Our list of 1990 seeds appears much earlier than has been our custom in recent years, when our lists seem to have come around Christmas. It is, however, at least a month later than we had intended. As the emphasis in this list is on species which will germinate more rapidly and satisfactorily if sown as soon as possible after ripening, please do not delay in letting us have your orders. As ever, we shall do our best to send the seed to you as soon as we possibly can.

ORDERING could not be easier. Prices are quoted on each page in US \$, £ sterling, DM and French Francs; with two qualifications, we shall accept your personal cheque in any of these currencies. The two exceptions are: US \$ CHEQUES must be on a U.S. bank account - charges for negotiating cheques on foreign accounts are extremely high in the U.S.A. ; please do not send us Eurocheques made out in US \$ - they are unfamiliar to the U.S. banking system. PAYMENTS FROM FRANCE do cause us some problems. We shall probably discontinue pricing in FF in 1991 but for the moment could we ask French customers not to send personal cheques in FF and especially not to use cheques on 'La Poste'. These are both proving very difficult to negotiate. A Eurocheque made out in £ sterling is excellent; a Giro payment in sterling is used by most of our French customers - you can price in FF and have the current equivalent sent to us in £ sterling; FF cash sent to us by registered letter is also no problem. Sorry about this but we cannot control banking. In this list, we are keeping our price structure steady. Price codes remain unchanged from 1989 and remain the same as in our 1989 North American List, which is still valid, and our 1990-91 Seed Bank Supplement. We shall hope to keep the same structure into 1991. If fluctuations in exchange-rates mean it is advantageous to you to select a currency other than your own, please do so - it makes little appreciable difference to the operation of our business. Apart from personal cheques, payment can be made in bank-notes in any of these currencies (please send by registered mail), a bank draft or International Money Order (in sterling for these please). We do not operate a Giro Account to enable direct transfers nor do we accept credit card payments. If remitting by sterling cheque, it is a great help to both you and ourselves, 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 pay only for what we have sent, after the order is despatched). If you cannot do this, a list of some substitutes will be very helpful - we shall not use them unless we have to. Order as soon as you can - especially this season - the sooner we have your order the faster the seed can be with you. Remember we do not pay in your cheque until after the order has been despatched - it is in your interest, as well as yours, to complete orders quickly. Finally, we should stress:

THERE IS NO CHARGE FOR AIRMAIL ON THE SEEDS OR ON THE SEED-LISTS

PLEASE PRINT YOUR NAME & ADDRESS CLEARLY

PLEASE UNDERSTAND There may be a delay of some weeks before you receive your order. The majority of orders come in very quickly, during the first week or so after we send out a list. We receive your orders very much faster than we can despatch them. You may think that because you ordered as soon as you received this list, we can send seed back just as promptly. A great many other people ordered that same day. We normally send out a list only once each year; we have to derive our whole year's income from it: we have to handle a lot of orders! We try to avoid listing collections unless we think that there will be enough seed to satisfy the demand, so there should be no concern over this, even if you are not ordering by return. On the other hand, it is more in your interests than ours that some seed in this list is sown as soon as possible. As many of our customers garden in the Southern Hemisphere and this urgency is less important to them, this list will remain valid into 1991 but we should point out that we shall not be in the U.K. for too long after completing the main bulk of orders and that in everyone's case this time it is a matter of 'the sooner, the better'. We are well-advanced with packeting and hope to be able to move fairly quickly. If you are concerned and feel that your order is too long in arriving, check with your bank to see if your cheque has been cashed – we do not pay-in cheques until after your order has been despatched. If it has been cashed, let us know immediately. A very few items do become lost or delayed. You will find us totally sympathetic. These are very rare occurrences.

BEST LAID PLANS proverbially often fail to come to fruition. Our plans are never in this category and usually tend to develop as we go along. The rather vague intentions, drawn from a pool of possibilities on which we try to run our lives, are frequently confounded by a change in circumstances. The policy of 'planned fluidity', which we have adopted when collecting, seems to percolate into our existence more and more. We had every intention, when we wrote the Newsletter accompanying our December, 1989, List, to have a new list in your hands around the end of July or in early August at the latest. What might have been in this and how this might have been accomplished is now no longer relevant. No matter what we might have brought you this season, we think you will find a lot of exciting material in the present list; a surprising number of species have not been listed by us (nor by anyone else) previously and several, which we have listed before, have not appeared since 1984 or 1985. It is disconcerting how many years we have been sending out these annual lists! The main reason for the contraction of the gap between the 1989 and 1990 lists is that we are attempting to tighten up our schedule so that we can spend some time in the Southern Hemisphere. It is not easy to alter the routine from areas where the peak season for seed lies between June and August to ones where it occurs between December and February. We 'plan', if we dare use the word to do some collecting in S America, during the latter period, 1990-91, with a list issued, we hope, in the following April-May. Who can say how near we shall come to realising our present intentions! Some of you may be reacting with the thought that S America is becoming a little overexposed from a collecting viewpoint. If you are, we feel that you will be involved only with alpine-plants. We do cast our nets very widely and try to satisfy a very wide range of specialised interests; not so many of those who obtain seed from us regularly are concerned exclusively with the challenge of difficult and new alpine-house plants. Even those whose enthusiasm lies solely in this field should still be easily satiated. We are hardly talking about yet another trip to the Alpes-Maritimes or the Sierra Nevada; the area is incomprehensibly vast and the possibilities still little explored. We shall see what we can do to keep everyone interested in due course - when we have time to think about it! It is increasingly a struggle to prevent life running away with us - our short collecting trip to S Europe in 1990 was by necessity one of the most compressed and intensive we have made. It had to be so as we were seeking early seed over an extremely wide area. It is obviously a much more expensive procedure to collect such diffuse material than it is to make peak season collections in July and August. With this in mind, we abandoned our Land-Rover, now essentially retired and put out to grass, for one of its infant relatives, a little Rover Metro, hired from our local garage. In this we were able to zip up the mountain roads of Europe and speed along the autobahns, autoroutes and autostradas with ease. Long wheel-base, diesel Land-Rovers feel quite a home in Turkey among the belching black fumes of Turkish trucks crawling up to mountain passes but suffer embarrassment as misfits among the traffic of metropolitan Europe. This is not to say that there were not a few occasions when we felt deprived of the facilities offered by our old friend and there were one or two localities we felt it wiser not to attempt in 1990. Notwithstanding the limitations placed on our activities by using a conventional, hired vehicle, we suspect we shall be doing the same in S America. When John Watson was collecting in Chile in 1971-72 he actually found a Land-Rover to hire there - at horrifying expense we might add. His expenditure did not obviate the vehicle problems we all experience. AT HOME ON THE HOUSE RANGE In spite of the minor irritations - the odd cracked spring and the oil that seeps out - insidiously - and, of course, the discomfort, we have never been left in a difficult situation because of our Land-Rover. It has, indeed, been a love-hate relationship. We have always experienced a definite feeling of security when using it. We came across an old letter from Larry Bailey of Seattle, Washington, recently where he remarks that he envied us our Land-Rover when he went in search of Primula domensis in the House Range of W Utah a few years ago. When we went in search of this species ourselves in 1989, we could not have echoed his sentiments more wholeheartedly. The House Range lies just N of Highway 50 not far from the Nevada line. It has become a slightly busier road in recent years, since some journalist tagged it "the loneliest road in America", and you can buy stickers and buttons to impress your friends - "I survived - 50 - the loneliest road in America". If the writer had genuinely wanted to find a lonely road, he would have turned N or S on to one of the dirt roads which disappear into nowhere. Two of these give access to the House Range and we had set off with the intention of driving the loop between them. We might interpolate here that we had not done our homework and that the episode had resulted from our 'planned fluidity' policy; we happened to be passing and thought we might try to find the plant. I reckoned that if I could find Dionysias I could find P. domensis. Indeed that might have been the case as it rapidly became obvious that the limestone mass of Notch Peak was sliced into a vast, N-facing vertical cliff - an ideal habitat. The problem was that we could see no obvious means of access from the W side. As it turns out, we were doing the thing the wrong way round and we might have been quite a long time in reaching the Primula from that side! Anyway, it rapidly became an irrelevant line of thought. One of our tyres blew. No problem, it was soon replaced. The engine, having enjoyed a short rest, decided that it would not restart. Knowing the temperamental nature of VW's (we have now had a love-hate relationship with two of these as well), we handled the recalcitrance with amazing patience and gentleness. All to no avail. The battery reached the final stages of expiration. At this point, we were reaching our final possibility. There were a few yards of dirt road available before an incline started. If the engine did not fire at the first push, we had a long walk back to the 'Loneliest Road'. The temperature was well over 40°C (a lot over 100°F) - Jenny volunteered to push. It started. The points had simply been trying to weld themselves together: 'Damm fools. You don't put Japanese points in a German engine', said a Utah mechanic later as he replaced everything with Bosch parts. At the time, we did not wait to diagnose the problem and we were certainly not chasing Primulas in the House Range without a spare tyre and with our engine acting up. The 'Loneliest Road in America' looked a very civilized, populous place when we at last returned to it. As you will find later in this list, John Andrews has succeeded where we failed and, after two high-powered trips to the Great Basin this summer, has returned with seed not only of the House Range primrose but of P. nevadensis.

CUPID UNCHAINED During one of our all too infrequent transatlantic telephone conversations this summer, I heard briefly about John's hunt for the primrose. "Tell me," I said, "did you see anyone else at all when you were in the House Range." "No," replied John,"but there was a car parked near the entrance to the draw I hiked up." I was about to ask how thick the layer of dust on the vehicle was - entertaining some thoughts that it probably belonged to the last botanist who went to find P. domensis - when John added, "Probably hunters. The bow and arrow season has started." A chilling thought. Not only is there the possibility of being skewered by a steel shaft but no-one might find the remains for weeks - months - years? Definitely an over-reaction to one of the less publicised but by no means remote hazards of plant-hunting in the U.S.A., fostered by Fred and 'Boots' Case. My experience with them in Michigan, while being taken to visit one of Fred's favourite boggy haunts, immediately came to mind. We had found a vacant vehicle parked at the start of a woodland path, just as John had done. Prior to this I had been able to observe with a certain amount of detachment that there was a considerable number of Ramboesque figures clad entirely in camouflaged clothing, walking around carrying some very sophisticated ironmongery and obviously prepared to impale any luckless herbivore around that day. "These guys shoot at anything that moves." said 'Boots'. Fortunately they appear to puncture each other's egos more frequently than those of the innocent.

"Keep talking!" said Fred, "You should have been wearing something red - or orange!" Not wishing an end like Saint 'Boots'. "Paint his cows?" I asked. Rather tired of having his livestock prematurely kebabed, he had embellished each with the label 'THIS IS A COW'.

A CASE OF THATCHERITIS ? Fred Case is, of course, one of the most brilliant plantsmen in N America. He is also a marvellously stimulating individualist and one of the most knowledgeable and entertaining lecturers on plants in the world. His talk at the 'International Rock Garden Plant Conference' at Warwick in April, 1991, will surely be a highlight of the event. "I'm not going," said Kath Dryden (a Vice-President of the A.G.S. she'll probably change her mind!), "I only want to hear Fred Case. John Amand (who is also only interested in she'll probably change her mind!, "I only want to hear Fred Case. John Amand (who is also only interested in hearing Fred Case talk about Trilliums!) and I were going to drive up for the day to hear Fred but it is £60 each on the Wednesday because he's speaking." "No it's not," we said, "It's £15 more on the Wednesday for your dinner." "But we don't want the dinner," said Kath, "John and I will have to drive back home then." Hard luck, Kath. Pay—
-up or do without. What is somewhat disconcerting is that rather a lot of people we feel should be going to this event appear to be deciding to do without. The bottom—line has to be 'Is it a good buy?'. The cost of the Conference for a couple would be £660; with travelling expenses and the odd drink or buying a few plants, you have to be look—inc. the first or a figure approaching £1000. For delegator coming from the U.S.A. way and double this to expense in force. -ing at a figure approaching £1000; for delegates coming from the U.S.A., you can double this to cover air-fares - about £2000 for two or near \$4000, unless Saddam Hussein commits suicide over the next few months. You can do a lot with an amount like this - have a holiday abroad to see the plants growing wild instead of listening to a lot of people talking about them! We were very enthusiastic about this Conference when we wrote our last Newsletter in December, 1989; we had every intention of putting up a small exhibit where we could chat with people. We have dropped the idea, on grounds of costs and time. We had to ask 'Is it worth it?' I do not even have to count my costs as I am speaking. Jenny's fee would be £330, we were going to have large colour prints to pay for and the trouble of bringing together, labelling and mounting herbarium material, we would have had to hire transport and pay £50 for the space to stage the exhibit. Adding it all up we were nearer £1000 than £500. Sorry. It is too expensive a public relations exercise. Those who want to speak to us will have to find us! I shall be around a lot of the time and Jenny will be lurking around the Show area. Do not for one moment think we do not sympathise with the organisers. It is a thankless task trying to strike the correct balance and an impossible one to suit everyone. We have no doubt what--soever that for those who attend it will be a memorable event and be voted an overwhelming success. Amid the selfcongratulation we shall be thinking of the multitude of specialists and expert growers whose only participation will be to have attended the Show. My own thoughts will be tinged with nostalgia for the first Conference I attended in 1961. This was held for one week in London and one week in Edinburgh, where I was a student. I could not afford to travel to London nor could I afford conference fees. I was a member of the Scottish Rock Garden Club but no-one ever asked to see my membership card or any other piece of paper when I attended lectures by people like Carleton Worth and Wilhelm Schacht. It was a historic occasion to me. Someone today who is in a similar position and who could not 'pay-up' would certainly have to do without. Even those who can afford to 'pay-up' are capable of doing some small calculations on the back of an envelope. Most people I know had expected that the fee would be nearer £200 than £300. We can all look at recent conferences fees, whether in the gardening world or outside it. £250 would seem to us a fair estimate, taking the cost of the Exeter Diamond Jubilee Conference as a starting point, adding 10% compound for inflation and adding £50 for luck. We have heard a rumour being put about that the speakers are costing £100 per delegate on a break-even figure of 600 delegates. This is £60,000. We are perfectly able to work out what the speakers are costing. At a very generous estimate - ludicrous in that would include speakers being costed for the entire conference fee each - we cannot see how their costs can exceed £15,000 - or £25 per head on 600 delegates, dropping to £18.75 on the 800 who should have been there. This would leave a £45,000 excess available for the baubles and gewgaws distributed at such events. Could it be that our charitable societies are imbued with the enterprise culture of the Thatcherite era and wish to make a profit? For that sort of excess they could have afforded some proper 'names' in the world of horticultural lecturers - like Roy Lancaster or John Kelly.

This section updates our December, 1989, list of North American collections. The 1989 list remains valid and the majority of species are still available. A list of items which must now be deleted follows at the end of this list.

SECTION I : SEEDS COLLECTED IN NORTH AMERICA, JUNE - JULY, 1990, BY JOHN ANDREWS

Our good friend and companion for some of our time in the USA in 1989, John Andrews (Berkeley, California) has produced some material of outstanding interest - in spite of the fact he spent three weeks earlier in the season with Norman Stevens in Turkey. His hurried journey to the Great Basin was made mainly in the hope of collecting seed from one or two of the relic Primula spp. there. We failed to come up with any of these last season. John reached one of the sites he wanted to but found he was far too early this year. He may attempt an August collection of P. nevadensis and we hope we may be able to make it available in due course. Nevertheless the journey had its compensations as you will see. John has pointed out three corrections to the identifications of material he collect -ed in 1989: 11826 listed as Draba densifolia is D. oligosperma; 11827 listed as D. oligosperma is D. densifolia. The Mt. Eddy Gentian (11845) listed as G. setigera appears to be the very closely allied G. calycosa. We also list here three 1989 collections from John made too late for inclusion in our main North American list.

ASTRAGALUS COCCINEUS California, Inyo Co., White Mountains near Toll House Springs. 1980 m. Loose, stony clay slope. 23.6.90 (A surprisingly late coll. from the same colony as we collected from in 1989 - these desert species will often flower again if there is sufficient rain. Most opportune as our 1989 seed is now finished. An amazing plant with scarlet flowers and horned, white velvet pods on woolly white tufts. One of the greatest and most worthwhile challenges imaginable for the alpine-house specialist. More comments in main list!) (8+ seeds)

CALOCHORTUS BRUNEAUNIS
Nevada, Humboldt Co., Paradise Valley above Solid Silver Creek, Santa Rosa Ra. 1530 m.
9.9.89 (This and the following two belong to Sect. Mariposa, Subsect. Nuttalliani. Little-known in cultivation, this is a plant of Artemisia scrub in the mountains round the NW edge of the Great Basin. Its exquisite white flowers with purple spots above the glands are close to C. nuttallii but the green-striped petals distinguish it.
Our Californian coll. of this from Conway Summit (11727) is also still available.)
(20+ seeds) D

CALOCHORTUS EXCAVATUS California, Inyo Co., Gerkin, Owens Valley S of Bishop. 1350 m. Among grasses and scrub. 23.6.90 (Almost certainly the first time seed has been collected of this little-known species, which survives in a few spots in Owens Valley between the Sierra Nevada and the White Mts. Its predilection for dampish sites may well be its undoing as the rape of the Owens Valley water to appease the insatiable needs of Los Angeles will surely lead to a steady lowering of the water-table and possible elimination of its few habitats. We hope it may prove growable. A distinct plant with widely bell-shaped, erect, pale lavender flowers. 30 cm.) (15+ seeds) F

CALOCHORTUS PANAMINTENSIS California, Inyo Co., Panamint Mts., Wild Rose Canyon, below Charcoal Kilns. 1850 m. Along banks of 'wash' in Artemisia scrub. 24.6.90 (As obscure and local as the preceding but much more numerous within the confines of its limited habitat high in the Panamints which border the western rim of Death Valley. Just S of this site Telescope Peak rises to 3768 m. and a mere 20 km. due E lies the lowest elevation in the USA - 86 m. below sea-level. This disjunct and isolated species, of which this is surely the first seed-collection, is allied to C. bruneaunis and C. nuttallii but seems distinct in its unspotted petals and bluish anthers. It is also a robust plant up to 60 cm. high. Will need steppe-plant conditions like the more northern and eastern species - cold and dryish in winter - and will probably prove a challenge in cultivation.) (20+ seeds) E

ERIGERON COMPACTUS Nevada, Eureka Co., W of Eureka. 2050 m. (Some fresh 1990 seed, more or less from the same place as our 10993 - see our main 1989 list for more complete details of this extraordinary, pulvinate species.)

ERICERON aff. LEIOMERUS Nevada, White Pine Co., Snake Range, Mt. Washington. 3320 m. 22.7.90 (In the late 1950's when Dr. Carleton Worth was collecting, forms of this used to make occasional appearances on show-benches in the UK. We have not seen it grown for some time. Typically a species of the high alpine-tundra from E Nevada to the Rockies, a tiny, tidy, tufted plant, usually with bluish to lavender daisies on decumbent stems.)

ERIOGONUM CAESPITOSUM California, Mono Co., White Mts. 2300 m. Open, stony, limestone slopes. 23.6.90 (One of the most desirable of the dwarf Eriogonums. While quite a widespread plant, extending from here on the W rim of the Great Basin N and far to the E, we have never managed a seed-collection ourselves. We have grown it without trouble in the alpine-house in the U.K. however. Compact mats of little, spatulate, white-felted leaves and clustered heads of yellow flowers flush reddish as they age, on 5 cm. stems. Excellent, cleaned seed.)(15+ seeds) D

GENTIANA OREGANA California, Humboldt Co., Onion Mt. 1070 m. Dryish slopes among scrub. 16.9.89 (A dry-growing species from the N Coast Ranges with heads of pale-blue trumpets in late summer. About 20 cm. high.) (30+ seeds) C

LEPIDIUM NANUM Nevada, White Pine Co., W of Little Antelope Summit. 2050 m. Low, limestone ridge-tops. 22.7.90 (The classic Great Basin endemic, which has resolutely refused us a seed-collection both in 1987 and 1989, when we grovelled before it on three occasions. Its aristocratic aura has been nurtured by the writings of Roy David-son and Dwight Ripley. The latter writes of his visit to it in 1944: "...its hummocks look like those of some extra-tight Dionysia, of a peculiarly intense shade of sap green, and when in flower they are almost concealed by the profusion of its small parchment-coloured corollas...this is the Draba to end all Drabas..." It is by no means impossible to grow it in an alpine-house in the UK but to grow it in perfect character eludes us.) (30)

OENOTHERA LAVANDULIFOLIA (Calylophus lavandulifolius) Nevada, White Pine Co., W of Little Antelope Summit.

2050 m. 22.7.90 (A small Nevadan coll. of this exquisite little shrublet - further details in our main list,
under our Utah coll. 11329, which is still available also. A choice and delicate species.)

(15+ seeds) D

OXYTROPIS OREOFHILA var. JUNIFERINA Nevada, Eureka Co., W of Eureka. 1870 m. Eroded banks of calcareous clay. 24.6.90 (The pulvinate forms of this species are among the most desirable of cushion-plants. We could find no seed on this in 1989 and several attempts to collect the allied O. jonesii in S Utah have met with little suuccess - in the latter case largely due to the local rodents which eat out the seed from the inflated green capsules before it is mature. Both these taxa are essentially similar when they form solid, wooly hummocks and both are now placed by Dr. Rupert Barneby as vars of O. oreophila. Barneby's companion, Dwight Ripley, sums up the plant in this habitat as "one of the smallest of its race, densely cespitose and clothed all over in shaggy silver hair, each plant covered with hundreds of violet pea-flowers..." John's coll. is not large but there is rather more seed than we have ever achieved; we hope it may be enough for someone to succeed.)

