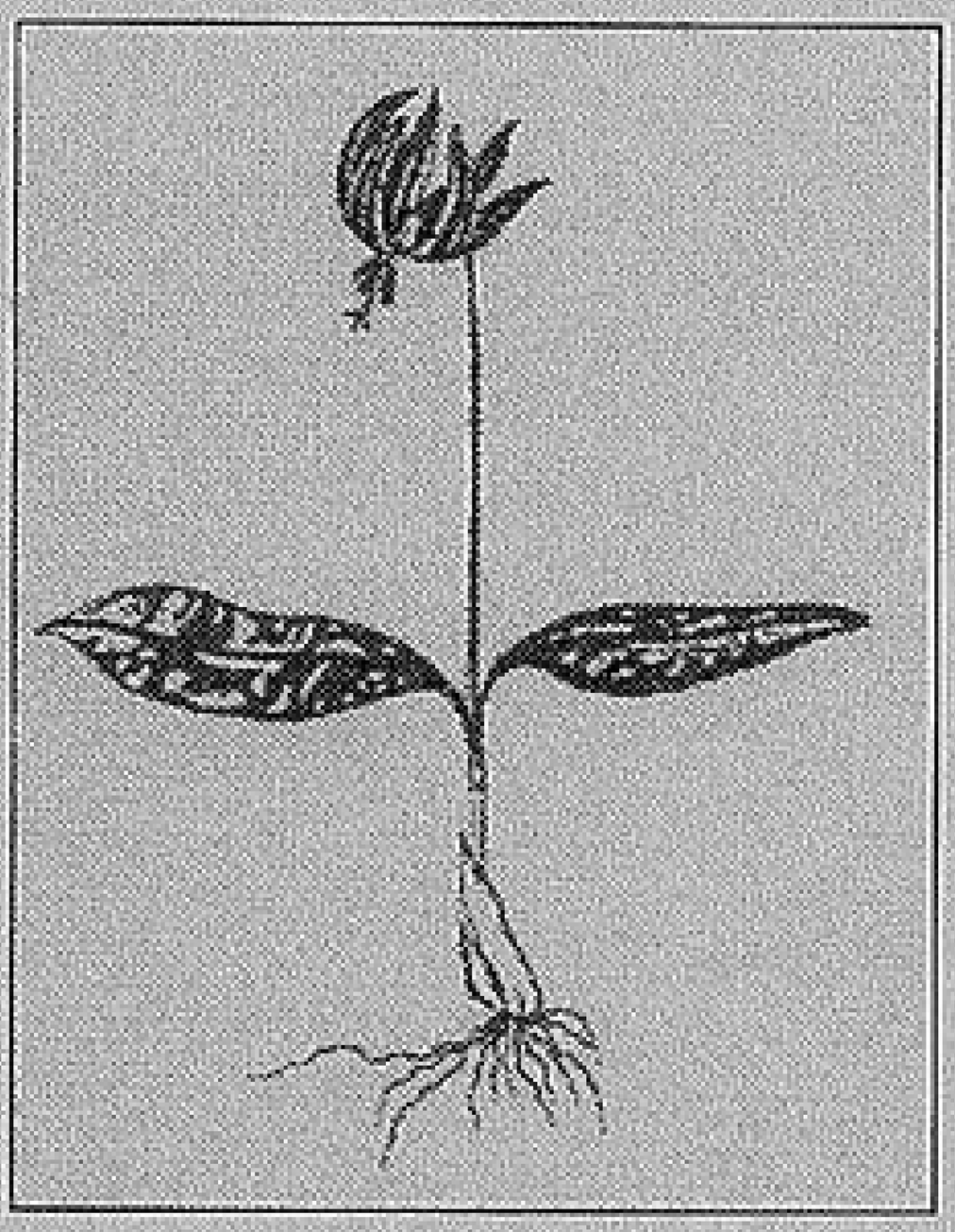
THE BULB

NEWSLETTER



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Welcome to the Bulb Newsletter No.2

It is still early days (hopefully) in the life of the BN, so from the outset it is probably a good idea to outline the terminology which we will, in general, be using to describe the various parts of our bulbous plants. I would like avoid too much botanical jargon so let us go through the various major parts of a bulbous plant and pick out a selection of suitable terms. These can be reviewed later on if they proves unsatisfactory.

Underground, although our loose general term for the whole group of plants is'bulb', we will use *bulb*, *corm*, *tuber* & *rhizome* in their correct botanical sense when describing them, as far as possible; it has to be admitted that the distinctions are not always clear, for example in Rhodohypoxis: is it a corm or a tuber?; maybe some anatomists would like to turn their attentions to it one day.

