & *M. paniculata* introduced under SSW numbers from Nepal in 1954. ... (50+) **B**
- 4.552.450 : MECONOPSIS NAPAULENSIS from YELLOW FORMS \*** No data. Both have superb winter rosettes. . (50+) **B**
- 4.574.100 : NEPETA CLARKEI \*** No data. A W Himalayan species from wet habitats in high, dry areas of N Pakistan into Kashmir. Quite accommodating in cultivation here, forming clumps with many, erect, 1m. stems whorled with blue flowers. ... (20+) **B**
- 4.574.310 : NEPETA GOVANIANA \*** No data. One of our favourite plants for a cool site. A pale yellow-flowered, W Himalayan woodlander from N Pakistan & adjacent NW India, it enjoys our moist acid soil, flowering all through late summer and autumn with airy flights of long-tubed flowers carried on long pedicels from widely branching, velvety-leaved stems about 1m. high. (20+) **B**
- 4.574.500 : NEPETA SUBSESSILIS \*** No data. A pleasant perennial, growing easily here. From moist mountain slopes in N Japan, on Hokkaido & Honshu. Stout, erect stems, about 60cm. high, with toothed, downy leaves carry densely verticillate, terminal spikes of lavender-blue flowers, individually large for the genus & like little penstemons. Late-season & long-flowering. .... (20+) **B**
- 4.576.509 : NOTHOLIRION BULBULIFERUM (*N. hyacinthinum*) \*** China. Ex Cox 5074. (A beautiful lily-relative, which can reach 1m. high with racemes of up to 30 horizontal, lilac trumpets, tipped with green. Distributed in alpine meadows from Nepal into W China, it is most likely to succeed in the UK in a cool, part-shaded site in moist but well-drained, humus-rich soil.) ... (15+) **C**
- 4.581.000 : PAEONIA OBOVATA** Russia, Sakhalin. (Possibly the pale-rose race, which is the only one we can find recorded from this island immediately N from Japan, & not the white. The two are also supposed to differ in their stigmas & follicles. All this group, about 50cm. high, have beautiful, lobed foliage. A further opportunity to acquire seed from this obscure locality.) ..... (6) **E**
- 4.580.501 : PAEONIA LACTIFLORA** Russia, E Siberia. The wild species is virtually unknown in gardens, where its influence is manifest only in the multitude of hybrid herbaceous species. Should have large white flowers with golden stamens. .... (6) **D**
- 4.581.600 : PAEONIA VEITCHII var. WOODWARDII \*** No data. Wide, dense clumps of shiny green, deeply cut foliage & slightly drooping, bowl-shaped flowers, usually in soft rose-pink. From around 3000m. in W China, in Gansu & NW Sichuan, & an excellent grower in the UK. This ill-defined variety is said to be distinguished by the longer hairs on the leaf-veins. .... (8) **C**
- 4.581.610 : PAEONIA VEITCHII from WHITE FORM \*** This appears to be a white variant of *P. veitchii* var. *woodwardii*, a lovely plant, very rarely seen in cultivation, with pure-white flowers against cut, bright-green foliage. Our past experience indicated that a reasonable proportion will come white from seed with the balance in a very pale pink. .... (6) **E**
- 4.594.020 : PODOPHYLLUM HEXANDRUM (*P. emodi*) \*** No data. Slow-growing, herbaceous, woodlander from the Himalaya into China. Pink or white, cup-shaped flowers top the expanding leaves; squashy, scarlet fruits dangle below in autumn. (8) **B**
- 4.598.120 : POLYGONUM AMPLEXICAULE var. PENDULUM (*Persicaria amplexicaulis* var. *pendula*) \*** Nepal, Arun Valley. From the excellent & distinct form introduced in 1971 by Beer, Lancaster & Morris and grown as 'Arun Gem'. Close clumps of foliage & a profusion of dangling, rich rose-pink lambs-tails on 40cm. stems all late summer & autumn. Very classy.) .. (20+) **B**
- 4.599.710 : POTENTILLA NEPALENSIS \*** India, Himachal Pradesh, Kulu, Parasher. 2100m. Open meadows. Ex R. McBeath 1698 (A really excellent form from Ron's 1985 coll. Wiry, branching, 40cm. stems curve upwards to carry a succession of flowers in rich, deep cherry-pink with darker centres, on & on from late summer until ended by the first severe frost.) ..... (20+) **B**
- 4.604.009 : PRIMULA BULLEYANA (Sect. *Proliferae*) \*** China, Yunnan, Hei Shui. 2800m. Marshy riverside meadow. Ex ACE 2484 (From a recent collection of this early summer-flowering, candelabra primula, distinct in the beetroot red midribs to its leaves. White-mealy stems up to 1m. high with whorls of yellow to pale orange flowers opening from scarlet buds.) ..... (50+) **B**