PHYSARIA CHAMBERSII Nevada, Eureka Co., W of Eureka. 1870 m. 24.6.90 (A very neat, small form with little pearly bubbles after the yellow flowers. Appears to be this but Cruciferae is not revised in IMF yet.)(15+ seeds) C

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PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. - PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. -

B : $2.50 ; £1.50 ; DM4,50 ; FF15. -

C : $3.50 ; £2.00 ; DM6, - ; FF20. -

F : $7.00 ; £4.50 ; DM13, - ; FF45. -
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POLEMONIUM PULCHERRIMUM Nevada, Humboldt Co., Santa Rosa Ra., Granite Mt. 2800 m. 9.9.89 (This is the odd race from the Santa Rosas with the leaflets cut as in P. viscosum. It has been described as P. nevadense. For the dwarf Sierra Nevadan form of this species and other Polemonium spp. see our main 1989 list.) (20+ seeds) C

RANUNCULUS ESCHSCHOLTZII var. OXYNOTUS Nevada, Washoe Co., Rose Knob Ridge SW of Mt. Rose. 3180 m. 10.7.90

(The genus Ranunculus has many members which have adapted to exploiting the seasonal water from melting snow. You will find two Spanish species in Section II; this is the snow-melt buttercup of the high fell-fields of the western N American mountains with little, rounded, lobed leaves and brilliant yellow flowers on stems of about 10 cm. This particular var. from the drier southern ranges is distinguished by its persistent leaf-bases. Summer -dormant but remember it is a high alpine and will not appreciate over-drying or baking!)

(204 seeds) D

SECTION I : SEEDS OF SUMMER - DORMANT SPECIES COLLECTED IN NORTH AMERICA BY JIM & JENNY ARCHIBALD, 1989

The following is an abbreviated abstract of most of the summer-dormant bulbs, corms and tubers included in our 1989 list. As this list is still valid, we include only field data and brief comments here. For more information on the genera and species concerned, please refer to the 1989 list. If you have mislaid this or have not received this, simply ask us for a copy. We have selected the species here as they are likely to be more relevant than the alpine genera for summer or autumn sowing. Most of this group of plants germinated particularly well last season. This seed has been stored under refrigerated, dry conditions and we see no reason why any appreciable deteriorat--ion should have occurred. The only danger with early autumn sowing is that several species, particularly the low altitude Californians, will tend to germinate within a month or so and will definitely need overwintering under glass in colder climates. On the other hand, the longer growing season should result in better quality first-year bulbs. Species from colder areas will be unlikely to germinate before early Spring 1991. A numerical check-list will be sent with seeds for identification of the numbered packets. W.R.: Wayne Roderick; J.A.: John Andrews. ALLIUM ACUMINATUM Idaho, Custer Co., Sawtooth Valley. 1980 m. Stony clay among Artemisia. 6.8.89 (Umbels of bright purple-pink, starry flowers on 15 cm. stems. An excellent and growable little plant.)(15+ seeds) B ALLIUM BISCEPTRUM California, Plumas Co., N of Seneca. 1070 m. Stony clay in clearing in coniferous 11249 forest. 29.6.89 (Not seen in flower here but usually pale to deep rose. About 20 cm.) ALLIUM CAMPANULATUM California, Modoc Co., Warner Mts., E of Davis Creek. 1750 m. Gravelly clay slopes among Artemisia. 20.6.89 (Large heads of pale pink flowers. Similar height and habit to above.)(15+ seeds) 11136 ALLIUM CRATERICOLA California, Napa Co., Palisades SE of Mt. St. Helena. 900 m. Coll. J.A. 26.5.89 (One 11820 flat, falcate leaf and an almost stemless purple flower-head. From stony volcanic & serpentine areas.)(15) ALLIUM DICHLAMYDEUM California, Sonoma Co., Stewarts Point. Coastal rocks. W.R. coll. 18.7.89 (Bright 11766 cerise form of this excellent low-altitude species. Maybe the best larger one. 20-30 cm.) (15+ seeds) 11626 ALLIUM FALCIFOLIUM California, Humboldt Co., SSW of Willow Creek. 1490 m. Serpentine talus. 20.8.89 Heads of red-purple flowers on 6 cm. stems between two, thick, falcate leaves. Choice.) (15+ seeds) ALLIUM CEYERI Colorado, Montrose Co., Uncompangre Plateau, Columbine Pass. 2900 m. Openings in mixed 11393 woodland. 15.7.89 (A fairly dwarf, 20 cm., pale pink form of this widely distributed species.) (15+ seeds) ALLIUM ? HAEMATOCHITON California, Ventura Co., Lockwood Valley. 1370 m. Open gravelly areas among sparse 11204 Artemisia. 26.6.89 (Possibly this rather local, southern sp. with pink to white flowers. 20 cm.) В ALLIUM HOFFMANII California, Trinity Co., Red Lassic, N of Zenia. 1660 m. Serpentine talus. J.A. coll. 11821 15.7.89 (Narrow serpentine endemic. Purple-pink 'tumbleweed' umbel above a single flat leaf.) (15+ seeds) E ALLIUM ? LEMMONII (or ? anceps) California, Modoc Co., Devil's Garden N of Canby. 1500 m. Stony clay 'flats' overlaid with volcanic debris. 20.6.89 (Not seen in flower. White or pink. 15 cm.) (15+ s. 11121 (15+ seeds) ALLIUM PLATYCAULE California, Modoc Co., Warner Mts., E of Davis Creek. 1750 m. Open, gravelly patches.

Then rese heads on short flat stems between two. thick, falcate leaves. 5-10 cm.) (15+ seeds) 11134 BLOOMERIA CROCEA var. AUREA California, San Luis Obispo Co., NE of San Luis Obispo. 150 m. Ledges on 11171 serpentine cliffs. 26.6.89 (Choice Brodiaea relative. Umbels of starry, yellow flowers. 20 cm.)(20+ seeds) CALOCHORTUS ALBUS California, Tuolumne Co., NE of Columbia. 760 m. Scrub-covered slopes. 16.6.89 (Pendant 10997 white flowers on branching, 20-30 cm. stems. One of the easiest to grow in the U.K.) (20+ seeds) CALOCHORTUS ALBUS var. RUBELLUS California, San Luis Obispo Co., W of Templeton. 300 m. Steep, shaded, 11168 stony banks. 25.6.89 (A rich, deep carmine-pink here according to Wayne Roderick.) (20+ seeds) CALOCHORTUS AMABILIS California, Solano Co., NW of Vacaville. 300 m. Openings among scrub. 15.6.89 (Like 10965 the above two in Subsect. Pulchelli and quite easy. Nodding, globular, clear-yellow flowers.) (20+ seeds) CALOCHORTUS BRUNEAUNIS California, Mono Co., Conway Summit. 2230 m. Open 'flats' overlaid with volcanic 11727 debris. 28.8.89 (Cold desert Mariposa. White flowers, green striped outside, blotched purple.) (20+ seeds) CALOCHORTUS CLAVATUS California, San Luis Obispo Co., NE of San Luis Obispo. 150 m. Steep, stony slopes. 26.8.89 (Sumptuous, erect, golden-yellow bowls with brown anthers and internal markings.) (15+ seeds 11681 CALOCHORTUS ? COERULEUS California, Plumas Co., N of Spanish Ranch. 1220 m. Coniferous woods. 30.6.89 11277 (Probably this little 'Cat's Ear' with hairy, white, rose-tinged flowers on 10 cm. stems.) (15+ seeds) CALOCHORTUS COERULEUS var. FIMBRIATUS California, Trinity Co., above Zenia. 1630 m. Coniferous woodland. 11824 J.A. coll. 15.7.89 (Tiny serpentine endemic with furry, white, purple-stained cups.) (15+ seeds) CALOCHORTUS EURYCARPUS Idaho, Custer Co., Sawtooth Valley. 1980 m. Stony blay among Artemisia. 6.8.89 11548 (White or pink bowls, striped green and blotched marcon, on wiry 30-50 cm. stems.) (20+ seeds) C CALOCHORTUS GUNNISONII Wyoming, Converse Co., SW of Glendo. 1980 m. Open grassland. 22.7.89 (White with 11443 intricate purple markings and golden basal hairs. From an extreme climate like the preceding.) (15+ seeds) С CALOCHORTUS HOWELLII Oregon, Josephine Co., SW of O'Brien. 500 m. Open stony slopes. 21.8.89 (Extremely local. White hairy petals with a diffuse smoky-brown stain above the gland and golden hairs.) (10+ seed 11646 (10+ seeds) 11695 CALOCHORTUS INVENUSTUS California, Ventura Co., Mt. Pinos. 2680 m. Granite grit in exposed summit area.

27.8.89 (Erect pale lavender flowers basally stained deep purple on 15 cm stems.) (20+ seed (20+ seeds)

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PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. - PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. -

B : $2.50 ; £1.50 ; DM4,50 ; FF15. - E : $3.50 ; £3.50 ; DM10, - ; FF35. -

C : $3.50 ; £2.00 ; DM6, - ; FF20 F : $7.00 ; £4.50 ; DM13, - ; FF45. -
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; £3.50

F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

; DM10, - ; FF35. -

PRICE CODE A

\$1.50

\$2.50

; £1.50 ; DM4,50 ; FF15. -

\$3.50 ; £2.00 ; DM6, - ; FF20. -

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CALOCHORTUS KENNEDYI California, Ventura Co., Lockwood Valley. 1370 m. Open, clay meadows. 27.7.89 (The
       incomparable western race of this mythical species - solid vermilion-scarlet with black anthers.)
       CALOCHORTUS LEICHTLINII California, Plumas Co., NNW of Quincy. 980 m. Dryish, gravelly slopes among Pinus
11267
        30.6.89 (Montane steppe species with white flowers with dark spots above the glands.)
                                                                                                               (15+ seeds)
       CALOCHORTUS LUTEUS California, Tuolumne Co., near Chinese Camp. 380 m. Open level grassland. 16.6.89 (Sierra Nevadan foothill race of this great golden Mariposa. Can vary from yellow to cream.) (20+ se
10988
                                                                                                              (20+ seeds)
       CALOCHORTUS LUTEUS California, Lake Co., near Clearlake. 420 m. Gritty clay. W.R. coll. 30.6.89 (Coast Range foothill race. Clear yellow, tinged green, with fine, brown, basal markings.) (15+ see
11771
                                                                                                               (15+ seeds)
       CALOCHORTUS MACROCARPUS Idaho, Butte Co., W of Craters of the Moon. 1520 m. Among volcanic debris on E &
11540
       SE facing slopes. 5.8.89 (Most distinct with huge, purple, green-striped flowers. 50 cm.)
                                                                                                              (15+ seeds)
       CALOCHORTUS NUDUS California, Plumas Co., NNW of Quincy. 1000 m. Margins of moist meadow among conifers. 30.6.89 (Dainty, 15 cm. high, moist grower with erect lavender flowers marked purple inside.) (15+ seeds)
11264
       CALOCHORTUS NUTTALLII Utah, Uintah Co., E of Tridell. 1700 m. Gravelly ridges with sparse Juniperus.
10885
       8.6.89 (Almost certainly the local sugar-pink race of this eastern Mariposa.)
                                                                                                               (20+ seeds)
       CALOCHORTUS OBISPOENSIS California, San Luis Obispo Co., NE of San Luis Obispo. 150 m. Serpentine out-
11682
        -crops. 26.8.89 (Only one of Sect. Cyclobothra listed. Bizarre, hairy yellow & purple flowers.)
                                                                                                                     (15+)
       CALOCHORTUS SIMULANS Locality as above. 170 m. Open clay slope among grasses. 26.8.89 (Obscure, lilac-
11683
        -flowered Mariposa. Almost certainly the first time seed has been collected of this.)
                                                                                                               (20+ seeds)
       CALOCHORTUS SPLENDENS California, Ventura Co., Lockwood Valley. 1370 m. Open clay meadows. 27.8.89 (Wide open flowers of soft lavender with long, wispy, white basal hairs and dark anthers.) (20+ seeds
11690
                                                                                                               (20+ seeds)
       CALOCHORTUS SPLENDENS California, Lake Co., Walker Ridge E of Indian Valley. 600 m. Openings in Arcto-
11674
        -staphylos scrub over serpentine. 23.8.89 (Northern form with deep purple basal markings.)
                                                                                                               (15+ seeds)
       CALOCHORTUS SUPERBUS California, Butte Co., Table Mt. N of Oroville. 150 m. W.R. coll. 14.7.89 (Usually
       white (can be cream or pale lavender) with purple basal markings in a yellow zone.)
                                                                                                               (20+ seeds)
       CALOCHORTUS ? TOLMIEI Oregon, Josephine Co., E of Takilma. 850 m. Open, stony slopes among conifers.
11104
        19.6.89 (Possibly this dwarf Pussy Ear with cream flowers tinged rose-purple.)
                                                                                                               (15+ seeds)
       CALOCHORTUS VENUSTUS California, Tuolumne Co., NE of Columbia. 600-740 m. Steep, stony slopes. 16.6.89
10998
        (Most likely to be white here with golden bases and intricate, red-brown basal markings.)
                                                                                                               (20+ seeds)
       CALOCHORPUS VENUSTUS California, Kern Co., above Cuddy Valley. 2120 m. Openings among Pinus. 27.8.89
11703
        (Double-spot form with a pale blood-red thumbprint on each white or lilac-pink petal.)
                                                                                                               (15+ seeds)
       CALOCHORTUS VENUSTUS California, Kern Co., Cuddy Valley. 1840 m. Openings among Pinus. 27.8.89 (Unique
11693
        (as far as we know) colony with flowers in subtle, soft scarlet - pure class!)
                                                                                                               (15+ seeds)
11593
       CALOCHORTUS VESTAE California, Mendocino Co., E of Willits. 1240 m. Open clay slope. 19.8.89 (North Coast
        range relative of C. venustus. Usually white (sometimes pink) exquisitely purple-marked base.) (20+ seeds)
       CAMASSIA ? LEICHTLINII subsp. SUKSDORFII Oregon, Josephine Co., SW of Wonder. 360 m. Streamside. 19.6.89
11108
                                                                                                               (20+ seeds)
        (Moisture-loving and growable outside in wetter climates. 1m. high violet-blue spires.)
       CAMASSIA ? QUAMASH subsp. BREVIFLORA California, Modoc Co., N of Camby. 1500 m. Stony clay 'flats'.
11122
        20.6.89 (Dwarfer at about 50 cm. From a drier habitat though obviously inundated in spring.)
                                                                                                               (20+ seeds)
       CHLOROCALUM ANGUSTIFOLIUM California, Mariposa Co., above Coulterville. 610 m. Open, grassy, clay slope.
10993
        16.6.89 (Wiry 60 cm. stems with many small, white, starry flowers - rather Anthericum-like.)
                                                                                                               (20+ seeds)
       DELPHINIUM NUTTALLIANUM California, Sierra Co., SE of Sierraville. 1870 m. Open area in old river gravel.
10949
        13.6.89 (Dainty, dwarf tuberous-rooted species - here with purple rather than blue flowers.)
                                                                                                               (20+ seeds)
       DICHELOSTEMMA IDA-MAIA California, Humboldt Co., SSW of Willow Creek. 650 m. Steep grassy banks. 20.8.89
11622
        (Umbels of pendant, tubular flowers in glowing red from buds tipped bright green. Up to 1 m.) (20+ seeds)
        DICHELOSTEMMA MULTIFLORUM California, Butte Co., N Fork Feather River. 400 m. Among scrub on steep slope.
11235
        28.6.89 (Rounded umbels of violet flowers on stems of about 50 cm.)
                                                                                                                (20+ seeds)
        DICHELOSTEMMA PULCHELLUM California, Tuolumne Co., W of Chinese Camp. 360 m. Open grassy slopes and
10982
        among scrub. 16.6.89 (Tight umbels of lilac-blue flowers above purplish bracts. About 50 cm.) (20+ seeds)
        DICHELOSTEMMA VOLUBILE California, Solano Co., NW of Vacaville. 300 m. Among scrub on open slope. 15.6.89
10969
        (Climbing tems twine up to 2 m. Compact umbels of rose-pink flowers with white staminodes.)
        DODECATHEON CLEVELANDII California, Santa Clara Co., E of San Jose. 370 m. W.R. coll. 29.5.89 (Magenta
11778
        -pink flowers with yellow noses. This and the following are dry-climate, summer-dormant species.)
                                                                                                                      (30+)
        DODECATHEON CONJUCENS California, Modoc Co., Warner Mts., E of Davis Creek. 1750 m. Gravelly clay slopes.
11133
        20.6.89 (A more northern species from colder, steppe conditions, reliant on snow-melt.)
                                                                                                                (30+ seeds)
        ERYTHRONIUM CALIFORNICUM California, Humboldt Co., SSW of Willow Creek. 1490 m. Loose serpentine talus among conifers. 20.8.89 (Creamy white flowers with white anthers above mottled leaves.) (20+ see
 11624
        ERYTHRONIUM CALIFORNICUM California, Trinity Co., NNE of Weaverville. 960 m. Stony openings in conifers.
 11018
         18.6.89 (Local race with striking purplish anthers not generally known in cultivation.)
                                                                                                                (20+ seeds)
        ERYTHRONIUM CITRINUM California, Del Norte Co., NNE of Gasquet. 400-450 m. Steep slopes among dense scrub
11065
                                                                                                                              D
                                                                                                                (20+ seeds)
        of Rhododendron, etc. 19.6.89 (Creamy white with a greenish base. Mottled leaves.)
        ERYTHRONIUM GRANDIFIORUM Colorado, Montrose Co., Uncompangre Plateau, Columbine Pass. 2900 m. Openings in
 11393
        mixed woodland. 15.7.89 (An outstanding plant with plain green leaves and yellow flowers.)
                                                                                                                (20+ seeds)
        ERYTHRONIUM GRANDIFLORUM Utah, Cache Co., Bear River Mts., above Tony Grove Lake. 2400 m. Open Artemisia
 11525
         'flats'. 2.8.89 (Wasatch populations usually have red-brown anthers rather than the usual yellow.) (20+)
        ERYTHRONIUM HELENAE California, Lake Co., SE of Middletown. 450 m. Stony slope among Arctostaphylos. 23.8.89 (Beautiful, local serpentine endemic. Creamy flowers with yellow anthers.) (20+ se
 11678
                                                                                                                (20+ seeds)
                                                                                                                              D
                                                                  PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. -
                                     ; DM3, - ; FF10. -
                          ; £1.00
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ERYTHRONIUM HENDERSONII Oregon, Jackson Co., N of Medford. 400 m. Openings among scrub. 20.6.89 (Very
11116
        fine, robust species. Mottled leaves and lavender-pink flowers with dark anthers.)
        ERYTHRONIUM HOWELLII Oregon, Josephine Co., E of Takilma. 670 m. Open, stony slopes among conifers.
11099
        19.6.89 (Local plant with white flowers flushing pink with age. Mottled leaves.)
                                                                                                                         (20+ seeds) D
       ERYTHRONIUM MULTISCAPOIDEUM California, Butte Co., near Magalia. 760 m. On serpentine under Cupressus.
11783
        W.R. coll. 27.5.89 (Heavily mottled leaves and white flowers. Stoloniferous corms.)
                                                                                                                         (20+ seeds)
       ERYTHRONIUM MULTISCAPOIDEUM (E. "cliftonii") California, Butte Co., near Pulga. 460 m. Open, S-facing, serpentine slopes. W.R. coll. 27.5.89 (Distinct local race - more or less a giant form.) (15+ seed
                                                                                                                         (15+ seeds)
        ERYTHRONIUM PURPURASCENS California, Nevada Co., Monumental Ridge. 1770-1980 m. J.A. coll. 29.7.89 (Most
11828
        distinct endemic of Sierra Nevadan granites. Plain leaves and white flowers becoming purplish.)(15+ seeds)
        ERYTHRONIUM TUOLUMNENSE California, Tuolumne Co., NE of Columbia. 760 m. Steep scrub-covered slope.
10996
        16.6.89 (Very local but easily grown. Plain, bright green leaves and yellow flowers.)
10500
        FRITILLARIA AGRESTIS California, Alameda Co., E of Livermore. 170 m. Heavy clay in open grassland.
        15.5.89 (Up to 8 greenish cream and purplish brown bells on 50 cm. stems. An adobe-clay plant.)(20+ seeds)
        FRITILLARIA ATROPURPUREA Idaho, Custer Co., N of Sunbeam. 1890 m. Open areas among conifers in granite
11552
        gravel. 6.8.89 (Single-flowered, 20 cm. high form. Usually mottled purple-brown and cream.)
       FRITILIARIA GLAUCA California, Humboldt Co., SSW of Willow Creek. 1490 m. Loose, serpentine talus on N-facing slope. 20.8.89 (Yellow form of this 15 cm. high serpentine endemic. Thick glaucous leaves.) (15+)
11625
       FRITILLARIA LANCEOLATA (F. affinis) California, Solano Co., NW of Vacaville. 300 m. Openings among scrub. 15.6.89 (Wide, nodding bells mottled brown-purple and yellow. Slender 50 cm. stems.) (20+ seeds)
10964
                                                                                                                        (20+ seeds)
        FRITILLARIA LILIACEA California, Marin Co., near Nicasio. 15 m. Low, grassy, coastal hills. W.R. coll.
11786
        26.5.89 (Up to 5 pendant, creamy white bells on 30 cm. stems. Not difficult under glass in U.K.)(20+ seeds)
       FRITILLARIA MICRANTHA California, Mariposa Co., above Coulterville. 610 m. Grassy slopes among Pinus. 16.6.89 (Robust, 50 cm. high plant with up to 10 nodding, purplish bells.) (20+ se
10990
       FRITILLARIA PHAEANTHERA California, Shasta Co., E of Redding. c. 1000 m. Openings in scrub among Pinus.
11147
        20.6.89 (Variable, dubious species derived from recent hybridisation - F. recurva x F. micrantha ?) (20+) D
       FRITILLARIA PLURIFLORA California, Lake Co., E of Indian Valley. 600 m. Open areas in heavy clay. W.R. coll. 19.5.89 (Up to 7 conical bells in rich, unmarked pink. An exquisite but difficult plant.)(20+ seeds)
11787
       FRITILLARIA PUDICA Idaho, Butte Co., NE of Carey. 1520 m. Stony E & SE-facing slopes. 5.8.89 (Nodding, clear yellow bells. Two other colls. available - see main 1989 list.) (20+ see
11542
                                                                                                                         (20+ seeds)
11029
        FRITILLARIA RECURVA California, Trinity Co., N of Junction City. 500 m. Among scrub on steep, stony slope
        18.6.89 (Narrow, modding, luminous scarlet bells on elegant 50 cm. stems. By no means impossible.) (20+)
       FRITILLARIA RECURVA X F. LANCEOLATA California, Colusa Co., W of Lodoga. 410 m. J.A. coll. 24.6.89 (Fully variable between the parents in form, height and colour - red to brown.) (15+
11830
        FRITILLARIA SP. California, Plumas Co., N of Seneca. 1070 m. Stony clay in clearing in coniferous woods.
11250
        29.6.89 (This and the next are something of a mystery - most probably F. atropurpurea.)
                                                                                                                         (20+ seeds)
11266
       FRITILLARIA SP. California, Plumas Co., NNW of Quincy. 980 m. Gravelly openings among Pinus.
        HESPEROCHIRON CALIFORNICUS California, Sierra Co., N of Sattley. 1520 m. Sandy clay on Artemisia 'flats'
        13.5.89 (Little summer-dormant member of the Hydrophyllaceae. White cups on 2-5 cm. stems.)
        HESPEROCHIRON PUMILUS California, Modoc Co., N of Canby. 1500 m. Stony clay 'flats'. J.A. coll. (Very
11832
        near the above with flatter flowers with long hairs inside. See Bull.Alp.Gard.Soc. No.239 (March, 1990))
        LEWISIA NEVADENSIS California, Sierra Co., S of Sierraville. 1870 m. Open, gravelly areas. 13.6.89 (Shiny
10948
        green rosettes with a succession of white flowers in the centres. Quite easy to grow.)
        LEWISIA REDIVIVA Wyoming, Fremont Co., Wind River Mts. above Fiddlers Lake. 3000 m. Granite grit. 29.7.89 (Huge, diaphanous, glowing-pink water-lily flowers. One of the loveliest Americans.) (20
11505
        LILIUM Almost all colls. in our 1989 list still available from refrigerated seed which should still give
         reasonable germination this season. Lily seed stores less well than some so take the chance for autumn.
        LITHOPHRACMA BULBIFERA California, Sierra Co., N of Sattley. 1520 m. Sandy clay among Artemisia.
10514
         13.5.89 (About 20 cm. high with many pale-pink fringed flowers. Summer-dormant Saxifragaceae.) (50+ seeds)
        PARONIA CALIFORNICA California, San Luis Obispo Co., NE of San Luis Obispo. 150 m. Among scrub on steep
11175
         slopes. 26.6.89 (Local, little-known species for bulb-frame treatment. Black-red flowers.)
                                                                                                                           (10 seeds)
        RANUNCULUS HYSTRICULUS California, Butte Co., NE of Pulga. 600 m. N-facing granite slopes. W.R. coll.
11800
                                                                                                                          (20+ seeds)
         27.5.89 (Excellent little Sierra Nevadan endemic. White flowers on 20 cm. stems.)
         SISYRINCHIUM DOUGLASII California, Modoc Co., Warner Mts., E of Davis Creek. 1750 m. Gravelly clay among
11132
         Artemisia. 20.6.89 (Exquisite, satin-violet bells in early spring. An unrivalled species.)
                                                                                                                         (30+ seeds)
         TRILLIUM RIVALE California, Del Norte Co., above Gasquet. 390 m. Steep, wooded slopes. 19.6.89 (Dwarf species - illustrated in Bull.Alp.Gard. Soc. Vol. 57, p.73 (March, 1989) - one of the loveliest.)
11055
         TRITELEIA ELEGANS California, Shasta Co., S of Shingletown. 1070 m. W.R. coll. 14.7.89 (Handsome, blue-purple to violet flowers on 30 cm. stems. From heavy soils in and around the Central Valley.) (20+ seeds)
         TRITELEIA HYACINTHINA California, Tuolumne Co., W of Chinese Camp. 360 m. Open grassy slopes. 16.6.89
 10981
         (Striking umbels of white flowers on 50 cm. stems. An easy grower in cultivation.)
                                                                                                                          (20+ seeds)
         VIOLA BECKWITHII California, Sierra Co., N of Sattley. 1520 m. Sandy soil among Artemisia. 13.5.89 (Two-
 10515
         -toned red-purple and pale-lilac flowers. More comments on these in our main 1989 list.)
         VIOLA CUNEATA Oregon, Josephine Co., E of Takilma. 850 m. Turfy, stony slopes. 19.6.89 (10 cm., branching stems with rounded, white-faced, purple-eyed violets, violet on the reverse of the petals.) (10 seeds)
 11100
         VIOLA HALLII California, Humboldt Co., SSW of Willow Creek. 1420 m. Stony turf in opening in coniferous forest. 18.6.89 (Close to V. beckwithii but quite disjunct from it in the Coast Ranges on the California
 11046
         Oregon border. Dark purple upper petals and cream lower ones on a more rounded flower.)
                                                                                                                           (10 seeds) E
                                                                        PRICE CODE D : $4.00 ; €2.50 ; DM 7,50 ; FF25. -
 PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. -
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B: \$2.50; £1.50; DM4,50; FF15. - C: \$3.50; £2.00; DM6, -; FF20. -