The *leaves* can be *flat* (=plane), *channelled* (=canaliculate), *cylindrical* (=terete), or *quadrangular*; this refers to the cross-sectional shape; if they are flat on the ground I will try to remember to use *prostrate* or *spreading*, otherwise flat might cause problems! The majority of monocot leaves are more or less parallel-sided and are not narrowed to an obvious stalk; if they are, this is the *petiole* and the expanded part of the leaf is the *lamina*. *Hair* will be used in a general sense to refer to any hair-like protuberance, unless it has some rather obvious feature, so hairy will describe all those states of hairiness such as pilose, villose, lanate etc. On the whole monocots, if they have them at all, have rather uninteresting hairs compared with dicots, which go in for all sorts of lovely ones including some quite complex structures, useful for the taxonomist. So, *hairy* it is, with a qualification as to density and position, eg. leaves with sparsely hairy margins. The *inflorescence* is the whole flowering 'head' of the plant which includes *stem, bracts*, and *flowers*; it may be reduced to a solitary flower (eg some Crocus, Iris etc.) or can consist of several to many arranged in *racemes* or *spikes* (as in Scilla); a spike is just a raceme in which the individual flowers are stalkless, or *sessile*; the individual stalks are *pedicels*; and if two or more of these are joined together into a common stalk this is a *peduncle* (some Polygonatum species have flowers in bunches of two, three or more on a peduncle). There are more complicated branched inflorescences (eg Hemerocallis) but for the moment let us keep to *'inflorescence branched'* and if it is necessary to go into greater detail in order to convey the appearance of a plant more accurately then we can deal with individual cases as they arise. A *bract* is a reduced leaf subtending a flower, often scale-like or thin and papery; there may also be a secondary one, often smaller, referred to as a *bracteole*. A bare stem with no leaves, as in a Hyacinth, is known as a *scape* but I will avoid this

since some bulbous plants only appear to possess scapes; erythroniums, for example, appear to have leafless stems but if you dig one up you will find that the leaves do in fact arise from the stem, but underground, so the stem is leaf-bearing, just as it is in their relatives the tulips, fritillaries and lilies. The six 'petals' or 'tepals' as they are sometimes called, are nowadays most commonly referred to as *perianth segments*; these are often joined together into a *perianth tube*. It is also very common for the six segments to be arranged in two whorls of three, an inner and an outer whorl, sometimes very different from each other (eg. Calochortus, Trillium, Crocus banaticus), Iris). The *stamens* consist of a pollen-bearing *anther* carried on a *filament*. The female part of the flower consists of an *ovary* (which, if fertilized, will develop into the fruit), and a *style* with a *stigma* at or near its tip. The style may be *entire* (ie undivided) or divided into 3 or more *style branches*, each with a stigma. The style branches may be flattened and *petaloid,* as in Iris, Moraea etc. The *fruit* can take various forms, in bulbous plants most commonly a *capsule* which splits lengthways to release the seeds (as in Tulipa, Crocus, Lilium etc.) but it is quite often a fleshy *berry* (Convallaria, Asparagus, Polygonatum etc.) The *seeds* may be provided with a *fleshy appendage*, which is often associated with dispersal by ants, and I think that it will be most convenient to refer to this as a fleshy appendage rather than to become involved in arils, strophioles and raphes.

Some of the readers of BN will find this an unacceptable over-simplification, others a submission to too much jargon; I hope that it is somewhere in the middle, although there is the danger that that approach may not please anyone at all!

Events

Conservation Meeting

The Fauna and Flora Preservation Society is holding a 1-day meeting on April 7th at The Linnean Society, Burlington House, Piccadilly, London, entitled: "Species endangered by trade---a role for horticulture?" Tickets, £10.00 to include lunch and other refreshments, are obtainable from the FFPS, 1 Kensington Gore, London SW7 2AR. The speakers include Prof. G.Ll. Lucas (Chairman), Noel McGough, Nigel Taylor and Tim Upson of the Royal Botanic Gardens, Kew, Dr. Barry Thomas of the National Museum of Wales and Director of the Plants in Trade Programme of FFPS, Dr. Alisdair Morrison and Joyce Stewart, Council Members of the RHS, Mike Read of FFPS and Sarah Oldfield of the World Conservation Monitoring Centre. This is a very topical subject and it will be interesting to hear the views of the various speakers. The

advertisement sheet states: 'There should be no conflict between horticultural trade and conservation.' ---'Legislation designed to protect such species spills over into legitimate trade and causes aggravation to traders.'---'Can horticulture and conservation work together?'

I am sorry that I was unable to include news of this meeting in the last Newsletter but I did not receive details until long after it was despatched.