- 4.616.009 : PRIMULA FLORINDAE** (Sect. *Sikkimensis*) \* Tibet. Ex K. Rushforth 3579. (From a new collection of this magnificent plant, possibly the first since the 1924 Kingdon Ward introduction. Narrowly endemic to the Tsangpo basin of SE Tibet but naturalised in the UK & an important garden-plant. The largest in its genus with huge umbels of up to 80 fragrant, sulphur-yellow bells hanging on mealy stalks atop a stem up to 1.5m. high. in mid to late summer. Easy in any rich, wet soil.) . . . . . (50+) **B**
- 4.624.010 : PRIMULA MOLLIS** (Sect. *Cortusoides*) \* No data. A most distinct species, scattered around the headwaters of the Brahmaputra & Irrawaddy, from Bhutan to Yunnan, at altitudes up to 3300m. Downy, pale-green, rounded leaves, like opening umbrellas, on woolly stalks & 30cm. candelabra of little rosy crimson flowers. For a cool, moist, sheltered site. . . . . (50+) **B**
- 4.699.000 : RHEUM ALEXANDRAE** \* China, Diqing Pref., Tian Chi, Lake W of Xiao Zhongian. 3850m. Ex KGB 767 (Neat clumps of smooth, dark-green, leathery foliage send up 1m. flower-stems wrapped round with striking, inflated, greenish-cream, papery bracts. It did well on the deep, peaty fen-soil of Bressingham Gardens & they used to use this a centre-piece of their Chelsea exhibits in the 1970's but it is not an easily suited plant in most gardens. Worth every effort, however. . . . . (15+) **C**
- 4.699.600 : RHEUM PALMATUM from RED-LEAVED FORM** \* One of the most imposing of herbaceous perennials but it needs space for its very large, deeply cut leaves, which in the parent are crimson, flushed with scarlet, as they emerge in spring, remaining crimson-tinted below well into summer, when a panicle of brilliant cerise flowers soars to about 3m. high. This is from 'Red Herald', selected, when we were at Buckshaw Gardens, as the best out of hundreds of seedlings from the variable plants circulated as 'Atrosanguineum', 'Bowles' Variety', etc. Sow the seed promptly, select the best but please don't call them 'Red Herald' (20+) **B**
- 4.699.601 : RHEUM PALMATUM from GREEN-LEAVED FORM** \* From our other selected clone 'Green Knight', raised from a plant we had as *R.p.* var. *tanguticum*. Green-leaved but, if anything, larger & more spectacular in its soaring stems of vivid cerise-red flowers. The very fine, jaggedly cut foliage tends to remain in better condition in recent hot summers. . . . . (20+) **B**
- 4.830.505 : ROSCOEA CAUTLEOIDES** \* An arresting, SW Chinese relative of the gingers with hooded, orchid-like, cool-yellow flowers in late summer. Slow-growing but permanent in well-drained, humus-rich or peaty soil in light shade. . . . . (20+) **B**
- 4.838.049 : SALVIA BULLEYANA** \* China, Yunnan. Ex CLD 981 (A dry-meadow plant, hardy & easily grown in the UK. Big, bold, cordate leaves and 1m. stems with many, paired, soft-yellow flowers with distinctive brown-purple lower lips.) . . . . . (15+) **B**

## Thalictrum : the epitome of grace

The E Asian *Thalictrum* species with petaloid sepals are surely among the most delicately beautiful of all hardy herbaceous plants. We are now growing material received both from Chinese sources and from western collectors under a variety of names and early indications are of considerable confusion in names. We guess that we are probably looking at a very few variable and intergrading species, all very beautiful indeed but very confusing. For instance, having now some Chinese

identified *T. delavayi*, we are far from convinced that the name should have been transferred indiscriminately to all the UK garden stock, previously grown as *T. dipterocarpum*. This has not happened in the rest of Europe. A fine & very distinct ACE coll. would seem to fit well under *T. dipterocarpum*. A taxonomic review would be useful. Whatever their names, they are all lovely plants for cool, moist, humus-rich soil, preferably in part shade, flowering from midsummer into autumn.