E: \$5.50; £3.50; DM10, -; FF35. -

F: \$7.00; £4.50; DM13, -; FF45. -

AUGUST, 1990 SEED-COLLECTIONS FROM THE INTERMOUNTAIN AREA BY JOHN ANDREWS

John is not a man to be deflected from his intentions by the unpredictable climate and plant behaviour in the Great Basin. After his second visit to W Utah this year - making what must have been a round trip of about 2500 km. and climbing two mountains during the weekend Friday night to Sunday night - we can list his seed of two out of the three known Great Basin Primulas. Think of the effort put into making these collections when you sow the seed and - we hope - nurture the seedlings! They may be a challenge to grow but remember they are a challenge to collect.

PENSTEMON PALMERI Nevada, White Pine Co., Snake Range, Pole Canyon. 2300 m. Open spots on sagebrush slopes & W-facing, rocky, limestone areas. 18.8.90 (A fresh coll. of this stunning member of Sect. Spectabiles - with no rivals among the larger species for the size and impact of its huge, pink flowers marked internally with wine-red (see main list). These were dwarfer than usual here, about 60 cm., but it may just be habitat.)(30+ seeds) B

PENSTEMON SCAPOIDES

-facing. 11.8.90

-facing.

PRIMULA DOMENSIS Utah, Millard Co., House Range, Notch Peak above Sawtooth Canyon. 2450 m. Ledges on & at base of vertical limestone cliffs in part-shade. 18.8.90 (Don't run to your reference books, it is not in them. Very recently discovered and described, it made it for inclusion in the 1987 'Utah Flora'. It is obviously not mentioned in European gardening literature and this is surely the first seed collection. As might be anticipat -ed this is a member of the group of relic Primulas around P. cusickiana, separated morphologically on rather fine characteristics but very widely separated geographically. Although P. nevadensis, which follows, is the closest neighbour of P. domensis, its affinities are more with P. maguirei, from which it differs in its larger calyces, shorter corolla tubes and more consistently toothed foliage. The flowers, described as rose to lavender, can also be twice as much across as in P. maguirei, making it a very striking species, about 7 to 15 cm. high. As far as cultivation is concerned, John affirms that this shows a tendency to dormancy in late summer and he points out that, although the cliffs are N-facing, the plants are in some sun in summer - none was in constant, dense shade. Obviously a plant for alpine-house conditions in most areas. To be tried in similar conditions to its allies P. ellisiae and P. rusbyi. Early reports on the progress of P. maguirei show the main problem is keeping the seedlings growing long enough before they go dormant - "mainly a disappearing plant" writes one Scandinavian grower - but it is impossible to predict on the reaction of these isolated mesophytic species. This could prove as difficult as P. maguirei or as easy as P. ellisiae.) (12+ seeds)

PRIMULA NEVADENSIS Nevada, White Pine Co., Snake Range, Mt. Washington. 3125 m. N-facing, vertical limestone cliffs & also under Pinus longaeva (the intermountain bristlecone pine) in limestone scree. 19.8.90 (If you travel W from the House Range, past the Confusion Range, the first great line of mountains which confronts you across the Nevada border is the Snake Range, rising to almost 4000 m. in Wheeler Peak. Here on a few high limestone areas grows P. nevadensis, which also recurs on the Grant Range, about 100 miles SW. This is essentially an alpine plant, though a little more robust than the thready P. capillaris of the Ruby Mts. and tiny P. angustifolia of the Rockies. Up to 9 cm. tall with an umbel of 2 or 3 large, violet-purple, yellow-eyed flowers. Almost as obscure in cultivation as the preceding, this is likely to benefit from cool summer conditions - probably better plunged outside in summer in the U.K. than in an alpine-house, or even tried in limestone-scree conditions in a trough which can be kept dry in winter. Do not imagine conditions here are hot and dry all summer - hail storms of incredible violence can occur with some frequency. John has been able to collect this in slightly greater quantity than the preceding so we can send more to play with.) (20+ seeds) F

1990 CULTIVATED SEED FROM NORTH AMERICAN SPECIES

The longer a species can be maintained and propagated, particularly from seed, under cultivation, the easier it is to grow - and the less relevant field data about its origins becomes. While selection starts as soon as your wild collected seed starts to germinate, we feel it is justifiable to retain numbers and data on the first generation of seed from parents of known wild origin. Beyond that it becomes pointless. The following is seed from good, professional British growers interested in developing bulbs suited to cultivation in European gardens. While this seed is of less importance to those who require full field-data for scientific purposes, it is to be recommended to anyone who simply wants 'growable' material. Results from these will be likely to be more vigorous than from wild collected material of the same species. This is all not to say that things have gone as far as in garden-stocks of species like Crocus chrysanthus or C. sieberi, which bear scant resemblance to the wild species!

ALLIUM PENINSULARE A good, deep rose-purple species, flowering in early summer at about 30 cm. Though one of the lower altitude Californians, this does well outside in N Wales with Dr. Paul Christian. (15+ seeds)

CALOCHORTUS AMABILIS A very vigorous strain of this bright-yellow species, developed by Paul Christian by allow -ing material from Sonoma, Colusa, Solano, Napa & Lake Counties to cross! Even sows itself with him(20+ seeds)

ERYTHRONIUM MULTISCAPOIDEUM (E. "cliftonii") Although still rare in British gardens, Paul finds this 'giant form' of E. multiscapoideum hardy and vigorous in N Wales. Large white, yellow-centred flowers. The original stock will have come from the same locality as our 11784; this is from open-pollinated garden-stock. (15+ seeds) E

ERYTHRONIUM REVOLUTUM From Peter Chappell's Hampshire garden - possibly the best of the N Americans for U.K. gardens so far. Beautifully mottled leaves and pale to deep rose-pink flowers. Sows itself. (20+ seeds) C

TRITELEIA BRIDGESII From stock established by Norman Stevens - a desirable species which we have admired in N California but which we have not collected. Deep purple-blue with blue anthers. About 30 cm. high. (15+ seeds) D

TRITELEIA IXIOIDES Golden yellow flowers with dark midveins on the segments. From stock grown under glass by
Paul Christian, originally from a Wayne Roderick coll. "good form with large flowers" - about 30 cm. (20+) B

TRITELEIA PEDUNCULARIS Again grown by Paul from Wayne's seed. A handsome plant of the Coast Ranges with wide umbels of white flowers on stems of about 50 cm. Not common in the wild but good in the garden. (15+ seeds) B

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B : \$2.50 ; £1.50 ; DM4,50 ; FF15.
C : \$3.50 ; £2.00 ; DM6, - ; FF20.
F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

Since we compiled the 1989-90 list of North American material in December, 1989, another volume of the 'Intermountain Flora' has appeared. This is entirely Dr. Rupert Barneby's contribution on the Fabales - mainly Fabaceae (Leguminosae) - and, of course, includes Astragalus. As Dr. Barneby had been kind enough to come up with rapid determinations on our herbarium material of these, all our intermountain collections of this genus are named in accordance with this new work. There are two alterations to naming, however, which we should have adopted had we known of them. Cercis occidentalis (11609 & 11670) is placed at varietal level under C. canadensis, as C.c. var. orbiculata; this seems good sense. In the genus Lupinus, Barneby distinguishes two taxa from the L. breweri of Californian botanists:

L. tegeticulus (essentially acaulescent with a densely packed caudex above ground) and L. breweri (with a loosely branched subterranean caudex and short, prostrate, developed stems). This is obviously quite a basic distinction from a horticultural viewpoint as well. Our Mt. Pinos collection (11696) should be placed under L. tegeticulus and we think (unfortunately herbarium material was not pressed of these) the other two can remain as L. breweri. We still have a few seeds left of 11729 (L. breweri) and 11696 (L. tegeticulus). We have not had time to work out where 11733, listed as L. lyallii, might fit into Barneby's concepts of the L. lepidus group (the collection was made from just outside his area) but the Utah collection, 11350, remains L. lepidus var. utahensis, distinct in being stemless and the tiniest member of this terrifyingly complex group.

Apart from our collection 9019, listed as Eriogonum? soredium, definitely not being this species (it is a form of the variable & widespread E. shockleyi - it was all wishful thinking), nothing particularly drastic comes to mind at present regarding misidentification of material listed from our 1987 and 1989 North American collections. This certainly does not mean to say that some terrible errors might not come to light; we are far from being infallible. We do, however, in the short time available for such activities, try to provide the most acceptable name according to current thinking for our collections. This always makes it wearisome when people, who have obviously done less homework than we have, fiddle about with names. The question of the use of the name Phlox muscoides is raised in the March 1990 Alpine Garden Society Bulletin: in our use of this name we follow Dorn's 'Vascular Plants Wyoming' (1988), Welsh 'A Utah Flora' (1987) and Cronquist, Holmgren et al. 'Intermountain Flora' (1984). These are modern, easily accessible works and, if anyone is still not satisfied, the holotype specimens of P. muscoides and the synonymous P. bryoides are held in the British Museum. It is even worse when anonymous wiseguys erase the name you have put on a collection. In our 1987 list, we quite clearly identified our collection 9310 as Polemonium viscosum. We are thrilled to see a well-grown plant of it beautifully illustrated (p.49 of the same AGS Bulletin) but why the caption "Polemonium sp."? On p. 44 we learn that the seed had produced "a plant which corresponded neither with P. eximium nor P. viscosum." Obviously the crypto-taxonomists, about which we wrote some years ago, have emerged again. We are gratified that the (faceless) world authority on the genus Polemonium was present to condescend to examine material from one of our unworthy collections. It is a little sad to think that Robert Dorn, who has spent over 20 years living and working in Wyoming, and Earl Jensen, who actually lives within a few miles of this

FOR THE COMPLETE RANGE OF NORTH AMERICAN COLLECTIONS PLEASE REFER TO OUR 1989-90 LIST WHICH REMAINS VALID UNTIL 1991

SECTION I : 1989-90 LIST OF NORTH AMERICAN SEEDS : DELETIONS

While our 1989-90 list of North American collections remains valid, seed is now finished from a small number of species (though in a few cases there are other colls. of the same species available). Deleted items are as follows:

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AQUILEGIA SCOPULORUM
                                                               11705
                                                                     FREMONTODENDRON CALIFORNICUM **
11770 BRODIAEA PURDYI
                                                               11370
                                                                      GILIA STENOTHYRSA
11844
      CAMPANULA SHETLERI
                                                               11655
                                                                     LEWISIA LEEANA
10579
      CRYPTANTHA HUMILIS
                                                               11579
                                                                      LUPINUS BREWERI **
11337
      CRYPTANTHA OCHROLEUCA
                                                               11520
                                                                     MERTENSIA ARIZONICA
10827
      CRYPTANTHA PARADOXA
                                                               11459
                                                                      MERTENSIA ? HUMILIS
      EPILOBIUM OBCORDATUM subsp. SISKIYOUENSE
11649
                                                                9611
                                                                     OXYTROPIS PODOCARPA
      EPILOBIUM RIGIDUM
                                                               11575 PAEONIA BROWNII
                                                                     PENSTEMON THOMPSONIAE var. DESPERATUS
      ERIGERON COMPACTUS var. CONSIMILIS
                                                               11297
11538
      FRITILLARIA ATROPURPUREA **
                                                               11840
                                                                      POLEMONIUM CHARTACEUM
10504 FRITILLARIA FALCATA
                                                               11758
                                                                      ROSA ? WOODSII
11075
                                                                      SCUTELLARIA NANA var. SAPPHIRINA
      FRITILLARIA LANCEOLATA **
                                                               11296
      FRITILLARIA BIFLORA
                                                                      SILENE HOOKERI var. BOLANDERI
11679
                                                               11105
                                                                      TRIFOLIUM NANUM
11829
      FRITILLARIA PURDYI
                                                                9600
11831 FRITILLARIA STRIATA
                                                                      Other coll. of this species available
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SECTION II: 1990-91 SEED-BANK SUPPLEMENT: DELETIONS

Enclosed with this list you will find a supplementary list of material collected in Europe & Turkey prior to 1989. The purpose of this list is to make such seed available to anyone who missed the opportunity to acquire it at its first listing. We tried only to include items for which we were reasonably sure we could meet the demand or, if cultivated, from which we could expect fresh 1990 seed. The latter was not the case with the following:

368.005 CYCLAMEN REPANDUM subsp. PELOPONNESIACUM f. VIVIDUM and 705.701 NARCISSUS RUPICOLA subsp. WATIERI

While our main aim is to offer you seed collected by ourselves, our lists would be much the poorer were it not for some additional material contributed by some friends in Britain and abroad. How else could we hope to bring you seed collected in Utah and Peru, Ruwenzori and the Chatham Islands, all in the same list? You will find some seed from the following in Sections I & II and, of course, primarily in Section III. Our sincere thanks to them all:

John Andrews (California, USA), Helen Barton (Devon, UK), Dinah Batterham (Dorset, UK), John Blanchard (Dorset, UK),
Peter Chappell (Hampshire, UK), Paul Christian (Clwyd, UK), Don Elick (Japan), Terry Hatch (Pukekohe, NZ), Mother Hilary & Sister Mary (Devon, UK), Bert Hopwood (Devon, UK), Henrik Zetterlund (Sweden)Dave Hoskins (Hampshire, UK),
Hans-Erik Jensen (Denmark), Melvyn Jope (Surrey, UK), Will McLewin (Cheshire, UK), Helen Beaufort-Murphy (Peru),
Karin & Jimmy Persson (Sweden), Norman Stevens (Cambridge, UK), Wayne Roderick (California, USA), Mike Tucker (Somerset, UK), Peter & Penny Watt (Hampshire, UK), Michael Wickenden (Kircudbrightshire, UK).

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B : $2.50 ; £1.50 ; DM4,50 ; FF15. -

C : $3.50 ; £2.00 ; DM6, - ; FF20. -

F : $7.00 ; £4.50 ; DM13, - ; FF45. -
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FROM: JIM & JENNY ARCHIBALD, 'BRYN COLLEN', FFOSTRASOL, LLANDYSUL, DYFED, SA44 5SB, WALES, U.K.