14th World Orchid Show

This important event in the orchid world is to be held in Glasgow from April 28th to 2nd May at the Scottish Exhibition and Conference Centre, Glasgow. There will be many displays of orchids from all over the world, paintings, scientific stands, sales of orchids, and conservation exhibits. This show accompanies the World Orchid Conference during which some 80 lectures will be presented. Further details may be obtained from the Secretariat, CEP Consultants, 26-28 Albany Street, Edinburgh, EH1 3QH, Scotland.

Bulbs at Harlow Carr

The Harlow Carr Botanical Gardens, Crag Lane, Harrogate, North Yorkshire, England is staging a bulb display from 9-18 April, 10.00-16.00 hrs, in the 'Teaching Greenhouse'.

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Iris narcissiflora spotted at last

Little has been known about this curious Chinese Iris but there has at last been a sighting of it by Mike Hirst during a trekking visit to Sichuan. This is the first time it has been seen by anyone in the West, as far as I can trace, since the original collection in 1922. It was never introduced into cultivation and the dried 'type' specimen is housed in the Herbarium of the Botanical Museum in Uppsala, Sweden. It appears to be a small plant with a slender stolon-like rhizome and a 20-30cm flower stem bearing only 2-3 short leaves about 2mm wide. The bracts ('spathe valves') are dark brown and papery with acute tips. The yellow flower is about 6 cm in diameter and rounded in outline since the falls and standards are roughly equal in shape and size and are rounded at their apices. The falls have a narrow beard (not a crest) about 1-2mm wide in the centre of the falls, and the style branches are very short in relation to the falls & standards, probably only about 1.5 cm long, and the perianth tube is quite short, only 6-7 mm. The recently published 'Iris of China' by James W.Waddick and Prof. Y.T.Zhao places the species in Section

Hexapogon which, in this treatment, includes Section *Pseudoregelia*. They indicate that if the latter section is recognised, then *I narcissiflora* would be better included within it rather than in *Hexapogon*. During 1992 a letter arrived from Mike Hirst of Houghall College, Durham, asking if I could suggest an identity for a yellow Iris photographed on a trekking expedition in western Sichuan and to my delight the colour slide undoubtedly depicted this elusive iris, *I.narcissiflora*! Although living material was not introduced (collection of plants in China is strictly forbidden), this is an interesting development since it is now possible to confirm that this is a very distinct Iris in its general appearance. It has one relatively large bright yellow flower at the top of a short, slender, rather bare stem, the bracts are dark brown, and the flower is flattish, the standards spreading horizontally like the falls, and both falls and standards have their tips reflexed and curled under somewhat. It was growing in the Yulong-shi valley, south-west of Kangting at an altitude of about 14000 ft in a boggy patch at the bottom of a grassy mountain slope. Although not introduced on this occasion I am hopeful that the species has been introduced as seeds by one of the many parties which now visit Sichuan each year. Certainly one of the packets I have received contained seeds which I could not equate with any other species of Chinese Iris so I must now await with baited camera for them to develop!

A reassessment of some American Sisyrinchium relatives

There has been a considerable amount of shuffling of some of the irids which are related to *Sisyrinchium*, especially those with cylindrical 'rush-like' leaves. Using morphological data (ie external structure) combined with leaf anatomy and cytology, Dr Peter Goldblatt & Dr James Henrich (both of Missouri Botanical Garden) and Dr Paula Rudall (R.B.G.Kew) have published a reassessment of the relationships in this group [The Genera of the Sisyrinchium Alliance: Systematic Botany 15,3:497-510(1990)]. As a result of these deliberations, the genus *Olsynium* (published in 1837 by Rafinesque) is resurrected to house the very well-known *Sisyrinchium douglasii*, thus this becomes *Olsynium douglasii*. Several genera are merged into *Olsynium*, accounting for some more name changes, although most of the species involved are not familiar garden plants. Those genera which are 'sunk' are *Phaiophleps* (another Rafinesque name), *Symphyostemon* (Klatt described this in 1861), *Chamelum* (Philippi 1864) and *Ona* (Ravenna 1972). In addition, two of the sections of *Sisyrinchium* are also merged with *Olsynium*: section *Nuno* (containing *S.nuno*, or *S.scorpoidea* as it should be known), and section *Eriphelima* (containing the popular *S.filifolium*). The outcome is that 12 of these 'rush-leaved Sisyrinchiums' are listed in the genus *Olsynium*, but with the comment that 'the taxonomy of the group is

incompletely known and some species of the genus (ie. *Olsynium*) may have been inadvertently omitted'. The 12 species mentioned are as follows, and I have also added some other synonyms which may, or may not, help to clarify matters!