- 4.878.210 : THALICTRUM DELAVAYI** (*T. dipterocarpum* of UK gardens) \* No data. An exquisitely elegant & airy, 2m. high perennial from Yunnan. Maidenhair fern foliage & wiry, 2m. stems dividing into a multitude of branches to carry a myriad clear lavender-purple flowers, the petal-like sepals surrounding the bunch of hanging stamens. Cool, sheltered site. . . . . (20+) **A**
- 4.878.211 : THALICTRUM DELAVAYI from WHITE FORM** \* No data. Pure-white flowers and paler green foliage. (20+) **B**
- 4.878.250 : THALICTRUM DIFFUSIFLORUM** \* No data. Native to SE Tibet at about 3500m. with exquisite soft-lavender flowers, the largest individually of those listed here and the foliage is very finely cut into the smallest leaflets. It is, however, both the most difficult to suit and to place in the garden. Its habit is adapted to straggling over shrubs & it needs support. We remember it many years ago, climbing to over 3m. on a wall in N. Ireland but it will be doing well if it reaches 1m. in most gardens. . . . . (15+) **D**
- 4.878.280 : THALICTRUM DIPTEROCARPUM** \* China, Yunnan, possibly above Wengsui. 3590m. Mixed woodland. Ex an ACE coll. (One of the finest herbaceous plants to come out the ACE collections but it arrived unannounced under the confused 1881/1887 numbers. A dwarfer plant than what we grow as *T. delavayi*, under 1m. high with very deeply coloured flowers, especially striking when these are combined with distinctively broad-winged seeds, which assume rich purple tints as they mature.) . . . . . (15+) **C**
- 4.890.801 : TROLLIUS YUNNANENSIS** \* China, Yunnan, above Wengsui. 3590m. Mixed woodland in degraded *Abies* forest. Ex ACE 1881 (distributed as 1887). (Glorious wide-open, rich yellow flowers. A meadow plant about 30cm. high) . . . . . (20+) **B**
- 4.940.100 : VIBURNUM BETULIFOLIUM** China, Gansu, SE of Tianshui. 1500m. (A new wild coll. of this deciduous shrub, about 3m. high with toothed, ovate leaves, and one of the finest of fruiting species, "when its slender branches are weighed down with the heavy trusses of bright red, translucent berries", writes 'Bean'. Fruits best when two clones are grown together and it did well on alkaline soils when we were in Dorset. Some cultivated material may originate from Farrer's 1914 coll. in this area.) . . . . . (10+) **B**

Our main object is to bring you seed from wild plants. The selections and hybrids listed here are too far removed from the wild to be included in the main parts of our list but the parents are excellent garden-plants & can be expected to produce some worthwhile children.