Almost all seed listed here has been collected before August, 1990. A supplementary list is available for seed-bank material collected prior to 1990. If a copy of this is not enclosed with this list, please ask for it should you require it. There is a small degree of overlap between these two lists : we have repeated a few important 1989 coll--ections; there are some fresh collections both from the wild and from cultivated material to replace seed-bank material. The emphasis in this list is on species which will give more reliable germination if sown before November, 1990, by northern hemisphere growers: mainly Helleborus and other Ranunculaceae, as well as the summer-dormant Liliaceae, Iridaceae & Amaryllidaceae. Such species should be sown as soon as possible after receipt. There is much less urgency for sowing most of the alpine or larger herbaceous species and no urgency for southern hemisphere growers. With these considerations in mind we shall maintain the validity of this list until our next list is issued during the first half of 1991 but northern hemisphere growers should bear in mind that sowing the groups of plants just mentioned during or after winter, 1990 - 91 will mean no germination will occur until spring, 1992, and that it will be much less reliable and more irregular. We shall do our best to maintain viability by storage under appropriate conditions but obviously ordering promptly and sowing seed as soon as possible are in your interest. COLLECTED MATERIAL is mainly from our own collections made in S Europe during May to July. We are most grateful to Professor P. and Dr.P. Watt for some higher altitude collections made later in July in N Italy and SE France. CULTIVATED MATERIAL is only listed in this section where it has been derived from plants of known wild origin, accompanied by a reasonable amount of field data. Even with first generation seed from cultivated wild material, a certain amount of selection has occurred (i.e. the ability to grow and set seed under garden conditions) and there is the possibility of hybridization. With successive generations raised from seed in cultivation, field data and the original collection numbers become increasingly irrelevant. Such cultivated seed, as well as wild seed from outside the area concerned here or wild seed with little field data, is listed separately. Apart from cultivated seed derived from our own collections, we include some material from other collectors. In all cases, the collector is specified, as is the cultivator (ex. hort. : from the garden of ...). Unless otherwise mentioned, seed is collected by ourselves. REFERENCE NUMBERS in this list are our permanent references for particular populations within the area of Europe, SW Asia and N Africa. If we - or anyone else - recollect a species from a particular locality, it is listed under the same reference number as previous collections. Seed packets carry only this reference number but as these six digit numbers run in both alphabetical and numerical order here, identification from this list is a simple matter. The five digit field numbers used in Section I apply only to that particular collection made on a particular date. NOMENCLATURE in general follows 'Flora Europaea' and 'Flora of Turkey' with a degree of editing. ABBREVIATIONS used to compress more details into the available space are as follows: : indicates seed from cultivated plants of known wild origin. Field data applies to the original collection. Da. : Dag/Daglari, Turkish for mountain/mountains. Coll. : collected/collected by/collection

FOR SEED COLLECTED PRIOR TO THE PRESENT YEAR AND STORED IN SILICA GEL AT c. COC, SEE OUR SEPARATE LIST

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110.031 ACHILLEA ACERATIFOLIA Jugoslavia, Makedonija, Galicica Planina, 1700 m. Exposed, gravelly patches on
            Timestone. 12.6.90 (One of the loveliest of rock-garden 'daisies'. This form is quite distinct from those we have seen in cultivation and in Greece with its white-felted leaves lacking the toothed margin.
            A profusion of distinctive white 'daisies' on 10 cm. stems. Highly recommended.)
                                                                                                                         (100+ seeds) B
* 161.901 ANEMONE PAVONINA var. OCELLATA Greece, Lesvos. Ex hort. Helen Barton from material coll. I. & H. Barton (Its bright scarlet, white-centred flowers are one of the most memorable spectacles of springtime in
             Greece. Although always a low-altitude plant, this stock has grown for many years on a sunny, stony bank
                                                                                                                          (20+ seeds) B
             in Devon. U.K. Our last coll. of wild seed in 1985 germinated profusely and grew on well.)
  170.001 APHYLLANTHES MONSPELIENSIS Spain, Jaen, Sierra de Cazorla, E of Puerto de las Palomas. 850 m. Open,
             moist slope. 23.6.90 (This extraordinary, fibrous-rooted member of the Liliaceae, widespread, though
             local, throughout SW Europe, has denied us a seed-collection until now. A monotypic genus unlike any-
             -thing else, it forms clumps of dark-green, leafless stems, about 30 cm. high, with a succession of
             clear-blue flowers, about 2 cm. across, at their tips. In full flower, from afar, it can look like a clump of blue flax (we have seen the two growing together in Andalucia). Out of flower, it looks like
             a tussock of Juneus and in this exceptional habitat it grows mixed with rushes so that we did not know
             we were walking on tufts of Aphyllanthes until the last of the blue flowers caught our eye. Normally a
             plant of hot, dry slopes, it is not especially difficult to grow in a similar site in cultivation - or
             in the bulb-frame - but it strongly resents disturbance and is very seldom available.)
  170.002 APHYLLANTHES MONSPELIENSIS Spain, Huesca, Rio Gallego valley W of Anzanigo. 600 m. Steep limestone
             slope. 28.6.90 (From a much more typical habitat in the southern foothills of the Pyrenees.) (15+ seeds)
             ARUM ALPINUM Greece, Evia, Oros Dirfis. 1200 m. N & W facing limestone slopes. Ex hort. M. Tucker.
* 194.751
              (1990 seed from a coll. we made in 1984. The little Arum of the higher Greek mountains.)
                                                                                                                              (8 seeds)
             ARUM DIOSCORIDIS var. LUSCHANII Turkey, Hatay, S of Antakya. Coll. & ex hort. N. Stevens (This is
* 195.301
             probably quite distinct from the wild coll. we listed some years ago under this name. This is from the
             mountains right down near the Syrian border and has rather short, dark spathes.)
                                                                                                                              (8 seeds) C
             ARUM DIOSCORIDIS var. SPECTABILE Turkey, Antalya, S of Akseki. 800 m. Humus filled limestone pockets. (1990 hand-pollinated seed from M. Tucker - further comments on this in our 'seed-bank supplement'. This
 * 195.352
              taxon is now being placed by Peter Boyce under A. dioscoridis var. dioscoridis. Superlative!)
                                                                                                                             (8 seeds) D
             ARUM NICRUM Jugoslavia, Bosna i Hercegovina, above Dubrovnik to Trebinje. 500 m. Holes & crevices on
 * 196.500
             limestone. Ex hort. M. Tucker - original material coll. B. Mathew. (A fine, hardy species with marcon-
black spathes. We revisited this locality in 1990 but there was no trace of seed this year.) (8 seeds) C
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B : $2.50 ; £1.50 ; DM4,50 ; FF15. - E : $5.50 ; £3.50 ; DM10, - ; FF35. -

C : $3.50 ; £2.00 ; DM6, - ; FF20. - F : $7.00 ; £4.50 ; DM13, - ; FF45. -
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240.000 BRIMEURA AMETHYSTINA france, Hautes-Pyrenees, Vallee d'Ossoue. 1500 m. S & W facing slopes in stony clay over limestone. 30.6.90 (A delightful little bulb, essentially endemic to the Pyrenees but with
             one distant station in W Jugoslavia. Rather like a miniature, 15 cm. high, bright sky-blue bluebell and
              an excellent, growable garden plant, though surprisingly seldom seen in cultivation.)
             CALLIANTHEMUM KERNERIANUM Italy, Trentino-Alto Adige, Monte Baldo E of Lago di Garda. 2000 m. Exposed, stony areas on limestone summit ridge. Coll. P. & P. Watt. (An extremely local and very beautiful member of this small genus of the Ranunculaceae. Like many of this family it drops its seed while it is still
             green and this should be sown promptly before winter. Anemone-like, white, pink-flushed flowers on tufts of fermy, blue-green leaves. A challenge to grow well but it can be done with patience - see the note in Bull.Alp.Gard.Soc. Vol.54, p.344 (Dec. 1986) when it received an A.M. A rare opportunity!) (10 seeds)
  254.900
             CAMPANULA FORMANEKIANA Greece, Imathia, Oros Vermio below Seli. 1300 m. W-facing limestone cliffs.
              6.6.90 (Possibly the most exquisite of the Greek monocarpic species, limited to the limestones along the
             Greek/Jugoslavian border. All still in flower here were the lovely ice-blue form rather than the white,
             well-known in gardens. An easy alpine-house plant. A few early seeds available.)
                                                                                                                                  (20+ seeds) B
             CAMPANULA HAWKINSIANA Greece, Ioanina, N of Konitsa. 700 m. Loose serpentine detritus on steep slopes. 11.6.90 (A somewhat larger more robust form than our 1985 coll. and from about 1000 m. lower altitude.
  256,002
             The same intense violet flowers. Seed-bank seed of the earlier coll. was still germinating well in 1989
             and is still available. There is a fine photograph of a plant raised from this seed in Bull.Alp.Gard.
             Soc. Vol.56, p.78 (March, 1988) - a white-c ntred one; many are electric-blue at the bases.)(50+ seeds) D
             CAMPANULA PORTENSCHLAGIANA Jugoslavia, Hrvatska, above Mala Duba SE of Makarska. 50 m. W-facing lime-
  260,800
              -stone cliff. 1.6.90 (An excellent, well-known garden plant covering itself with violet bells but a very
             local thing in the wild - this is probably the first coll. of wild seed for decades!)
                                                                                                                                 (30+ seeds) B
             COLCHICUM AUTUMNALE The meadow saffron is a comparatively variable plant throughout its wide range -
             all forms usually prove excellent growable garden-plants with their lilac-pink flowers with yellow
             anthers appearing before the leaves in autumn
  311.402 COLCHICUM AUTUMNALE Jugoslavia, Slovenija, N of Postojna. 600 m. Openings in deciduous woodland on lime
              -stone hills. 28.5.90 (An exceptionally robust form with very large leaves and seed-capsules) (20+ seeds) B
  311.403 COLCHICUM AUTUMNALE Jugoslavia, Hrvatska, Velebit Planina, above Karlobag. 500 m. Among limestone boul-
             -ders on steep, scrub-covered slopes. 30.5.90 (Intermediate between the other two in habit.)(15+ seeds)
             COLCHICUM AUTUMNALE Greece, Drama, Falakro summit ridge. 2000 m. Moist, grassy meadow. 9.6.90 (A small
  311.404
             form from the SE extremity of its distribution - there are fascinating relic colonies of plants such as
             this and Dryas octopetala on Falakro. Small, narrow leaves here.)
             COLCHICUM BIVONAE Although centred on the Balkans and W Turkey, this is even more variable than the preceding with such names as C. sibthorpii, C. bowlesianum and C. visianii applicable to taxa which are
             aggregated under this name. The large flowers appearing in the autumn always have a distinct goblet-
             shape and are strongly chequered, though the ground-colour can vary from pink to rose-purple. In general it proves a good garden-plant in the U.K. with tidy, upright leaves of dark green appearing in spring.
  311.702
             COLCHICUM BIVONAE Greece, Pieria, Oros Olimbos above Vrondou. c. 1000 m. 1989 seed coll. P. & P. Watt.
             (The Olympus race which can be segregated as C. bowlesianum. Usually reliable and hardy.) (15+ seeds) C
             COLCHICUM BIVONAE Greece, Kavala, Pangeo above Eleftheroupoli. 1000 m. Opening in deciduous woodland.
  311.703
             7.6.90 (A fine, rosy chequered flower which grows well with us here in Wales.)
* 311.704 COLCHICUM BIVONAE Greece, Thesprotia, between Gliki & Souli. c. 1000 m. Coll. & ex. hort. D. Hoskins.
             COLCHICUM DOERFLERI Jugoslavia, Makedonija, Galicica Planina above Trpjeca. 1600 m. Open stony, lime-
  314.000
             -stone slopes. 5.6.90 (A lovely, dwarf, spring-flowering plant merged by some authors with C. hungar-icum. Horticulturally quite distinct and in the wild a plant of the higher mountains and colder inland areas. Here its lilac-pink flowers appear along the edge of the melting snow-patches.) (15+ seeds
             COLCHICUM HUNGARICUM Jugoslavia, Hrvatska, Velebit Planina, Mali Halan S side. 800 m. Exposed, gravelly
             areas on limestone. 30.5.90 (An attractive, little plant with several flowers appearing between the two
             or three narrow, downy leaves in very early spring. Not seen in flower here but most of the Jugoslavian
             coast range forms are white with purple-black anthers. For the alpine-house or bulb-frame.) (15+ seeds) D
            COLCHICUM MONTANUM (Merendera montana, M. pyrenaica) Spain, Granada, Sierra Nevada below Penones de San Francisco. 2300 m. Depression on NW facing slope in turf. 25.6.90 (Another first-class dwarf species but
  315.901
             autumn-flowering. Clusters of bright rose-pink flowers, usually with white centres, appear before the
             3-4 narrow linear leaves. A delight in the bulb-frame and usually happy in the open garden.) (20+ seeds) B
            COLCHICUM MONTANUM Spain, Avila, Sierra de Gredos, SW of Hoyos del Espino. 1700 m. Open, dryish slopes and stony areas. 27.6.90 (The species is very much a plant of mountain meadows.) (20+ seed.
  315.902
                                                                                                                                 (20+ seeds) B
             CROCUS ABANTENSIS Turkey, Bolu, above Abant Golu. 1100 m. Slopes above lake in scree. Seed from Horton
÷ 339,600
             & Stevens 2538 ex hort. N. Stevens. (Described in 1975 and only known from the type locality, this is
             very like C. biflorus pulchricolor in flower and colour - a beautiful rich lilac-blue - but utterly
             different in its seeds and tunics. The two need similar treatment in cultivation.)
            CROCUS ASUMANIAE Turkey, Antalya, N of Akseki. 1200 m. Limestone slopes with Quercus scrub & sparse Pinus. Seed from Horton & Stevens 2243 ex hort. N. Stevens. (This autumn-flowering species, described
4 340.351
             in 1979, is proving a very satisfactory grower in a bulb-frame in the U.K. Nearest to the Greek
             C. cartwrightianus, it has very pale lilac or white flowers with striking scarlet styles.)
                                                                                                                                (15+ seeds) D
             CROCUS BIFLORUS subsp. FULCHRICOLOR See Section III for cultivated stock of this excellent species.
            CROCUS CANCELLATUS subsp. MAZZIARICUS Greece, Samos, Mt. Profitas Ilias. 950 m. Open areas in maquis on
 342.006
            S facing mica-schist slopes. Coll. D. & P. Hoskins 14.5.90 (Autumn-flowering plant, usually with lilac flowers with yellow anthers from an unusual locality. Best grown in a bulb-frame in the U.K.)(15+ seeds) D
            CROCUS CHRYSANTHUS Jugoslavia, Makedonija, Galicica Planina. 1600 m. Open, stony slopes on limestone. 12.6.90 (While the garden forms and hybrids of this are well-known, the true wild species has become
 343.202
             rare in cultivation. A delightful little plant with golden, scented flowers in early spring.)(15+ seeds) C
            CROCUS CVIJICII Greece, Imathia, Oros Vermio near Seli. 1500 m. N & W facing slopes in turf. 6.6.90
             (Almost certainly the first wild seed-collection of this exquisite and extremely local high altitude
             species. Scented flowers from chrome-yellow to orange-yellow in spring. Do not over dry!)
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PRICE CODE D : \$4.00 ; £2.50 ; DM 7,50 ; FF25. -

E: \$5.50; £3.50; DM10, -; FF35. -

F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

PRICE CODE A : \$1.50 ; £1.00 ; DM3, - ; FF10. -

B : \$2.50 ; £1.50 ; DM4,50 ; FF15. -

C : \$3.50 ; £2.00 ; DM6, - ; FF20. -

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* 345.200 CROCUS GOULIMYI Greece, Messinia, SSE of Agios Nikonas. 300 m. Humus-filled crevices among stones. Seed
              from our 1985 coll. ex hort. M. Tucker (Superb, long-tubed, lilac-blue goblets in autumn. A very local species in nature but very easy to grow in cultivation in the U.K. - bulb-frame or dry, sunny site)(15+) B
             CROCUS LAEVIGATUS Greece, Evia, above Nea Artaki. 300 m. Under Pinus & in openings among Cistus. Coll. & ex hort. D. & P. Hoskins. (A delightful, little species, best in the bulb-frame in the U.K. Extremely variable in this locality - from unmarked whites to richly feathered lilacs. Late autumn.) (15+ seeds
* 347.402
                                                                                                                                          (15+ seeds) C
  348.602 CROCUS NEVADENSIS Spain, Granada, Sierra Nevada, below Penones de San Francisco. 2300 m. In turf on aw
               facing slope. 25.6.90 (Seldom seen in cultivation and reputedly difficult, this has pale lilac or white
              flowers in early spring. Often an alpine species, it is unlikely to appreciate overdrying in summer. While we have seen C. nevadensis flowering here, there is also an odd, little, stoloniferous member of the C. serotinus group here (quite distinct from the large forms of C.s. subsp. salzmannii, which grow
              on hotter, drier slopes lower down) so we cannot give you a 100% assurance on the seed!)
                                                                                                                                          (15+ seeds) D
              CROCUS NUDIFICRUS Spain, Huesca, Puerto del Portalet. 1700 m. Open areas of alpine turf. 29.6.90 (The
   349,000
              lovely, rich purple, autumn-flowering species, which grows in vast numbers in the Pyrenees (though we could find very little seed anywhere in 1990!). Usually an easy garden-plant in the U.K.) (15+ seed
                                                                                                                                          (15+ seeds)
              CROCUS SIEBERI subsp. SUBLIMIS Greece, Evia, Oros Dirfis. 1000 m. Open, stony slope, in turf and among bracken. Coll. & ex hort. D. & P. Hoskins. (The most widespread race in the Greek mountains but the least grown in cultivation. Splendid, rich lilac-purple flowers with yellow throats. Spring.)(15+ seeds) C
* 352,550
              CROCUS VELUCHENSIS Jugoslavia, Kosovo, S of Urosevacs and Vratnica. 800 m. Leaf-soil over clay in
   354.002
               dense Fagus woodland. 4.6.90 (One of the finest forms we know of this variable Balkan species. Large,
              luminous, lilac-blue flowers with deep purple tips. This is proving a good garden-plant in cool, humus-
               -rich soil - it grows wild with Erythronium, Galanthus, Anemone nemorosa, Corydalis, etc.)
              CROCUS VELUCHENSIS Greece, Pieria, Oros Olimbos. c. 2000 m. 1989 seed coll. P. & P. Watt (The Olympus
   354.003
               forms also tend to be fairly robust and good garden-plants. They tend to more pinkish lilacs)(15+ seeds) D
              CROCUS VELUCHENSIS Jugoslavia, Makedonija, Popova Sapka above Tetovo. 2200 m. Open slopes in turf and
   354.004
               matted Vaccinium. 13.6.90 (A typical, alpine snow-melt form which grows with C. scardicus (not a seed
               on this in 1990) - much smaller and probably much more difficult in cultivation.)
               CROCUS VELUCHENSIS Greece, Ioanina, Katara. 1700 m. Grazed turf. 11.6.90 (These alpine forms
   354.005
               this flowers around the edge of melting snow-patches - are totally distinct horticulturally.)(15+ se
               CYCLAMEN AFRICANUM Algeria, Kabylie, E of Azazga. 850 m. In humus under deciduous Quercus and among
* 358.000
               stones in open areas. 1990 seed ex hort. A. King and J. Blanchard from our material coll. 1966 (This
               large-leaved, autumn-flowering species definitely needs protection - best frost-free - in U.K. (10 seeds) E
              CYCLAMEN BALEARICUM Spain, Islas Baleares, Mallorca, N of Andratx. 350 m. Among Quercus in humus. Coll. & ex hort. D. & P. Hoskins (A charming little version of C. repandum with delicately pencilled, white
* 358.500
               flowers in spring and distinct, mottled, grey-green leaves. Best frost-free in shade.)
                                                                                                                                           (20+ seeds) C
              CYCLAMEN CILICIUM Turkey, Antalya, N of Akseki. 1500 m. Stony humas under Abies on limestone. From our 1985 coll. (Extremely hardy, autumn-flowering pink. Likes a well-drained, sunny site.) (15+ se
* 359.000
              CYCLAMEN GRAECUM Greece, Lakonia, Agios Nikolaos, NW of Githio. 500 m. Steep slopes under clives. From our 1984 coll. ex hort. M. Jope. (Pink autumn-flowering species. Border-line hardiness and best kept dry
* 363.003
               -ish under glass in U.K. The plants here have especially fine leaves; these were selected.) (15+ seeds)
               CYCLAMEN CRAECUM Greece, Argolida, Poros near Askeli. Olive groves at sea-level. Coll. & ex hort.
M. Jope. (All forms of C. graecum have marvellous leaves and Melvyn Jope selects the best.) (15+ seeds) D
* 363.006
               CYCLAMEN HEDERIFOLIUM Greece, Evia, above Metohi W of Karistos. 200 m. N & W facing sides of gulley.
* 364.003
               Coll. & ex hort. D. & P. Hoskins (Form with large flowers & leaves like C. africanum.)
                                                                                                                                           (20+ seeds) B
               CYCLAMEN HEDERIFOLIUM Greece, Preveza, above Lichnos near Parga. 100 m. Steep slope under olive-trees.
* 364.005
               Coll. & ex hort. D. & P. Hoskins (Form with flower petals twisted like C. trochopteranthum.) (15+ seeds) B
               CYCLAMEN PURPURASCENS Italy, Friuli-Venezia Giulia, NW of Trieste.100 m. Openings among scrub. From our 1966 material ex hort. D. Hoskins. (Well-marked leaves and easier than Alpine forest forms.) (15+ seeds)
* 367.500
 * 368.003 CYCLAMEN REPANDUM subsp. PELOPONNESTACUM See our seed-bank supplement. A few fresh 1990 seeds.
                                                                                                                                                            F:
               CYCLAMEN ROHLFSIANUM Regret no new 1990 seeds but some 1989 material still available.
                                                                                                                                            (10 seeds) F
 * 369,000
               DRABA HISPANICA var. SECURENSIS Spain, Jaen, Sierra de Cazorla, Prado Redondo. 1500 m. N facing lime-
-stone crevices. 23.6.90 (Tight, bristly, green cushions and short-stemmed yellow heads.) (20+ seeds) C
   420,450
               ERODIUM ABSINTHOIDES Greece, Larissa, Oros Ossa. To 1900 m. Limestone crevices. 1989 seed coll. P. & P.
   453.000
                Watt. (Extremely local, disjunct species, only known in Greece from two mountain summits. Much cut,
                downy foliage and umbels of lilac flowers on stems of about 15 cm. Dr. L. Bacon in his article on this
               genus (Bull.Alp.Gard.Soc. Vol.58, p.69 (March, 1990)) states this is E.a. subsp. elatum but J. Persson (Mountain Flora of Greece, Vol.1, p.552) points out this is a synonym of E. guiccardii and declines to assign an infraspecific name to the Greek plants at present. A very difficult genus to collect)(8 seeds) C
               ERYNGIUM GLACIALE Spain, Granada, Sierra Nevada, towards Pico del Veleta. 2700 m. Exposed stony slopes
 * 461,000
                Fx hort. M. Tucker from our 1984 coll. (Not even in flower when we were here in June, 1990!) (15+ seeds)
                ERYNGIUM SPINALBA France, Vaucluse, Le Mont Ventoux. 1800 m. Limestone scree & stony areas. Ex hort.
 * 462,200
                M. Tucker from our 1984 coll. (Very silvery plant, about 30 cm. high, with blue-green heads.)(15+ seeds) C
                ERYTHRONIUM DENS-CANIS Greece, Drama, Falakro, above Agio Pnevma to Hionotripa. 1800 m. Depressions on open grassy slopes with sparse Juniperus. 9.6.90 (Notwithstanding the riches produced by Erythronium in
    470.001
                in western N America, it is hard to name the equal of this Eurasian species, with its nodding, deep pink
                flowers rising on short stems between two, thick-textured, blue-green leaves, generously marbled with
                red-brown. We have already mentioned the extraordinary relic populations on Falakro and here is another Euro-siberian at the SE extremity of its distribution (the species is not even mentioned as growing in
                Greece in 'Flora Europaea'). Not seen in flower here but we assume it is pink not white.)
                                                                                                                                            (20+ seeds) C
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PRICE CODE A : \$1.50 ; £1.00 ; DM3, - ; FF10. - PRICE CODE D : \$4.00 ; £2.50 ; DM 7,50 ; FF25.
B : \$2.50 ; £1.50 ; DM4,50 ; FF15.
C : \$3.50 ; £2.00 ; DM6, - ; FF20.
F : \$7.00 ; £4.50 ; DM10, - ; FF45. -

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EUPHORBIA CHARACIAS (subsp. characias) Spain, Granada, Sierra Nevada, Puerto de la Ragua. 1900 m.
  475.500
               Open stony slopes on schist. 24.6.90 (Rather a distinct form here with particularly downy foliage giving it a grey appearance. In this western race the flower heads are stubby and wider at the top
               than at the base; the dark-brown glands of the flowers are diagnostic for the type-race.) (204 seeds) B
              EUPHORBIA CHARACIAS subsp. WULFENII Jugoslavia, Hrvatska, Biokovo Planina, SE of Makarska. 500 m. Open, stony, limestone slopes. 31.5.90 (The eastern race, distinguished by its yellow glands but also
  475.603
               about twice the height of the preceding, at about 1.5 m., and with more columnar heads. These are of
               immense architectural value in the garden - evergreen, sub-shrubby perennials for full sun.) (20+ seeds) B
              EUPHORBIA MYRSINITES Jugoslavia, Hrvatska, N of Risan. 800 m. Open limestone slopes. 2.6.90 (Prostrate
               stems with fleshy, grey foliage carry greeny yellow heads in spring. A garden-plant of proven worth, easily grown in a well-drained place in full sun and the hardiest of Subsect. Myrsiniteae.) (20+ seeds) B
              EUPHORBIA MYRSINITES
5.6.90 (A very much dwarfer form with leaves about half the size of the preceding - the Galicica tend
   480.006
               to produce such distinct populations - but we cannot assure you that it is genetically fixed. (20+ seeds) C
               EUPHORBIA RIGIDA Greece, Lakonia, N of Sparti. 500 m. Exposed gravelly areas. 1989 seed ex hort D. Glen
* 481.501
               from our 1984 coll. (Possibly the best of Subsect. Myrsiniteae but needs a sheltered, sunny, well-drain-
               -ed site in the U.K. Whorled, blue-grey leaves and lemon-yellow heads in early spring.)
                                                                                                                                              (20+ seeds)
              FRITILLARIA EHRHARTII Greece, Evia, W of Karistos. 200 m. N & W facing sides of gulleys on talc-schist.
* 494.800
               Coll. & ex hort. D. & P. Hoskins. (Lovely, local species with bloomy, grape-black bells, ruby against the light. A fine plant for an alpine-house pan or in the bulb-frame.)

(20+ seed
                                                                                                                                             (20+ seeds) D
              FRITILLARIA GRAECA (subsp. graeca) Greece, Ahaia, Ori Aroania, Helmos, N side above Kalavrita. 2000 m.
* 496,000
               Stony slopes in alpine steppe. Our 1990 seed from our 1986 coll. (Very hardy, very dwarf, 10 cm. high
               form, illustrated in Rix & Phillips 'The Bulb Book' from Polunin & Chater 13017 coll. here.) (15+ seeds) E
              FRITILLARIA GRAECA subsp. THESSALA Greece, Ioanina, Smolikas above Agios Parashevi. 1500 m. Open, dry pasture on limestone outcrops. Seed from Christian & Hoog 880 ex hort P. Christian. (The more robust,
* 496.202
              northern race with its bracts in a whorl of three. Flowers well chequered with red in this form.) (20+) C
              FRITILLARIA GUSSICHAE Jugoslavia, Makedonija, Baba Planina, above Magarevo. 1400 m. Steep slopes on
* 496.501
              igneous rock. 1990 seed ex hort. D. Hoskins from our 1984 coll. (An extremely local species with very glaucous leaves and flowers. Green bells shaded with brown but not tessellated.) (10 see
                                                                                                                                              (10 seeds) E
              FRITILLARIA IONICA Greece, Kerkira, Pandokrator. 1989 seed ex hort. D. Hoskins from an E. Sewell coll.
* 497.700
               (Confined to Corfu and currently placed under F. graeca thessala. Elegant, largely green bells.) (15+) D
              FRITILLARIA MESSANENSIS subsp. GRACILIS Jugoslavia, Bosna i Hercegovina, Bjelasnica. Ex hort. P. Christian. (Usually a plant of oak scrub over limestone. Distinct from the more southern taxa in its
* 499.701
              alternate bracts and untesselated flowers - chestnut brown, gold-edged bells. Easily grown.) (20+ seeds) B
              FRITILLARIA MONTANA grows as a series of disjointed populations on the limestones of S Europe from SE France to NW Greece. The group extends E to the Siberian F. ruthenica with its winged capsule. The
              local populations vary greatly on a general pattern : the bell-shaped flowers are always tessellated in
              purple, brown or black on a greenish ground and have a papillose, trifid style; the linear leaves can be either alternate or in whorls of three - sometimes both in the same population. Many names have been
              applied or misapplied to these European plants : F. orientalis, F. nigra, F. tenella, etc. Considering
              the current interest in Fritillaria, they are not commonly seen in cultivation. In general, they are quite easily grown and temperature-hardy but, as plants of dryish habitats, are really better in a bulb-frame than the open garden in the U.K. A raised bed in full sum might be a possibility.
  500.300 FRITILLARIA MONTANA Jugoslavia, Makedonija, Galicica Planina, above Trpjeca. 1600 m. Exposed, dry lime-stone slopes. 12.6.90 (A fairly dwarf form with globular, purple-brown tessellated bells. Extremely unusual in that the bulbs can be stoloniferous - a typical Galicica eccentricity!) (20+ seeds)
              FRITILLARIA MONTANA Jugoslavia, Hrvatska, Biokovo Planina, above Tucepi. 900 m. Among limestone boulders, in scrub. 31.5.90 (From the Dalmatian Coast ranges. Not seen in flower here.) (15.
  500.301
                                                                                                                                             (15+ seeds) D
              FRITILLARIA MONTANA Jugoslavia, Hrvatska, Velebit Planina, above Karlobag. 500 m. Among limestone
  500.302
              rocks on scrub-covered slope. 30.5.90 (Also a coastal mountain habitat. Not seen in flower.) (15+ seeds) D
              FRITILLARIA MONTANA France, Alpes-Maritimes, NW of Gourdon to Caussols. c. 1000 m. Among grasses on N facing limestone slope with scattered Juniperus. Ex hort. P. Christian from his 1979 coll. PJC 282.
* 500.303
               (A French population which has been described as F. caussolensis. Heavily chequered red-brown or wine.
              Though Martyn Rix considers unwinged capsules diagnostic for this species, Paul Christian tells us that
              this population has both winged and unwinged capsules occurring together. A good grower.)
              CENTIANA OCCIDENTALIS Spain, Huesca, Puerto del Portalet. 1700 m. Steep grassy slope on limestone. 29.6.90 (Little-known, W Pyrenean endemic member of the G. acaulis group, possibly closest to the
  519.001
              eastern G. clusii. Rather uncommon in the wild in our experience.)
                                                                                                                                             (20+ seeds) D
              CENTIANA VERNA subsp. BALCANICA Greece, Drama, Falakro, ridge below Hionotripa. 1900 m. Exposed,
  521.601
              montane grassland. 9.6.90 (The Balkan and W Turkish race of the Spring Gentian, perfectly distinct from
              G.v. subsp. pontica, though it is assigned to this in 'Flora Europaea'. The illustration in Bull. Alp. Gard. Soc. Vol. 57, p. 126 (June, 1989) is of a plant on Olympus. Here it is an even richer, darker blue
              with the same blue-black tinted calyx. It is over 25 years since we collected seed of this.) (50+ seeds)
              CLADIOLUS KOTSCHYANUS Turkey, Kayseri, E of Pinarbasi. 1200 m. Hay meadows. 1990 seed ex hort M. Tucker from our 1985 coll. (Robust hay meadow form. Wild seed-bank seed also still available.) (20+ seeds)
* 532.600
              GLADIOLUS KOTSCHYANUS Turkey, Erzurum, Kop Dag above Askale. 2400 m. Wet-flush among Salix & Betula.
* 532.602
               1990 seed from our 1986 coll. ex hort. M. Tucker. (Dwarf, crimson but not all come dwarf!)
             GLOBULARIA SPINOSA Spain, Jaen, Sierra de Cazorla, above source of Guadalquivir. 1400 m. Fissures on limestone cliffs. 23.6.90 (Rock-hugging clumps of beautiful, blue-grey holly-leaves - the pale blue flower heads on rather long stems are very much secondary to the foliage. Endemic to S.E. Spain.)
  537.200
                                                                                                                                                               D
             HABERLEA RHODOPENSIS Greece, Drama, NW of Drama. 300 m. N facing rock-fissures. 9.6.90 (This very beautiful Gesneriad with exquisite pale-lavender flowers is endemic to the mountains on either side of
  547.000
              the Greek/Bulgarian border. Easily grown in a vertical shady crevice, alpine-house or N facing dry stone
              wall outside in the U.K. The minute seed should be surface sown, covered with glass and newspaper and watered from below - drying out when germinating is the main cause of failure.) (100+ seed
                                                                                                                                            (100+ seeds) D
  PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. -
                                                                                 PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. ~
                         $2.50 ; £1.50 ; DM4,50 ; FF15. -
                                                                                                  E : $5.50 ; £3.50 ; DM10, - ; FF35. -
                         $3.50 ; £2.00 ; DM6, - ; FF20. -
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F: \$7.00; £4.50; DM13, -; FF45. -

HELLEBORUS

We planned our 1990 journey to S Europe to collect as comprehensive a series as possible of the European Helleborus species. It is extremely difficult to arrange to collect all the mainland species in a short time and in a single season so we are not displeased with the results. We knew we should be too late in the field to make a good collection of the extreme cut-leaved race of H. multifidus but we had hoped to be able to collect seed in the N. When we stayed with our old friends Dr. Hans & Helga Simon on the way out, Hans thought we might be too late: "It is not so cold in the N due to the Pannonic influence!" He was right; the seed had gone. After that everything went well in spite of a season when flowering was poor and seed-set even poorer than we have seen previously. Having collected an unprecedent -ed range of wild Hellebore seed, we now have the problem of naming the collections. In 1979, I made a trip early in the season to see as many as possible of the SE European Hellebores in flower. I was armed with Prof. Tutin's account of the genus in 'Flora Europeae'. This was rapidly discarded with cries of 'Useless!' and 'Rubbish!' to take its place alongside such monumental and unworkable monographs as Wherry's 'The Genus Phlox' or Williams' account of Mertensia. The secret of success with such works is the knowledge that hardly anyone is going to use them to identify plants in the field; the dried plant on a herbarium sheet usually represents only a fraction of 1% of a particular population - even with ten sheets from a particular locality, which would be quite exceptional, you might have only 1% of the variation represented - so that it is very much easier to assign names to a few dried plants than it is to an extensive wild colony. Nevertheless, memories having mellowed over the past decade and having become more suggest—ible with age, we set off sanguinely to identify our collections according to Brian Mathew's new monograph.

Published in 1989, this is undeniably indispensible, attractively produced, impeccably researched and rich in information. The classification, set amid such excellence and presented in a convincing fashion with a dichotomous key and full descriptions, might easily delude those who have little or no experience of these plants in the wild that an idealistic fantasy is in fact reality. Brian is well aware that life is not so simple and is shrewd enough to counter such criticism by stating unequivocally in his foreword "...that there is no absolutely foolproof system of classification. So please, when reading through this work with a critical eye, spare a thought for the taxonomist who, at a fixed point in time on the constantly moving path of evolution, is expected to place all living things in perfect units with precise descriptions and indisputable names attached. Hellebores, to take but one example, do not conform!" Well Brian is an honest man - there are few botanists who actually tell you that their classification is likely to be unworkable - and as an honest man has to be rated more highly than Profs. Tutin or Wherry who leave you to find this out for yourself. Nevertheless, I balk at sympathy - the spare a thought for the poor old taxonomist bit with its hint of Kleenex and violins. I am a hard man. I am the one who has to go out and stick these names on the actual plants. To me this is like an aircraft designer telling a test-pilot as he steps out on the tarmac, "It's a great-looking 'plane! I've done my best with it but I'm pretty sure it will crash on take-off." Thank God taxonomists don't design aircraft.

Those of you who have invested £30 or so in this latest account are unlikely to take it kindly if we go crawling back to the discredited Prof. Tutin classification, so we ruthlessly applied Brian Mathew's names. This involved ignoring the criteria he uses: Colour - not in theory applicable to seed collections but in reality irrelevant as we have never seen a colony of all-purple hellebores; Hairiness - only one collection had more than a minute pubescence along the veins beneath; Follicles - while there is no denying broad tendencies, it is usually possible to find exceptions and in many cases it is a question of seeing what you want to see; Overwintering Leaves - wishful thinking - it depends where the plants are growing (note illustration on p. 35 of said monograph where H. orientalis, for which overwintering leaves are diagnostic is shown without leaves which have overwintered!); Leaf toothing - fairly inconsistent; Leaf divisions: often unreliable but interesting (we made counts of the divisions on the least-divided and most-divided leaves we could find in a particular colony and these are given). How then have we named these collections? Fortunately Brian has provided a useful map on p. 29 of his book. Using this enabled us to identify everything without recourse to the key or individual descriptions. It is all easier than we thought! Further comments on individual collections as we go along our way into Never-Never Land. No need to be too concerned over names; we have only collected from defined, geographically separated colonies which each have their own characteristics. We have really overstated the problem - and so has Brian Mathew - it only lies with one group, Section Helleborastrum. The other Sections are clearly defined and offer no problems at all.

- 559.800 H. ARGUTIFOLIUS France, Corse, SE of Calenzana. 1200 m. N facing slopes in grassy scrub. 1989 seed coll.

 Barbara McLewin (As wild coll. seed of this is so seldom available, we repeat this listing. Seed has been refrigerated and should still give some germination. If you do not need field data, 1990 cultivated seed of this species is listed in Section III. A Corsican endemic and an excellent garden-plant.) (204 seeds) B
- 560.623 HELLEBORUS CYCLOPHYLLUS Jugoslavia, Kosovo, between Strpce & Brezovica (E of Prizren). 1000 m. Banks of heavy clay at edge of deciduous woodland. 4.6.90 (An extremely robust form with large leaves and large flowers. Total leaf divisions 9-18. Almost at the point where Brian's H. odorus distribution meets)(15+) E
- HELLEBORUS CYCLOPHYLLUS Jugoslavia, Makedonija, above Otesevo on Lake Prespa. 1200 m. Margin of oak woodland in clay over limestone. 5.6.90 (Like the above total leaf divisions 8-15 leaves probably overwinter here and moreover most had follicles connate at the base, keying out as H. odorus, though here at the point where the Albanian/Greek/Jugoslavian borders meet should be the core of H. cyclophyll-us distribution. Ecologically distinct from the populations at 1600 m. in the Galicica.) (15+ seeds) E
- 560.625 HELLEBORUS CYCLOPHYLLUS Greece, Drama, above Volokas to Falakro. 1400 m. Stony grazed turf on open limestone slopes. 9.6.90 (Up here in the NE corner of Greece we are approaching the area where it is alleged that H. orientalis starts (though no-one appears to have seen anything which could be assigned to this from Thrace). Flowers here appear to be a much more creamy green than the classic populations on the S Greek mountains; also interesting in that this was the only coll. still puberulent on the leaf undersides although hairy in spring most are glabrescent. 10-15 leaf divisions.) (20+ seeds)
- HELLEBORUS CYCLOPHYLLUS Greece, Trikala, Katara above Metsovon. 1700 m. Open slopes and woodland margins. 11.6.90 (Knowing we should be far too late for seed from what we could call classic colonies of this on mountains such as Parnassos or Dirfis, we thought this N Pindus population would suffice for those who want the 'true' yellow-green hellebore of the Greek mountains. Closer examination showed it to be disconcertingly variable in flower size and with from 8-25 leaf divisions.) (20+ seeds)
- 561.002 HELLEBORUS FOETIDUS Spain, Jaen, Sierra de Cazorla, Prado Redondo. 1300 m. Among Pinus on steep, lime--stone slopes. 23.6.90 (Excellent, large form of this distinct, widespread species.) (20+ seeds)

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PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. - PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. -