- 6.100.050 : ASTILBE SIMPLICIFOLIA HYBRIDS** From 'Sprite', 'Inshriach Pink', 'Bronce Elegans' & several others. Finer foliage & much daintier, more open inflorescences of pink or white flowers than the common, taller, heavier hybrids. . . . . (50+) **B**
- 6.100.500 : ASTRANTIA MAJOR from 'RUBY WEDDING'** If you can get hold of the genuine clone from division, the parent is a really outstanding selection of this European mountain meadow-plant : about 60cm. high with brilliant crimson heads & dark-green foliage. There are a lot of seedlings around, however, under a variety of other names. Most are likely to be pretty good. (15+) **C**
- 6.223.000 : BERGENIA from RED HYBRIDS** From some of the best modern crimson flowered hybrids : German ones like 'Abendglocken' & 'Admiral' as well as some of our own, like 'Bartok'. Good, tough foliage colours well in winter. . . . . (50+) **B**
- 6.223.100 : BERGENIA from WHITE HYBRIDS** From our compact white-flowered hybrids, bred from *B. stracheyi* 'Alba', such as 'Britten', 'Bach' & 'Beethoven'. Most seedlings will be apple-blossom pinks. Bronze weather-resistant winter-leaves. (50+) **B**
- 6.501.450 : GERANIUM from 'BROOKSIDE'** The parent is supposedly a hybrid between *G. pratense* and *G. clarkei*, though its general appearance is much nearer to the former. It is very fertile & seedlings are comparatively even in appearance. Fine garden-plants with spreading stems producing successions of large, rich violet-blue flowers over a very long period in summer. (10+) **B**
- 6.700.000 : LEWISIA COTYLEDON from DRAKE'S SUNSET STRAIN** Long-established as one of the finest strains of *L. cotyledon* hybrids, this seed is from the last parent clones selected by Jack Drake before his death. Especially heavy on large-flowered bright orange shades, some tending almost to scarlet, but with deep pinks & yellows as well. . . . . (20+) **C**
- 6.720.001 : MECONOPSIS X SHELDONII** The hybrids between *Meconopsis grandis* and *M. betonicifolia* are often sterile. This is from a fine form given to us by Jack Drake. It is both fertile & reliably perennial. Intense blue poppies on 1m. stems . . (30+) **B**
- 6.747.800 : PAEONIA from 'CLAIRE DE LUNE'** The yellow peonies, like *P. molokosewitschii* & *P. wittmanniana* will occasionally hybridize in gardens when other species are in flower at the same time, often producing beautiful plants in soft, apricot-tinted creams & pinks. Some have been named & this is from the old French *P. wittmanniana* hybrid 'Claire de Lune'. . . . . (6) **C**
- 6.747.850 : PAEONIA SUFFRUTICOSA from CHINESE HYBRIDS** Cultivated tree-peony seed from China collected from a wide range of named hybrid clones : mainly doubles, in purple, pink, white & green. What might result is unpredictable. . . . . (6) **C**
- 6.747.860 : PAEONIA SUFFRUTICOSA from GANSU MUDAN** This is from a Chinese nursery specialising in growing Chinese tree-peonies in their home in the far western province of Gansu, where most of the collecting by Farrer & Rock took place. The name 'Gansu Mudan' means simply Gansu (Kansu) tree-peony. The basis of their stock has been *P. s.* subsp. *rockii* and this seed is more than likely to yield plants which will approximate to the Rock collection, which it must be remembered was from a cultivated plant in the first place, gathered in 1925 by Joseph Rock from plants growing at the Choni lamasery in Gansu at 2600m., where it had first been seen by Farrer. We can be confident the cultivated seed will produce huge flowers "refulgent as pure snow and fragrant as heavenly roses with a heart of gold", as described by Farrer, & we hope we can offer more assurance of "each stainless petal flamed at the base with a clean and definite feathered blotch of maroon" than we could with the wild seed listed previously . . . . . (5) **E**
- 6.650.650 : PRIMULA from 'WHARFEDALE BLUEBELL'** The parent, an excellent little hybrid in the auricula section, is maybe the nearest to a true blue which has been produced so far and, unusually for these plants, it is self-fertile. Jim Almond tells us he has raised some very fine seedlings from it. Well worth sowing & growing on for the alpine-house, scree or trough. . . . . (15+) **C**

**Thanks for your help and support in 1999. Our best wishes to all of you for 2000.**

While our main aim is to offer you seeds collected or grown by ourselves, it would not be possible to produce a list with such a wide range of material without a vast amount of help from many friends in Britain and abroad. Collectors are mentioned in almost all instances but it is not possible to name sources of cultivated material in most cases. We are grateful to : John Andrews & Mike Broder, Greg Greger, Jim & Georgie Robinett (all California, USA), Jim Almond (Shropshire, UK), Charles Bailey (BC, Canada), Dinah Batterham (Dorset, UK), John Blanchard (Dorset, UK), Simon Bond (Glos., UK), Peter Chappell (Hants., UK), Phil Cornish (Glos., UK), Trevor Crosby (Wales, UK), Martyn Denney (Hants., UK), Alan Edwards (Surrey, UK), Don Elick (Japan), Hermann Fuchs

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