B : $2.50 ; £1.50 ; DM4,50 ; FF15. - E : $5.50 ; £3.50 ; DM10, - ; FF35. -

C : $3.50 ; £2.00 ; DM6, - ; FF20. - F : $7.00 ; £4.50 ; DM13, - ; FF45. -
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* 561.400 H. LIVIDUS Spain, Islas Baleares, Mallorca, NE of Andraitx. 100 m. Among Rosa scrub at base of cliffs
              in limestone talus. From original wild material coll. D. & P. Hoskins in 1973 (We have managed to hold
              on to a few of the seedlings collected in Mallorca and given to us by Dave Hoskins 7 years ago. This
              year Helen Barton collected seed from them but we now hope to be able to establish them here under
              glass to provide more seed periodically. Only a few this season, from plants grown segregated under
              glass and unlikely to be contaminated by H. argutifolius. This species germinates in autumn to early
              winter, it is not satisfactory outdoors in the U.K. and is best grown as tender Cyclamen.)
              H. MULTIFIDUS As we understand the taxa assigned to this species, it is not at all difficult to accept
              Brian Mathew's division of the Jugoslavian representatives into three subspecies, which in our experi-
              -ence occupy three distinct geographically isolated areas. While we are at present uncertain as to the
              precise extent of each, we are at a loss to understand Brian's many references to "coastal mountains"
               - we have never seen any Hellebores on the slopes along the Jugoslavian coast nor in the main body of
              what we should call the coastal ranges : the Biokovo and Velebit for instance. The Hellebores we know
              grow in upland areas on the inland side of the coastal hills, their eastern extension blocked by the higher mountains of the Dinaric ranges and their extensions. We also find the altitudes he quotes quite
              incredible - up to 1600 m. for H.m. subsp. hercegovinus and up to 1500 m. for H.m. multifidus. We have
              only found these at around 500 m. on limestone where it is extremely hot and dry in summer. In most
              seasons they go dormant in summer (we don't expect many people look at Hellebores in August!) though
              in cultivation foliage will be retained. A very sunny, well-drained site or bulb-frame will be best.
  561.500 H. MULTIFIDUS (subsp. multifidus) Jugoslavia, Hrvatska, NW of Bruvno. 500 m. Exposed areas of stony grassland. 29.5.90 (Total leaf-divisions 30-70. From a peripheral colony in a colder, inland locality - the core colonies about 30 km. S, E of Obrovacs (NE of Zadar) had dropped their seeds.) (15+ seed
  561.602 <u>H. MULTIFIDUS subsp. HERCEGOVINUS</u> Jugoslavia, Bosna i Hercegovina, NNW of Bileca. 600 m. Margins of Quercus scrub. 1.6.90 (Previously listed in 1984 by us as H. multifidus subsp. multifidus, following 'Flora Europaea'. A few seeds from what we believe to be one of the highest, most inland localities -
              again seed in the area it is most numerous, around Trebinje, had dehisced, though flowering was very
              sparse even here in 1990. The most divided leaf we found here had 185 narrow, linear segments (10 seeds) F
             H. MULTIFIDUS subsp. ISTRIACUS Jugoslavia, Slovenija, NW of Postojna. 600 m. Openings in deciduous
              woodland. 28.5.90 (While many plants from this colony and the next could probably be comfortably placed
              in this taxon, as defined by Brian, it would have been useful to keep the name for the fairly even populations which occur on the karst S of here (& NW of Rijeka). We could find no seed on these in 1990.
              This is more variable, probably incorporating H. odorus or the like. 10-25 leaf-divisions.) (15+ seeds) D
             H. MULTIFIDUS subsp. ISTRIACUS Jugoslavia, Hrvatska, E of Vratnik. 700 m. Open, grassy slopes. 28.5.90 (An exceptionally variable colony, 8-60 leaf divisions, growing at a high altitude for Hellebores in this area. We have seen these in flower soon after snow-melt in 1979 - some very pretty little plants
  561.702
              here with glaucous tinge to some flowers and the occasional one with a purple-rimmed cup.)
             H. NICER subsp. MACRANTHUS Italy, Trentino - Alto Adige, Mga Giu, S of Val di Ledro. 1200 m. Woodland over limestone. Coll. P. & P. Watt July, 1990. (H. niger was simply not ready when we passed through
  561.803
              N Italy in June, so we are very grateful to Peter & Penny Watt for filling in this gap. We are not
              wholly convinced of the justification for splitting H. niger into two subspecies but there are some
              magnificent forms in the Lake Garda area, though a good degree of variation will occur.)
                                                                                                                                             (15+ seeds) D
              H. ODORUS No matter how botanically suspect we consider the grounds for maintaining H. cyclophyllus and,
              dare we say, H. viridis and H. orientalis, at separate specific rank, it is certainly possible to find
              reasonably uniform, geographically isolated colonies which one can accept as 'good' representatives of
              these taxa. This has not yet been our experience with H. odorus. If these exist, we can only assume they
              occur in areas which we have not visited. The following are placed here as we cannot see where else to
              put them. There are some excellent - and not always variable - non-conformists here. All worth trying.
             H. ODORUS Jugoslavia, Crna Gora, between Zaton & Bioca. 1000 m. Stony slopes with sparse scrub. 3.6.90 (10-15 leaf-segments in this and the next. Seemed to have been a very creamy yellow-green.) (20+ seeds)
  562,001
             H. ODORUS Jugoslavia, Crna Gora, SE of Gorazde. 1000 m. Open stony slopes. 3.6.90 (Probably the near
  562.002
               est to 'pure' H. odorus here but it is doubtful if leaves overwinter in this cold area.)
             H. ODORUS Jugoslavia, Crna Gora, Bac. 900 m. Steep stony slope. 3.6.90 (This and the above two are all
  562.003
              from near a little blank spot on Brian's map. All seemed greens with 5-25 leaf segments here. (15+ seeds) D
             H. ODORUS Jugoslavia, Bosna i Hercegovina, above Borike, between Visegrad & Rogatica. c. 1000 m. Stony turf over limestone with Crataegus & Juniperus. 14.6.90 (These are from a vast colony extending over a
 562.004
              great, cold highland area E of Sarajevo. They are far removed from what we have called H. cyclophyllus
              and it would be expected that we have 'good' H. odorus here. In fact, the diagnostic follicle feature
             (this cannot really worry growers!) was somewhat irregular: some were free, some were connate and some had the audacity to be stipitate. Total leaf divisions varied from 9 to 16 - if leaves overwinter here
              they will have to do so under several feet of snow. Expect excellent yellow-greens.)
 562.403 H. ORIENTALIS Turkey, Artvin, Genya Da. 1700 m. Open meadows and margins of coniferous woodland.
             23.7.88 (Sorry no fresh coll. from Turkey. This has been in the refrigerator and may give reasonable germination if you have missed this before. This is from the furthest NE corner of Turkey near the USSR
              border - usually cream or white tinged green. See Section III for the garden hybrids of this (20+ seeds) C
             H. TORQUATUS To us this is the unattainable. Maybe it is better to live with a gardener's fantasy than reality. Life was perhaps a little simpler when 'Flora Europaea' placed this as H. multifidus ssp.
              serbicus. Now that Brian has dredged up the somewhat dubious name of H. torquatus and reinstated the
              taxon at specific level, there will be no stopping the myth-merchants. Now that there is no type speci-
              -men and no type locality for this taxon, it is impossible for the sceptic to wrestle with the intang-
             -men and no type locality for this taxon, it is impossible for the sceptic to wrestle with the inteng-
-ible. At least I was able to go in 1979 and look at the hellebores in the type-locality for H. serbicus
S of Raska, near the border of Serbia and Kosovo. Seed had gone here by the time we reached it in 1990
but the plants here are much the same as those in Montenegro (Crna Gora) and every bit as variable. What
we want to see is a population of purple-flowered hellebores - reasonably homogeneous. After all it is
the purple colouring which is the diagnostic feature of both H. torquatus and H. serbicus. Without it we
are not clear how Brian separates these and H. multifidus. We are perfectly open minded and willing to
             accept that all the populations we know are hybrids or intergrades involving H. multifidus and/or H. odorus/cyclophyllus with the 'true' H. torquatus. Any specific information on purple-flowered colonies
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in Jugoslavia will be promptly investigated! Expect a lot of variation from the following collections.

- H. TORQUATUS Jugoslavia, Bosna i Hercegovina, NW of Vrtoce (SE of Bihac). 400 m. Open grassy slopes & margins of deciduous woodland on limestone. 15.6.90 (This would appear to be the northern race called H. croaticus by Martinis in 1973 and to us reasonably distinct from the Montenegro colonies. Colour apart, however, it would not be easily separable from H. multifidus multifidus, which grows in a valley parallel to this, only 30 km. away but on the other side of a mountain range, our ref. 561.500. Will McLewin checked this colony earlier in 1990 when it was in flower and assures us almost all have some degree of purple, even if only a tinge or veining. The plant photographed on p.106 of Brian's book was found near here (rumoured to be growing in a heap of road-mending material!) there is an extension of this population E of Bosanski Petrovac. The leaves in this were cut into 40-80 segments. A very interesting coll. likely to produce material unlike anything in cultivation at present.) (15+ seeds) E
- 562.801 <u>H. TORQUATUS</u> <u>Selected</u> Locality as above. (Probably no more likely to produce more solid purples, a reasonable range of which should be anticipated from the general coll., but taken from plants which appeared to have a purplish tinge still evident by mid-June. Very few did!) (10 seeds)
- 562.802 H. TORQUATUS Jugoslavia, Crna Gora, N of Kolasin. 1100 m. Open areas of stony, grazed grassland.
 3.6.90 (We have seen these Montenegran colonies in flower and all we know virtually cover the range of variation illustrated on p. 45 of the monograph (we even found a double very similar to Liz Strangman's coll. here) as well as having much greener-flowered plants. The camera may not lie but both photographers and botanists collecting herbarium material can be selective; you will also have to be selective with seedlings and choose whatever your own idea is of H. torquatus. 15-25 leaf segments.) (15+ seeds) E
- 562.803 H. TORQUATUS Jugoslavia, Crna Gora, Andrijevica. 1100 m. Open slope at edge of deciduous woodland.
 3.6.90 (Comparatively even here probably only so as there are very few plants in this spot grey-purple outside and yellow-green within, very similar to the H. torquatus x orientalis hybrid we named 'Titania'. The photograph in the bottom left corner of p. 45 of the monograph was taken just S of here.

 No assurance this will come 'true' or any above will provide your 'ideal'. 12-35 leaf divisions.) (10+) F
- H. VESICARIUS Turkey, Adana, Amanus Da. above Hasanbeyli. 1100 m. Among deciduous Quercus scrub on W facing slopes. 15.7.88 (At last one like nothing else. Extraordinary relic with enormous, inflated seed-capsules. Seedlings from our 1984 coll. have now been flowered. Visiting Sylvia Martinelli and David Haselgrove in spring, 1990, we were fascinated to see that at the base of plants of this in their bulb-frame, raised from this 1984 batch, several ummistakeable new seedlings were germinating after lying dormant for 5 years! Germination can be irregular but this refrigerated 1988 seed will surely be viable. True leaves are not produced until the second year and are summer-dormant.) (15+ seeds) E
- 563.200 H. VIRIDIS (subsp. viridis) Italy, Piemonte, Colle di Tenda above Limone Piemonte. 1200 m. Edge of wood-land and sloping meadow. 18.6.90 (The first time we have really looked at H. viridis in the Maritime
 Alps nor have we ever seen this in cultivation. These are extremely fine with large flowers, very
 yellow-green even in seed. May well prove better garden-plants in the U.K. than the Balkan greens (from
 which they could only be separated with difficulty, if at all). Total leaf divisions 12-20.) (10+ seeds) D
- 563.251 HELLEBORUS VIRIDIS subsp. OCCIDENTALIS France, Hautes-Pyrenees, E of Bareges. 1500 m. Among grass on steep grazed slope. 30.6.90 (The doubtfully separable western race, very variable here in flower-size & foliage around 15 leaf divisions which is by no means always so coarsely serrate as is claimed. All the same, it should be possible to select seedlings sufficiently distinct from the others.) (15+ seeds) C

POSTSCRIPT: Notwithstanding all our comments, you can be assured that seedlings from any of the above collections will produce plants somewhat different from all the others - and possibly from each other. If you rid yourself of preconceptions, the seedlings should give you some idea of the variation of wild colonies and also of the problems confronting someone like Brian Mathew who tries to impose names on them. If the seedlings do not conform to your concept of the 'ideal', do not be disappointed. Raising such plants from wild seed is the only way most people can understand the wild plants. Open-pollinated garden-seed will be immediately 'contaminated' by cultivated material; hand-pollination of segregated clones starts the process of horticultural selection and will reinforce the 'myth' of the 'true' species as surely as the selective photographer or botanist distorts the reality of nature.

- 548.001 HACQUETIA EPIPACTIS Jugoslavia, Slovenija, NW of Postojna. 600 m. Openings in deciduous woodland over limestone. 28.5.90. (Delightful little woodlander endemic to this area. Striking ruffs of acid-yellow bracteoles surround inconspicuous flower-heads in early spring. 10 cm. high. Easy in shade.) (15+ seeds) C
- 572.201 HYACINTHOIDES NON-SCRIPTA U.K., Wales, Dyfed, below Ffostrasol. 150 m. Mixed deciduous woodland.

 5.8.90 (Surely provides the most spectacular spectacle among British bulbs in late spring.) (50+ seeds) A
- 572.300 HYACINTHOIDES REVERCHONII Spain, Jaen, Sierra de Cazorla, above source of Guadalquivir. 1400 m.

 Pockets of red clay on limestone cliffs. 23.6.90 (An extremely local and obscure plant, which we have not seen in flower. Originally described under Scilla but better placed in this genus.)

 (8 seeds) F
- * 583.900 IRIS ATTICA Greece, Viotia, Oros Parnassos. 1200 m. Turfy pockets on limestone. Ex hort. H. Barton.

 (These are from clones selected on Parnassus by Helen & Ivor Barton. It is very variable in colour from white and pale yellow to reddish purples. A very dwarf plant with falcate leaves probably best planted out in a bulb-frame. Excellent in a pan but needs repotting and division every few years.) (5 seeds)
 - 589.800 IRIS ILLYRICA Jugoslavia, Hrvatska, E of Senj. 100 m. Steep, stony, limestone slope with Juniperus.

 28.5.90 (A handsome bearded Iris, native to the coastal limestones and karst of NW Jugoslavia. Like the more southern I. pallida in its seeds and papery white spathes and like the N Italian I. cengialtii in its rich violet-purple flowers. From 15-40 cm. high, depending on the habitat. Hot, dry site. (15+ seeds) C
 - IRIS PUMILA Jugoslavia, Makedonija, Galicica Planina. 1700 m. Open stony, limestone slopes. 12.6.90 (Like many plants in the Galicica, this is a little eccentric and we place it under this species with some reservations. We had previously considered it a very short-stemmed, rather fine form of Iris reichenbachii but the bracts are not distinctly keeled. It will not key-out as I. pumila or I. attica as the short leaves are far too broad and strongly falcate; moreover it has a stem of about 3 cm.

 The few early flowers seen in 1984 were red-purple with beautiful, steel-blue beards.) (8 seeds) D

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C : \$3.50 ; £2.00 ; DM6, - ; FF20. - F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

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612.500 KNAUTIA MACEDONICA Jugoslavia, Makedonija, NW of Bitola. 900 m. Open meadows and margins of scrub.
12.6.90 (An excellent herbaceous perennial, reasonably well-known in gardens in the U.K., where it is
             unfortunately usually listed as "Scabiosa rumelica", but invariably seen only in its deep crimson form.
             These wild forms vary to brighter crimson and also to pinks and lilacs. Although the rich, pure, dark
             crimson-red predominates we hope this collection may provide further colour variations of this delight-
             -ful species with a succession of 'scabiouses' on branching stems, up to 1 m. tall.)
                                                                                                                             (30+ seeds) B
 627.800 <u>LEUCANTHEMOPSIS RADICANS</u> Spain, Granada, Sierra Nevada below Pico del Veleta. 2500-2800 m. Exposed, stony, schist slopes. 25.6.90 (A Sierra Nevadan endemic and surely the choicest and most aristocratic
             of all alpine 'daisies'. 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 Giuseppi,
             who probably first introduced it in 1933, "one of the prettiest plants in existence...a difficult plant
             to grow but more than worth the trouble it gives." We maintained and propagated material Lyn Weeks and
             I collected in 1970 for many years but it is again very little known in cultivation. To be tried in an
             acid scree-mix in full sun in the alpine-house or trough - too much water after flowering in summer can
             be just as dangerous as an excess in winter - these are dry and windy mountains after snow-melt.)
  630.480 LEUCOJUM TINGITANUM Morocco, Rif Mts., above Xauen (Chefchaouen). (We still have some seed left from
             John Blanchard's 1989 coll. of this obscure species, apparently restricted to one or two localities in NW Morocco. Spring-flowering and more robust than L. trichophyllum. John tells us that the stems are
             up to 30 cm. high, each with up to 7 white flowers to 18 mm. across.)
                                                                                                                              (15+ seeds) E
            LEUCOJUM TRICHOPHYLLUM Spain, Cadiz, W of Jerez de la Frontera. 60 m. Open, sandy areas. (We have some
  630.501
             small offset bulblets to spare of this delicate, spring-flowering species, best grown under glass in the U.K. These are mostly pink or pink-flushed white forms but we find it extremely shy-flowering. It
             has occasionally flowered well for no obvious reason. Kew seems more regularly successful.) (5 bulblets) D
             LILIUM Fresh, 1990 seed should be available later of all the species listed as cultivated seed in the
             Seed-bank Supplement. This will be hand-pollinated from bulbs grown by D. Hoskins and M. Tucker. These
             are L. candidum, L. chalcedonicum and L. pomponium ; field data as in the supplementary list. There
             will also be some stem-bulbils available of L. bulbiferum (632.401). All should be ready by October.
  634.801 LILIUM PYRENAICUM U.K., Wales, Dyfed, SW of Ffostrasol. 200 m. Open hedgerows & in woodland. 20.8.90 (Whether or not this splendid plant is truly native here is both debatable and irrelevant - it certain-
             -ly grows wild in one or two spots near here. British botanists always seem unwilling to concede that
             any more obviously attractive species is truly native although in this case other species such as the
             Narcissus and Meconopsis cambrica establish a Pyrenean connection. Yellow Turk's-cap flowers, finely
             speckled with purple and orange-brown anthers. Rather dwarfer than we have seen in France.) (15+ seeds) C
             MUSCARI AUCHERI Turkey, Bolu, near Abant Golu. 1100 m. Coll. & ex hort. N. Stevens. (From a fine form
* 688.101
             of this tidy species, selected in this cold, wet area of NW Turkey by Norman Stevens.)
                                                                                                                              (20+ seeds)
            MUSCARI CAUCASICUM Turkey, Kars, SSW of Sarikamis. 1800 m. Stony igneous slopes. Ex hort. M. Tucker from our 1985 coll. (Striking blue-violet tassels above yellow-brown bells.) (15+ se
* 688.600
                                                                                                                              (15+ seeds) B
* 6d9.450 MUSCARI GRANDIFOLIUM Morocco, Middle Atlas Range, above Ifrane. 1700 m. Red clay among limestone out-
             -crops. (Our own 1990 seed from our 1982 coll. Handsome & distinct with blue-black flowers from china-
             -blue buds. We find this a hardy and trouble-free species - surprisingly rare in gardens.)
  690.400 MUSCARI NEGLECTUM Jugoslavia, Hrvatska, Biokovo Planina. 900 m. Openings in scrub on limestone slope.
             31.5.90 (Little blue-black grape hyacinth - an easy and attractive garden-plant.)
                                                                                                                              (20+ seeds)
             NARCISSUS. Armed with some habitat information from John Blanchard, we had some vague hopes of making
             several collections of this genus in Spain this year. However, after dealing with Helleborus in the
             Balkans the season had advanced too much for any collections to be made in the more southern areas.
             However, we have a few collections from high elevations and some fresh cultivated material. It was also
             a poor year for seed of these in England but some material from John Blanchard is in Section III.
  693.800 NARCISSUS ASSOANUS (= N. juncifolius, N. requienii) France, Hautes-Pyrenees, Vallee d'Ossoue. 1500 m. S & W facing slopes in stony clay over limestone. 30.6.90 (Delightful, little, yellow-flowered Jonquil - dwarf and usually single-flowered here - usually accommodating and excellent in a pan.) (20+ seed
                                                                                                                             (20+ seeds) C
             NARCISSUS BULBOCODIUM subsp. NIVALIS (sensu Maire in 'Flore de l'Afrique du Nord') Morocco, High Atlas
             above Tizi-n-Tichka. 2000 m. In turf. (1990 seed from a 1982 coll. of this dwarf, broad-leaved, snow-melt race of yellow hoop-petticoats. An excellent and very hardy plant in the U.K. While variable it
             is distinct from the next if only in its wide, prostrate, glossy green foliage.)
                                                                                                                              (15+ seeds) B
  696.250 NARCISSUS BULBOCODIUM var. NIVALIS (auct. non Maire) Spain, Avila, Sierra de Gredos, NE of Pico Alman-
-zor. 1800 m. Among grasses on steep, open slopes. 27.6.90 (This is the little snow-melt hoop-petticoat
of the high moorlands of the Gredos, referred to N. b. var. nivalis by various authors (e.g. Polunin &
             Smythies in 'Flowers of South-west Europe'). What the correct application of this name should be is
             somewhat difficult without unearthing Graells' type-specimen. Neither John Blanchard nor ourselves have
             seen this population in flower but the leaves are narrow, semi-cylindrical and upright here.)(30+ seeds) C
* 699.200 NARCISSUS BULBOCODIUM var. PALLIDUS Morocco, High Atlas, Tizi Gourane above Amizmiz. 1800 m. Schist
             fissures & detritus. 1990 seed ex hort. D. Hoskins from our 1982 coll. (Distinct with pale to deep
             primrose yellow flowers and proving an excellent plant growing under glass in the U.K. Unlike the pre-
             -ceding two, this benefits from a dry resting period in summer. Flowers about February here. (15+ seeds) D
  702.500 NARCISSUS OBVALLARIS U.K., Wales, Dyfed, below Ffostrasol. 150 m. Open grassland, banks and deciduous
             woodland. 23.5.90 (The handsome Welsh trumpet daffodil, quite distinct from the British forms of
             N. pseudonarcissus and probably nearest to N. hispanicus in its outward -facing flowers. Usually con-
             -colorous but sometimes tending to bicolours - likely to be more variable than garden forms.)(15+ seeds) B.
  702.600 NARCISSUS PACHYBOLBUS Morocco, N of Taourirt, near Barrage Mohamet V. 380 m. 1989 seed coll. J. Blan-chard under JWB 89-09 (Sect. Tazzetae. Distinct, winter-flowering Tazetta with umbels of up to 20,
             pure white flowers. Barely, if at all, known in cultivation before this coll.)
                                                                                                                              (15+ seeds) D
            NARCISSUS POETICUS (subsp. poeticus) Spain, Lerida, S of Puerto de Viella. 2000 m. Among grass on W-
  703.200
             -facing slope with granite outcrops. 1.7.90 (This species provides one of the great spectacles of the
             European mountains with its massed display of characteristic white flowers in late spring.) (20+ seeds) B
  703.400 MARCISSUS POETICUS subsp. RADIIFLORUS Jugoslavia, Makedonija, NW of Bitola. 900 m. Open hay meadows &
            margins of scrub. 12.6.90 (The more eastern race, seldom seen in cultivation. White flowers with the little yellow corona, rimmed with red. These are lovely but not always easy in the garden.) (15+ seeds) C
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F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

- 705.500 NARCISSUS RUPICOLA Spain, Avila, Sierra de Gredos, NE of Pico Almanzor. 1800 m. Among grasses on open slopes. 27.6.90 (Section Apodanthae. A delightful species with glaucous leaves and yellow jonquil flowers. We have no seed of the Moroccan races, N. marvieri & N. watieri, this season but this wild collection of the type race might compensate. Usually a plant of acid soils in nature.) (15+ seeds)
- 785.302 PRIMULA AURICULA Italy, Trentino-Alto Adige, Cima Tuflingo above Val di Ledro. 1500 m. Limestone crevices. Coll. P.& P. Watt, July, 1990 (This is the form albocincta with leaves edged with silvery farina and splendid heads of ample yellow flowers with a ring of white meal in their centres. (30+ seeds) C
- 787.901 PRIMULA LATIFOLIA (forma cynoglossifolia) France, Savoie, Col du Petit Mont Cenis. 2200 m. Acid rocks.

 Coll. P.& P. Watt, July, 1990 (These are from particularly good blue-violet forms of this race from the

 SW Alps. For the robust Pyrenean race of this lovely species see our Seed Bank Supplement.) (30+ seeds) D
- 789.401 PRIMULA SPECTABILIS Italy, Trentino-Alto Adige, Cima Tuflungo above Val di Ledro. 1500 m. Among lime-stone rock. Coll. P.& P. Watt, July, 1990. (Restricted to the limestones above Lake Garda, this is
 a delightful species, little seen in cultivation, with fine heads of rosy pink flowers.) (30+ seeds)
- 790.201 PRIMULA VULGARIS (subsp. vulgaris) Greece, Pieria, Oros Olimbos. 1000 m. Shady banks in woodland.
 10.6.90 (The primroses on Olympus are usually fine and distinct white-flowered forms.) (30+ seeds) B
- 801.000 PULSATILLA MONTANA Jugoslavia, Slovenija, NW of Permani (WNW of Rijeka). 500 m. Exposed 'karst' with diverse meadow vegetation. 28.5.90 (As we have seen this in flower here on the inhospitable limestones, it is a handsome thing, flowering at about 15 cm. with black-violet bells.) (30+ seeds) C
- RAMONDA NATHALIAE Greece, Imathia, Oros Vermio above Naoussa. 1200 m. N facing limestone outcrop in woodland. 6.6.90 (Usually rated as the finest of this small genus; it "wipes out all the rest of the race" writes Farrer. While comparisons are unjust, it is nevertheless a magnificent plant, rather near-er R. myconi the Balkan R. serbica but with distinctly glossy rosettes and usually (but not invariably) 4-lobed flowers, in pale to deep lilac with an orange-yellow centre. This is the first seed collection we have been able to make of this in recent years. Its early date was due to the hot, dry season but some late rain had brought on a second flush of flowers so that we had the rare experience of being able to enjoy these and collect seed simultaneously. For some remarks on growing these Gesneriaceae from seed see under Haberlea; it might be added these need no freezing but prefer some warmth and that moss growth in humid conditions can smother the tiny seedlings. With care however a substantial number of plants can be raised. This is not in our experience so easy as R. myconi but it is slightly more so than R. serbica. It is at its best grown in shade in the protection of an alpine-house.) (100+ seeds) E
- RANUNCULUS ABNORMIS
 Spain, Avila, Sierra de Gredos, NE of Pico Almanzor. 1800 m. Among rocks in snow—melt gulleys (now dry). 27.6.90 (This and the following represent two of the finest Spanish buttercups. Both are summer-dormant, tuberous-rooted species with a short spring growing-season in the runnels of icy water below the melting snow-patches on high, acid mountains. However, habits and habitats apart there are no similarities. This is relatively close to R. gramineus but is altogether a more delicate plant with extremely narrow, grassy foliage and thin stems. These carry big, varnished, lemon-gold flowers with up to 10 'petals' like some dainty Adonis rather than a buttercup. While little-known in cultivation, it has been most successfully grown by Joyce & Lionel Bacon who appear to have been the first to introduce it to cultivation in the late 1960's. Choice but by no means impossible.) (20+ seeds) E
- RANUNCULUS ACETOSELLIFOLIUS Spain, Granada, Sierra Nevada, below Pico del Veleta. 2800 m. Snow-melt gulleys on exposed schist slopes. 25.6.90 (A most distinct, high alpine species, placed in a section, Sect. Acetosellifolii, all of its own and severely endemic to the Sierra Nevada. Sadly a much more intractable species than the preceding. We have grown it for long periods but we could never claim to have done so successfully (an estimation of 'success' is even more difficult when one has seen how exquisite it can be in nature.) Someone will achieve this one day! A rosette of greyish, arrow-shaped leaves produces a succession of big, pure-white, short-stemmed buttercups until the soil dries. When dormant remember it is an alpine and do not dehydrate it or expose it to high temperatures.) (20+ seeds) F

SARCOCAPNOS. To us these are among the world's finest saxatile plants but we fear that for most alpineenthusiasts today a brief introduction is necessary. The genus is very small with 3 or 4 species in SE Spain and NW Africa but there is considerable variation in local populations, especially in Morocco. They are chasmophytes, usually found on shady, limestone cliffs, forming long-lived, compact, rounded tufts of dissected, fleshy, grey-green foliage with racemes of Corydalis-like (they also belong to the Fumariaceae) flowers which are spurred in two species and unspurred in the other two. Only S. ennea--phylla, which extends N to the Pyrenees, has ever been well-known in cultivation; though a worthy plant it has to be rated the least desirable according to current criteria! Farrer makes no mention of these and in a long run of Alpine Garden Society Bulletins from 1932 to 1972, the only reference to S. crassifolia is made by Dwight Ripley (who else?) before he and Rupert Barneby abandoned the lands around the Mediterranean for the challenge of the Great Basin. S. enneaphylla is mentioned as having successfully established itself in the walls of the alpine-house at Wisley (but not in pots) from a 1948 Peter Davis coll. In 1970, Lyn Weeks and I put the introduction of these at the top of our list of priorities for our visit to Spain. We were most successful and there were a lot of plants around for a period. Lyn grew S. crassifolia to a high standard and one of his plants (not the miserable one illustrated in the Dec. 1972 Bulletin) gained a Farrer Medal and an A.M. When we stopped showing and distributing these, no-one else seemed to take on the task and we have no idea whether the two species here are even still in cultivation. They are not difficult in the alpine-house but they do need attention regarding maintenance and propagation. The latter can only satisfactorily be done by seed, which is not generously set in cultivation. Nor is it easily collected as it drops when green. Too much shade and too rich a soil produces out-of-character specimens which are short-lived. In nature plants of these can be very ancient indeed. We have not been back at some of the habitats for these since 1970 - in another 20 years we shall probably be too ancient to return - do keep them going this time!

852.002 SARCOCAPNOS BARTICA Spain, Albacete, below Riopar Viejo. 1100 m. Fissures on N-facing, limestone cliffs. 22.6.90 (in our experience, this is much more widely distributed both in SE Spain & Morocco than the next; it is also rather easier to grow. See E.K. Balls' photograph in Clay's 'The Present Day Rock Garden', Plate 46 for an idea of this. This is the finest form we know with thick, blue-grey leaves and habit very like the next except that the flowers have no spurs.) (15+ seeds) E

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B : \$2.50 ; £1.50 ; DM4,50 ; FF15.
C : \$3.50 ; £2.00 ; DM6, - ; FF20.
F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

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SARCOCAPNOS CRASSIFOLIA var. SPECIOSA Spain, Granada, Sierra Nevada, Puerto de la Ragua. 1800 m. Fissures on shady, E-facing, schist cliffs. 24.6.90 (In this the flowers, carried in generous
            racemes are white with yellow centres, which turn orange as they age, and with long, fat spurs, looking much more Corydalis-like than the preceding. Similar thick blue-grey foliage. Old plants form symetrical rounded hummocks on the cliffs; if they become straggly in the rich, soft life of cultivation, an annual trim over with scissors after flowering keeps them in shape.) (10+ a
            SAXIFRAGA COTYLEDON France, Hautes-Pyrenees, SE of Gedre. 1300 m. Fissures on acid rocks. 30.6.90 (Extremely fine, long, pyramidal panicles of large white flowers. The unrivalled Pyrenean race of this
858,500
             widespread Arctic-alpine species is rather local and seldom seen in gardens. Calcifuge.)
             SAXIFRAGA MARGINATA Jugoslavia, Makedonija, Radika gorge SW of Gostivar. 1000 m. Shady limestone
861.900
             crevices and ledges. 5.6.90 (A very beautiful member of Sect. Porophyllum forming compact cushions with
             large white flowers. Plants from this area may fit somewhere near S.m. var. karadzicensis.) (50+ seeds) D
             SAXIFRAGA SEMPERVIVUM Greece, Kavala, Pangeo above Eleftheroupoli. 1800 m. Limestone ledges & fissures. 7.6.90 (Sect. Porophyllum. Prickly hummocks send up stems covered in pink, sticky hairs carrying dark violet flowers amid pink bracts. A widespread Balkan plant excellent in a pan.) (50+ seeds)
864.001
                                                                                                                                                   (50+ seeds)
             SAXIFRAGA SEMPERVIVUM Greece, Drama, Falakro, above Agio Pnevma plateau. 1700 m. Limestone rocks.
864.003
             9.6.90 (Almost every isolated mountain population of this varies marginally from others.)
             SAXIFRAGA STRIBRNYI Greece, Drama, NW of Drama, between manganese mine & Granitis. 300 m. N-facing
864.400
             rock fissures. 9.6.90 (A fresh 1990 coll. to update our seed-bank material of this distinct endemic of
             the Greek/Bulgarian border area. Fine, flat rosettes rather like S. grisebachii but with branching cymes
             of violet-pink flowers on stems clad in red-purple hairs. Sect. Forophyllum.)
            SCILLA LITARDIERI Jugoslavia, Bosna i Hercegovina, W of Trebinje. 500 m. Fragmented limestone. 1.6.90 (Though restricted to a few places on the Adriatic margin of Jugoslavia, this is an excellent garden-
874.800
             -plant in a sunny, well-drained site in the U.K. About 20 cm. high with heads of starry, pale-blue
             flowers, rather like a miniature S. peruviana. Hardy and not fussy about a summer drying.) (20+ seeds) B
            SCILLA VERNA Spain, Avila, Sierra de Gredos, SW of Hoyos de Espino. 1700 m. Moist turf on open slopes. 27.6.90 (A rather dwarf mountain form, a few cm. high, of this pretty plant, widespread in W Europe but
878.000
             seldom seen in gardens. Dense racemes of pale-blue flowers. Worth trying in a trough.)
                                                                                                                                                   (30+ seeds) B
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- * 883.050 SCORZONERA SUBEROSA subsp. CARTENSIS Izmir, Boz Da., above Odemis. 1800 m. Open schist slopes among Astragalus. 1990 seed ex hort. J. Blanchard from our 1988 coll. (Tuberous-rooted summer-dormant species with short-lived, pink flowers and spectacular seed-heads. Not earth-shattering but pleasant.)(12+ seeds) C
- THALICTRUM TUBEROSUM Spain, Huesca, Rio Gallego valley, W of Anzanigo. 600 m. Steep, stony banks with varied vegetation. 28.6.90 (It is incredible that such a beautiful plant as this from W Europe could remain virtually unmentioned in gardening literature and unknown in gardens. Indeed almost the only references to it are by those who have seen it growing wild and may have brought back a plant for their own pleasure. There are two members of this genus in Europe which have sufficiently well-developed perianth segments to be called showy in flower: this and T. orientale, which occurs in a pure white form in a very few spots at the S end of the Greek Taiyetos Mts. It is more widespread in Turkey in the E Toros Mts. in pink and mauve forms and one of these is well established, though seldom seen, in gardens. While both are summer-dormant, this forms true tubers, rather like a miniature version of a Dahlia's. This has flowers about half as large again as T. orientale, making for a more spectacular display, and they seem to be almost always ivory coloured. These both grow about 20-30 cm. high in the wild and this is restricted to middle-altitudes in N & NE Spain with an outlying station in S France. This will probably be the first seed-collection from the wild to be widely distributed and we hope it will see this well-established as a superlative plant for the bulb-frame or alpine-house.) (15+ seeds) E
- 987.200 <u>VIOLA AETOLICA</u> Jugoslavia, Makedonija, Galicica Planina above Trpjeca. 1600 m. Grassy depressions on open limestone slopes. 5.6.90 (A charming little plant with lots of bright yellow flowers, varying in tone but never in colour. Identification of many Balkan Viola spp. is a rather esoteric business and we are not wholly happy with the name the spurs are a little longer and the sepals are acuminate in this but we shall keep you informed. Looks as if it might be good and growable outside.) (30+ seeds
- 988.500 <u>VIOLA CAZORIENSIS</u> Spain, Jaen, Sierra de Cazorla, Prado Redondo. 1500 m. N facing limestone crevices on summit rocks. 23.6.90 (The very hot dry season in S Europe meant that there was some early seed on this difficult species but it also meant that seed-set was sparse. After a few hours of searching we have just enough to list but certainly not enough to meet demand. Anticipate disappointment!) (15 seeds) F
- 989.000 <u>VIOLA CORNUTA</u> Spain, Huesca, Puerto de Portalet. 1700 m. Open meadows on limestone. 29.6.90 (Lovely Pyrenean endemic as easy and reliable in British gardens as the preceding is refractory. Successions of scented, long-spurred flowers in lilac and purple shades all summer from spreading tufts.) (30+ seeds) B
- 989.300 VIOLA CRASSIUSCULA Spain, Granada, Sierra Nevada, below Pico del Veleta. 2500-2800 m. In loose talus on exposed schist slopes. 25.6.90 (One of the most exquisite of the Sierra Nevadan endemics and the most southern of the V. cenisia group. It runs beneath the stones to form cushions set with plump, rounded flowers, invariably lavender-blue here on the slopes where Lyn Weeks & I collected the material from which the plants grown and much-esteemed in the 1970's were derived. Not easy but worthwhile.X15+ seeds) F
- 990.001

 VIOLA DUBYANA Italy, Trentino-Alto Adige, Cima Tuflungo above Val di Ledro. 1500 m. Limestone scree.

 Coll. P. & P. Watt, July, 1990. (A beautiful species only known from a small part of N Italy very well illustrated in Bull.Alp.Gard Soc., Vol.56, p.76 (March, 1988). Seldom seen in cultivation but rated more highly than V. cenisia by Peter & Penny Watt. Always bright violet-purple.) (20+ seeds)
- 992.600 VIOLA PERINENSIS Greece, Drama, Falakro, above Agio Pnevma plateau. 1800 m. Limestone talus. 9.6.90 (Restricted to the high, limestone mountains around the Greek/Bulgarian border, a very fine, distinct plant with prominent upper petals and short spurs over thick-textured foliage. Reputedly usually yellow but all we have seen here and almost all on Pangeo, are violet-purple (var. bojadschiewii).) (20+ seeds) E
- 993.150 VIOLA SCHARIENSIS Jugoslavia, Makedonija, Sar Planina, Popova Sapka above Tetovo. 2000 m. Loose, stony slopes, alpine turf & among Vaccinium. 13.6.90 (At long last we have a name for this endemic of the Sar Planina along the Jugoslavian/Albanian border. When I first collected seed in 1964, the accompanying specimens were determined by the RBC Edinburgh as "aff. albanica"; following the publication of the inadequate and often incompetent account of this genus in 'Flora Europaea', we used the name Viola grisebachiana, while being fully aware that it is neither there was no other name. Perfectly distinct and comparatively growable in the U.K. in a very well-drained site. Profuse lavender flowers. (20+ seeds)

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As ever, this section is rather a rag-bag of bits and pieces, which we cannot place elsewhere: mainly cultivated plants without field data or those cultivated for so long that data is irrelevant. In addition, we have a few wild collections by others from outside the areas we are concerned with in Sections I and II. As our lists are being sent out much earlier than usual during 1990, we have had to rely on a mixture of 1989 seed for late-maturing items and 1990 seed for those which have ripened by August. Where we can, we shall fill later orders from new 1990 seed and you may find comments to this effect in the list. Unless otherwise mentioned, seed listed is of 1990 vintage. An updated Section III, including late-ripening 1990 seed, will be sent out with our Spring, 1991 list. Seed here is from a variety of reliable sources, noted in many cases though space does not always allow full information. Seed of many species here is in short supply so please be more prepared for disappointments than in the other Sections.

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ABUTIION VITIFOLIUM A magnificent Chilean shrub, easily raised from seed and reasonably hardy in the S & W of the U.K. Downy greyish cordate leaves and masses of 'hollyhock' flowers in varying lavender shades. (30+ seeds) B
ACIPHYLLA DIEFFENBACHII A unique coll. by Terry Hatch of this Chatham Is. endemic. Terry paints a tragic picture
   of the degradation of the flora of these islands, in the S Pacific about 650 km. E of New Zealand mainland,
   caused by overgrazing. Fortunately such endemics as we have, like Myosotidium hortensia and Geranium traversii
  are growable. Seed coll. NZ, Chatham Is., Southern Cliffs. In shady volcanic scoriae.
                                                                                                           (10+ seeds) E
ALSTROEMERIA LIGTU HYBRIDS The stunning strain of hybrids developed in British gardens - every shade imaginable
   of pink, orange, flame and biscuit-colours. The easiest way is to sow where you want to grow them. (20+ seeds)
  PULCHRA A fine species (not to be confused with A. pulchella) with white flowers, flushed pink and marked
  maroon & green. From a coll. made in Chile in 1971-72 - B.C.& W. 4762. Hardy here. About 60 cm.
                                                                                                           (15+ seeds)
ALLIUM ERUBESCENS An 80 cm. high plant with silvered, lilac heads, grown by Norman Stevens from stock original-
   -ly coll. by Paul Furse on the Caspian coast of N Iran. Like the next summer-flowering - hot & dry. (20+ seeds)
                                                                                                                        В
  OBLIQUUM Central Asian species with round, pale-yellow umbels with projecting anthers. 60 cm.
ARISAEMA These mature later than Arum but Mike Tucker anticipates some for our next list.
ARUM All here are from Aroid-enthusiast Mike Tucker. Grown without heat in raised beds or frames in SW England.
  CONCINNATUM (= A. nickellii) From material coll. in Crete under P. Boyce 10. Pale green spathes.
                                                                                                             (8 seeds) C
  CYRENAICUM Little-known, Libyan relative of A. palaestinum. Large spathes with solid purple interior. (8 seeds)
  DIOSCORIDIS var. PHILISTARUM Yellow-green spathe spectacularly blotched with marcon-black. This is the race
  from W Syria. It varies greatly in different areas and other Turkish vars. are in Section II.
                                                                                                             (8 seeds)
  ELONGATUM Striking, short-stemmed, brown-purple spathes. This is the type-race from N Iran and the SW USSR .
  Mike's plants provided the material for the painting to be used in Peter Boyce's monograph.
                                                                                                             (8 seeds)
  EUXINUM An outstanding, dwarf plant from a cold, wet region of N Turkey. Spathes purplish outside; white
  with a purple border inside. Should prove a significant new, hardy species for UK gardens.
                                                                                                             (8 seeds)
  ITALICUM Still the easiest and most prolific in British gardens. This is from the type-race with striking
                                                                                                           (10+ seeds)
  cream-veined, arrow-head leaves, usually called 'Pictum' or 'Marmoratum'. Fine red fruits autumn.
  KOROLKOWII Narrow, green spathes, flushed purple inside. Large pink spadix. Tall Central Asian sp.
                                                                                                             (8 seeds)
                                                                                                                         C
  ORIENTALE One of the finest of all with huge, boat-shaped, brown-purple spathes. A good form.
                                                                                                              (8 seeds)
ASPHODELINE LUTEA Spires of yellow stars from blue-green, grassy clumps. Reliable, hardy perennial. (15+ seeds)
ASTRANTIA MAJOR From greeny whites and rich pink forms of this excellent, long-flowering perennial. (20+ seeds)
AZORINA VIDALII The pink form of this giant and spectacular, shrubby Campanula from the sea-cliffs of the Azores.
   It is best grown under glass in the U.K. and needs quite a lot of space - stunning conservatory plant. (100+)
BABIANA STRICTA Charming and colourful S African corms which seed about in Bert Hopwoods Torquay garden - else-
                                                                                                           (20+ seeds)
   -where best under glass. About 15 cm. high in varying shades from blue-violet to red-violet.
BELLEVALIA ROMANA About 30 cm. high with racemes of whitish bells maturing to brown. An odd bulb.
                                                                                                             (10 seeds) B
BERGENIA - RED HYBRIDS Collected mainly from our own clones, like 'Bartok' and 'Bizet', derived from 'Ballawley'
   and with excellent winter-foliage colour, but also with some seed from newer German hybrids.
                                                                                                            (50+ seeds)
   GENIA - WHITE HYBRIDS All from the best of the white clones initiated by Eric Smith's crosses with Bergenia stracheyi'Alba' - B. 'Brahms', B. 'Britten', etc. Very compact with tough, weather-resistant leaves. (50-
                                                                                                                  (50+)
BIARUM CARRATRACENSE Dwarf, Spanish aroid from a coll. by Chris Lovell. Purple-black velvet spathes.
                                                                                                             (5 seeds) D
CACTACEAE: PERU A rare chance to acquire one of the high altitude Andeans, forming cushions of 4 cm. wide
   stems clothed in long, white hairs. Possibly Opuntia floccosa or another member of Subgen. Tephrocactus.
   Coll. Peru, Ancash, above Huaras at over 4000 m. by Dr. H. Beaufort-Murphy. Hardy but must be dry. (10 seeds) E
CODONOPSIS OBTUSA Flopping, downy stems with grey-blue bells, intricately marked with orange inside. From a
                                                                                                            (20+ seeds)
   Paul Furse coll. in Afghanistan - on checking the number given in previous lists, it is wrong.
CLEMATIS REHDERIANA Lovely climber - fragrant, primrose-yellow bells in autumn. 1989 seed till later(20+ seeds)
COLCHICUM ? HUNCARICUM Seems to be a large form - coll. Greece, Larissa, Oros Ossa by P.& P. Watt, 1989.
   PSARIDIS K. Persson 415: Greece, Lakonia, Tsikalia. 400 m. A few 1989 seeds left of this dwarf. (15+ seeds) D
COMMELINA COELESTIS Exquisite, purest blue flowers all summer. Border-line hardy, tuberous perennial. (20+ seeds) A
CROCUS BIFLORUS subsp. PULCHRICOLOR Now proving an outstanding garden-plant. In nature restricted to a cold
   part of RW Turkey, mainly in Bolu province, where the summers are cool & moist, so it is well suited to British conditions. This material is derived from a coll. by O. Sonderhausen on Ulu Dag (as our 341.651) but it has
    now been taken into several generations from seed by Dr. Paul Christian in N Wales, resulting in a superlative
    strain of miniature crocuses in rich violet-blue shades, well adapted to UK gardens. Recommended! (20+ seeds)
CROCUS ROBERTIANUS O. Sonderhausen 998. Greece, Fokida, NE of Nafpaktos to Lidoriki. 500 m. A few 1989 seeds.(8)
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E: \$5.50; £3.50; DM10, -; FF35. -

F: \$7.00; £4.50; DM13, -; FF45. -

Our friends among the Cyclamen-enthusiasts have come up with much interesting material this season - this is especially fortuitous as this is the first time since 1984 that we have been able to issue a list at something near the best time for sowing. Ideally, we should have listed these much earlier; sowing immediately seed is ripe is the counsel of perfection. Notwithstanding such, unfortunately impracticable, advice, we have seen much excellent germination from seed sent out from our normal winter lists. Many reports confirm that our advice to soak seed in warm water for 24 hours or so before sowing appears to help. One customer had excellent results after shaking the seed mixed with sand and water, to produce mild scarification. Whether you wish to trouble with such activities for earlier sowings will be your choice but they will certainly do no harm. You may be assured in any event that, if seed does not germinate during the following winter it will come up in the subsequent one (unless mice eat it!). Having sown many hundred pots of Cyclamen over the years, very, very few failed to germinate. Where seed it derived directly from wild material with field data, it is listed in Section II but we have cross-referenced these. Chris Grey-Wilson's monograph on this genus, published in 1988, is an unrivalled reference.

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AFRICANUM For seed derived directly from our 1966 coll. in Algeria see Section II
C. BALEARICUM & C. CILICIUM Both available from material with field data in Section II
C. CILICIUM - FCC FORM Our 'standard' C. cilicium for which we gained an FCC was originally derived from a
   Peter Davis coll. (PD 25789 - same place as our 359.000). Pale pink, red nose. Autumn. Hardy.
  CILICIUM f.
              ALBUM Derived from the pure white clone introduced under the number Frank & Koenen 82-10, like the
   above from the Akseki area in SW Turkey. Not the same as the pink-nosed white listed last season.
                                                                                                       (10 seeds)
  COUM - MIXED We did not have enough seed from any one group of this hardy, winter-flowering species so in
   this are included reds, whites and pinks both plain-leaved and with beautifully marked foliage.
                                                                                                      (15+ seeds)
  COUM - PEWTER LEAVES These forms with the leaves overlaid with a dull, silver sheen have been developed
   quite recently. From rosy forms given to us by Phil Cornish & the white 'Maurice Dryden'.
                                                                                                       (10 seeds)
   CYPRIUM Mostly from wild colls. by Manfred Koenen - variable in foliage. Pure white with a pink nose in
   autumn. Needs to be grown under glass in U.K. and benefits from a hot, dry period in summer.
                                                                                                       (15+ seeds) C
C. GRAECUM Seed from material with field data is included in Section II
C. GRAECUM - SELECTED LEAVES From a vast variety of different leaf-forms of this autumn-flowering, pink species.
   Flowers best in a deep pot or planted out under glass in U.K. with a dry period in summer.
                                                                                                       (15+ seeds)
            EARLY A form grown by Dinah Batterham & originating from John Blanchard's father, with very dark
   leaves and elongated flowers - always flowers before any others and attracts much attention.
                                                                                                        (10 seeds)
   CRAECUM - SMALL LEAVES John Blanchard's plant which he has labelled "Small-leaved form, from Rhodes" was
   selected in the wild by Charles Mountfort in the 1950's. Much coveted by all who know it. Few.
                                                                                                        (10 seeds)
C. HEDERIFOLIUM The unrivalled, hardy, pink, autumn-flowering species. Also seed with field data.
                                                                                                       (20+ seeds)
C. HEDERIFOLIUM f. ALBUM The superlative white - from Dave Hoskins' finest white clone.
                                                                                                       (20± seeds)
   HEDERIFOLIUM 'APOLLO' A 'strain' or 'line' bred from the original plant at Wisley selected by E.A. Bowles as
   the finest leaved he knew. Still unrivalled in the intricacy of its silver-grey zones & marking. (15+ seeds)
   HEDERIFOLIUM 'WHITE APOLLO' Developed by Dave Hoskins from a good white seedling derived from the preceding.
   Can be relied on to produce plenty whites with the superb, silver-patterned leaves of 'Apollo'.
                                                                                                       (15+ seeds)
   HEDERIFOLIUM 'HIGHFIELD' From Dave Hoskins' clone with rather distinct, glossy foliage.
                                                                                                       (20+ seeds) B
C. HEDERIFOLIUM - SILVER LEAVES From plants given to Dave Hoskins by Melvyn Jope (who says they come fairly
   evenly from seed) - we are told these have very fine leaves but have not seen them ourselves.
                                                                                                        (10 seeds) E
   INTAMINATUM From a variety of leaf forms - both plain and grey-zoned - of this dainty, little, white,
   autumn-flowering species. Perfectly hardy but rather tiny except in a trough or rock-garden pocket. (20+ seeds) B
   LIBANOTICUM The most sumptuous of the spring-flowering ones - beautifully marked, shell-pink flowers. From
   the stock originally grown by Charles Mountfort. At its best in shade under glass in the U.K.
                                                                                                       (15+ seeds) C
   PERSICUM No-one had seed on this in 1990 but we have some 1989 seed left from deep pink forms, which should
   give germination after soaking. Again spring-flowering & for the greenhouse - like the next.
                                                                                                       (15+ seeds)
C. PSEUDIBERICUM As nobody else had seed on this in 1990, we asked Dinah Batterham, who grows this better than
    than anyone we know - neither did she but she has sent 1989 seed which she is confident about!
                                                                                                       (15+ seeds) C
 C. PURPURASCENS - SILVER LEAVES Marvellous leaves suffused almost entirely with silver. These originated from a
    few plants given to us by Manfred Koenen in the late 1970's. He found them in one spot near Limone on Lake
    Garda in N Italy; both 'Limone' and 'Lake Garda' are sometimes applied to these in cultivation but there is
    an 'infinity' of C. purpurascens in the hills around Garda and these came from a few square yards known only
    to Manfred. Usually comes very evenly now. Rose flowers in late summer and reasonably hardy.
                                                                                                         (10 seeds) E
    REPANDUM 'ALBUM' From a pure white clone which occurred with Dave Hoskins among seedlings of our FCC strain,
    originally from Corsica. Almost all come white with Dave. Quite hardy but best under glass in U.K. (10 seeds)
 C. REPANDUM subsp. PELOPONNESIACUM & C. ROHLFSIANUM Seed from material with field data in Section II
    TROCHOPTERANTHUM Distinct in its wide, windmill flowers in rich pinks in spring but not the easiest. Hardy
    but more easily managed under glass - grow cool and do not bake when dormant. This stock originally came from Stuart Boothman (who grew it outside) who had received it from the Peter Davis 25579 coll. in 1956. (10 seeds)
 DIERAMA PULCHERRIMUM Superlative S African member of the Iridaceae - absolutely hardy in the U.K. and possibly
    the most graceful plant in cultivation. Grassy tufts of foliage and arching 2 m. stems of pink bells.
                                                                                                              (20+) B
    FULCHERRIMUM - CARMINE More a rich, glowing carmine-pink than the "ruby purple" we called it before.
                                                                                                              (10+)
 FRITILLARIA ACMOPETALA One of the easiest outside in the U.K. in full sun. Elegant green & maroon.
    MELEAGRIS White and various purple-chequered forms of the lovely Snakeshead of some wet meadows in U.K. (30+)
 PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. -
                                                             PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. -
            B: $2.50; £1.50; DM4,50; FF15. -
                                                                        E: $5.50; £3.50; DM10, -; FF35. -
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C : \$3.50 ; £2.00 ; DM6, - ; FF20. -

F : \$7.00 ; £4.50 ; DM13, - ; FF45. -

HELLEBORUS

While we have provided a surfeit of wild collected Hellebore seed in Section II, it has to be admitted that these wild forms are essentially of appeal to the specialist and that for general garden purposes the hybrids, developed and selected over the last century or so, are unrivalled. These plants can be called H. x hybridus, rather than H. orientalis, which is only one of several species involved. Brian Mathew's 1989 monograph provides all the historical and practical information you could wish for about these, so we can confine ourselves to a few brief comments. Seedlings may vary considerably from the parents and we have kept the seed arranged into general groups only to give you an indication of what is more likely to materialise - no assurances can be given! Though we were involved with propagation of clones for many years, we have to recommend seed as by far the best way to acquire a range of these plants. Seedlings have much more vigour and adaptability than plants propagated vegetatively. Our comments on Cyclamen seed and the recommended treatment apply equally to these : in short sow these as soon as you can. They are best stood outside (do protect from mice which love them even more than Cyclamen seeds) during early winter; when germination occurs, they will progress more rapidly if brought in to a more protected environ--ment - even a frost-free one - and the seedlings will be large enough to plant out in late spring (if you are prepared to keep them well-weeded and watered) when they have one or two true leaves. If you do not have germin--ation the first season, you can expect it the following winter. Reports on seed sent out from our winter lists have been favourable but the earlier seed is sown the better and sooner it will come up. Seed here is from various sources : for the first time in several years we have some of our own here ; Will McLewin provides the mainstay his policy of selection is an ongoing affair and his seed contribution this year was thinner because he removed the flowers from all the 'sub-standard' ones in his collection; there is also seed here from Melvyn Jope and others. The 'bloodstock' behind the seed here is traceable to every significant enthusiast in the U.K. in recent years - Margery Fish, E.B. Anderson, Eric Smith and ourselves, Helen Ballard, Elizabeth Strangman, Robin White...

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From 'ANDROMEDA' (and similar) Seedlings are fairly reliably good, rounded purples - seldom as fine as mother(15) D
From 'AQUARIUS' (and similar) Usually an excellent parent. Distinctive finely speckled 'Zodiac type'. (15+ seeds) E
From 'DRACO' (and similar) Deep purple-pink with merged, solid basal zone of purple-black spots.
                                                                                                      (10 seeds)
From 'ORION' Our greenish-cream with bronze-red nectaries and centre (bottom right-hand on the dust-jacket of
   Brian's book). Sadly a poor parent - few have a dark centre and none has been better. You might be luckier (15)
From 'ZODIAC TYPES' Eric Smith coined the name 'Zodiac Strain' for his favourite group of hybrids - in effect
   H. guttatus with a pink ground. Expect plenty pinks with basal zones of dark maroon-purple spots. (15+ seeds)
                                              (10 seeds) D
                                                                   From PINKS Pale to medium; unspotted
From GREENS Including yellow-greens.
                                                                                                           (15)
                                                                                                                 D
From DARK PURPLES Including "smoky" purples. (15 seeds) D
                                                                   From WHITES, CREAMS & YELLOWS
                                                                                                      (10 seeds)
From RED-PURPLES Including wine-shades.
                                             (15 seeds) D
                                                                   'SPECIAL MIXTURE' McLewin's best! (15 seeds)
HELLEBORUS X HYBRIDUS - MIXED If you have none, try these for a start; otherwise select from above! (20+ seeds)
   ARGUTIFOLIUS (H. corsicus, H. lividus subsp. corsicus) 'An outstanding garden-plant in the U.K. - absolutely
   hardy in spite of its Mediterranean origins. Evergreen, spiny leaves and massed yellow-green cups. (20+ seeds)
   FOETIDUS - FRENCH FORM From near Pontarlier. These two forms from Will McLewin are most distinct. (20+ seeds)
   FOETIDUS - HUNGARIAN FORM Greyer leaves with narrower segments. Large, prominent bracts. Taller. (20+ seeds)
   NIGER ? X ARGUTIFOLIUS Hand-pollinated by Melvyn Jope but don't expect H. x nigercors. The hybrid itself is
   sterile and the cross is none too easy. You may be lucky! At worst you'll get H. niger seedlings.
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PRICE CODE A : $1.50 ; £1.00 ; DM3, - ; FF10. - PRICE CODE D : $4.00 ; £2.50 ; DM 7,50 ; FF25. -

B : $2.50 ; £1.50 ; DM4,50 ; FF15. -

C : $3.50 ; £2.00 ; DM6, - ; FF20. -

F : $7.00 ; £4.50 ; DM13, - ; FF45. -
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HESPERANTHA MARLOTTII We have not been able to verify the name of this African member of the Iridaceae (over 50 in the genus) but John Blanchard is impressed with it - "remarkable - nearly 1 m. high - seems hardy" (20+

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IRIS 'CALIFORNIAN HYBRIDS' For some wild colls. of these plants see our 1989-90 N American list. Cultivated
   plants are largely of hybrid origin. These are biased towards I. innominata with plenty yellows and browns
   but all shades through to purple can be expected. Need a well-drained, acid soil to do well.
                                                                                                          (20+ seeds) B
   CYCLOGLOSSA An extraordinary Juno only known from moist streamside areas near Herat in SW Afghanistan at
   about 1500 m. - Hedge, Wendelbo & Eckberg 7727. Proving surprisingly easy to grow in the U.K. - even in the
   open garden but safest in a bulb-frame. Like no other with 40 cm. high stems carrying up to 5, scented, violet
   -blue and white flowers in late spring. Has to be rated as one of the finest recent introductions.
                                                                                                            (8 seeds)
   GALATICA B. Mathew 9568. Dwarf, Turkish Juno. Usually yellowish & purple. A few 1989 seeds left.
   MAGNIFICA The largest Juno and one of the easiest - up to 1 m. high with pale blue flowers.
                                                                                                          (15+ seeds)
   NICOLAI Ruksans & Krummech 8176 : USSR, Tadzhik SSR, Pamir-Alai. 1800 m. Dwarf. A few 1989 seeds.
                                                                                                             (5 seeds)
   MILESII Himalayan 'Evansia' with lavender-pink, purple-mottled flowers. 60 cm. Easy & hardy here. (10+ seeds)
   SINTENISII Attractive Spuria with narrow, dark-blue flowers from tidy tufts. 1989 seed till later.(15+ seeds)
   SUBBIFLORA Splendid Portuguese Bearded Iris with pure-violet flowers. 50 cm. Hot & dry or bulb-frame.
   SUBBIFLORA HYBRID An interesting dwarf bred by the late Ivor Barton - Mike Tucker has flowered some seedlings
   from this and thinks there is much I. attica influence. Will not come 'true' but worth trying.
                                                                                                          (10+ seeds)
            Distinct W Turkish Bearded Iris. Pale-blue standards. Red-purple falls. 1990 seed later.
                                                                                                          (10+ seeds)
LILIUM No 1990 seed ready yet but it should be ripe enough soon. We have 1989 seed of the following and will be
   able to replace it shortly with 1990 seed. Any additional species available from 1990 will be in next list.
   MARTAGON 'QUARRY WOOD STRAIN' Developed from some of the best colours - both dark forms & pinks. (20+ seeds)
   MARTACON 'ALBUM' Ivory-white, green-tinged form. One of the best garden lilies in the U.K.
                                                                                                          (20+ seeds)
   REGALE Another superb garden-plant. Huge white trumpets, flushed brown-pink outside.
   TSINGTAUENSE Distinct bright-orange, upward-facing flowers. Successful in NE USA & UK outside.
                                                                                                          (15+ seeds)
LOBELIA BEQUAERTII Coll. Uganda, central Ruwenzori, near Bigo swamp at over 3000 m. by Michael Wickenden. A rare
   chance to try one of the ultimate alpine-plants. Patrick Synge, who collected here in the 1930's devotes pages
   to his account of these amazing plants: "One rosette of L. bequaertii would be several feet across...shining
   purple...(with)...a stiff green obelisk-like spike, six feet high and nearly a foot in diameter...between the
   bracts the deep purple-blue flowers appeared." Be the first to put this on an A.G.S. show-bench.
LYONOTHAMNUS FLORIBUNDUS var. ASPLENIFOLIUS A relic, monotypic genus of the Rosaceae endemic to Santa Catalina
   Is. and adjacent islands off the S Californian coast. A very rare plant in U.K. gardens - "so far as is known it has not flowered in Britain" states the 1973 edition of Bean - this is almost certainly the first British
   seed. From the superb specimen in Bert Hopwood's Torquay garden, which covered itself with flower again in
   1990 (this is 1989 seed) during another warm, dry summer. It reaches 30-50 ft. in the wild - evergreen with
   marvellous, leathery pinnate leaves, paler & downy beneath; peeling red-brown bark on a 'driftwood' trunk. Huge corymbs of white, hawthorn-like flowers. A tree of enormous character unlike any other. (50+ see
                                                                                                          (50+ seeds)
NARCISSUS A poor year for these in England. Most here are from John Blanchard (JWB). Names as in his monograph.
   BULBOCODIUM var. CONSPICUUS No data. Good, strong-growing, bright yellow hoop-petticoat.
                                                                                                          (15+ seeds) B
   BULBOCODIUM var. CRAELLSII From a 1983 JWB coll. - Spain, Sierra de Guadarrama. A most distinct, dwarf, green
   -tinged white race surprisingly little-known in cultivation. No trouble in bulb-frame or alpine-house.
                                                                                                                 (15+)
   CANTABRICUS From material given to D. Hoskins by Dr. T. Norman from somewhere in S Spain.
                                                                                                          (10+ seeds)
   CANTABRICUS var. FOLIOSUS A Moroccan race of this dwarf, winter-flowering, white hoop-petticoat.
                                                                                                          (10+ seeds)
   CYCLAMINEUS Unrivalled in acid, damp loam outside in U.K. Becoming very difficult to obtain.
   FERNANDESII M. Salmon 449 from the Portuguese type-locality at Samora Correia. Yellow jonquil.
                                                                                                          (15+ seeds)
   PANIZZIANUS JWB coll. from Grazalema in S Spain. JWB grows it well in a raised bed outside in England - in his
   view "the best garden plant in Sect. Tazzetae." Also one of the dwarfest, pure-white tazettas.
                                                                                                          (10+ seeds)
   PANIZZIANUS From a D. Haselgrove & S. Martinelli coll. - S Spain, Jimena de la Frontera. Similar. (10+ seeds)
   ROMIEUXII JWB 88-16 Morocco, Zaiane Mts., near Oulmes. Wet meadow. May be lowland form of var. zaianicus(10+)
   ROMIEUXII ? subsp. ALBIDUS JWB 88-13 From the Rif Mts. in N Morocco. This appears to be the same taxon as our numbers 833 & 838 from E Morocco & NW Algeria in 1966, growing on shale. This is from limestone. Both
   have pure white flowers with distinct projecting, scattered anthers. Hot, dry summer conditions.
   ROMIEUXII subsp. ALBIDUS var. ZAIANICUS JWB 88-17 Morocco, Zaiane Mts., near Oulmes. Off-white/pale yellow.
   ROMIEUXII subsp. ROMIEUXII var. RIFANUS JWB 89-28 Morocco, Rif Mts. 1800 m. Violet-brown spathe. (10+ seeds)
                                                                                                                       D
NECTAROSCORDUM SICULUM Handsome Allium-relative. 1 m. stems with pendant green-cream-pinkish bells. (15+ seeds)
PRATIA ARENARIA Coll. NZ Chatham Islands, Pitt Is. by Terry Hatch. See Aciphylla & Geranium traversii for some
   remarks on this flora. The little Campanula relative should be growable & hardy in an alpine-house. (30+ seeds) E
PULMONARIA SACCHARATA From 'Fruhlingshimmel', a beautiful pale clear-blue clone from Heinz Klose.
PUYA RAIMONDII 1989 coll. by Dr. H. Beaufort-Murphy: Peru, Ancash, above Huaras at over 4000 m. Incredible,
   towering, cylindrical spires of thousands of yellow flowers from Yucca-like rosettes. A good alpine to sow now
   for the 2001 Conference 3-pan class with Lobelia bequaertii and maybe an Espeletia in due course. (15+ seeds) E
ROMULEA BULBOCODIUM - KNIGHTSHAYES FORM Violet, gold-centred Crocus-flowers. Superb form hardy in S England (30+)
SCILLA AUTUMNALIS Racemes of starry, lilac-blue flowers before the leaves in autumn. 15 cm.
                                                                                                           (30+ seeds)
SILYBUM MARIANUM Beautiful, white-veined leaves make this biennial composite very worthwhile.
SOPHORA TETRAPTERA Fine NZ shrub with beautiful foliage and clustered yellow pea-flowers. Grow on a wall in UK.
TULIPA SPRENCERI Latest of all tulips. Elegant, orange-scarlet flowers. Grow outside in light shade in UK. (20+)
WATSONIA 'STANFORD'S SCARLET' Originating at Bloem Erf Nursery in S Africa with orange-scarlet flowers on 1.5 m.
   stems. Stunning for months this summer here & absolutely hardy in S England. 1989 seed till later. (15+ seeds)
PRICE CODE A :
                 $1.50 ; £1.00 ; DM3, - ; FF10. -
                                                              PRICE CODE D :
                                                                                $4.00
                                                                                        ; £2.50 ; DM 7.50 ; FF25.
                 $2.50 ; £1.50 ; DM4,50 ; FF15. -
                                                                                          £3.50 ;
                                                                                $5.50
                                                                                                     DM10 -
                 $3.50 ; £2.00 ; DM6, - ; FF20. -
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\$7.00

£4.50 ; DM13, -

: FF45. -