a) *O.douglasii* [syn. O.grandiflorum, O.inflatum, Sisyrinchium douglasii, S.grandiflorum, S.inflatum] b) *O.acaulis* [Sisyrinchium acaulis] c) *O.biflorum* [syn. Gladiolus biflorus, Solenomelus biflorus, Symphyostemon biflorus, Sisyrinchium narcissoides, Galaxia narcissoides, Psithyrisma narcissoides, Symphyostemon narcissoides, Sisyrinchium odoratissimum, Phaiophleps odoratissimum] d) *O.lyckholmii* [Symphyostemon lyckholmii]* e) *O.bodenbenderi* [Chamelum bodenbenderi, C.rubellum] f) *O.frigidum* [Sisyrinchium frigidum] g) *O.luteum* [Chamelum luteum] h) *O.filifolium* [Sisyrinchium filifolium]** i) *O.junceum* [Sisyrinchium junceum] j) *O.philippii* [Sisyrinchium philippii] k) *O.scirpoideum* [Sisyrinchium scirpoideum] l) *O.obscura* [Galaxia obscura, Ona obscura]

* Prof.D.M.Moore regards this as a subspecies of *O.biflorum* (which he refers to in the genus *Phaiophleps*) [see Journ. Linnean Soc. Bot. 84:103(1982)]. He distinguishes the two subspecies on their leaf anatomy, and on the following more easily observed features:

subsp. *biflorum*:- flowers white or cream with dark veins; tube funnel-shaped; the longest pedicels generally at least 3 cm; usually growing below 1000m.

subsp. *lyckholmii*:- flowers reddish or purplish to yellowish-orange; tube cylindrical; the longest pedicels generally not more than 2.9cm; generally found above 1000m. I remember seeing the latter at Jack Drake's nursery in the 1960s, a lovely orange/terra-cotta coloured form, but I did not have great success in growing it, whereas *O.biflorum* (I must change the label, it still has *Sis.odoratissimum* on it!) is an easily accommodated plant in the peat garden.

** This lovely white-flowered species, which is very familiar to 'alpine' enthusiasts, is treated as a subspecies of *junceum* by Prof. P.F.Ravenna.

It is worth noting that the genera *Solenomelus* (2 species) and *Tapeinia* (1 species) are still recognised by the authors, as are the rather different *Orthrosanthus* and *Libertia*, and of course the rest of the 'ordinary' *Sisyrinchium* species.

I must work out where the curious *Solenomelus sisyrinchium* belongs. I recently saw a good big clump of it in the rock garden at the RBG Edinburgh; maybe it is a Solenomelus!

For GARLIC-lovers, everywhere, and any other Alliums!

Essential reading for allithusiasts is Mark Mcdonough's newsletter G.A.R.L.I.C. This expands to 'Growing Alliums and Related Liliaceae In Cultivation' for those who have an aversion to acronyms. Vol 1 (4 parts) is now complete and the latest part includes a lot of interesting details, including an extensive article on *A.togashii* and its variants, a species rarely seen in cultivation. Prof. W.T. Stearn estimates the genus to contain about 750 species, or so I believe, and in view of the fact that many of these are extremely variable it is as well that Mark is fairly young, for his newsletter will surely never be short of material! GARLIC is obtainable from him at 30 Mt.Lebanon St., Pepperell, MA 01463, USA. Price $20.00 (in U.S. cash, or equivalent of $23 in other currencies) per year for 4 issues plus seed exchange participation. Cheques (syn. checks), other than U.S., not acceptable. Nice colour illustrations as well, incidentally.

Bulbs on stamps (as opposed to stamps on bulbs, which is what the Post Office sometimes does!).

The Newsletter will not keep an accurate log of all the new stamps which depict bulbs but will note their existence as and when they are spotted. There is a very fine Lys de Mer, *Pancratium maritimum*, on a large 2 Fr. stamp from France, and Japan has depicted *Fritillaria camtschatcensis* (60), *Lilium longiflorum* (20) and *L.auratum* (62) fairly recently. Britain has a nice new set of 5 orchid stamps depicting *Dendrobium hellwingianum* (18), *Paphiopedilum maudiae* (24), *Cymbidium lowianum* (28), *Vanda rothschildiana* (33) and *Dendrobium vexillarius* var. *albiviride* (39). Alright, they are not bulbous, but they <u>are</u> petaloid monocots! Nicely timed for the Orchid Conference.

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Australian Crocus collection

A friend of long-standing, Otto Fauser of Olinda, Australia, has written to tell me that he is the holder of the national collection of Crocus species for OPCA, the Ornamental Plant Collections Association, which is comparable with the British NCCPG (National Council for Conservation of Plants and Gardens). However, apart from Crocus, Otto's interest in the smaller bulbs is very wide-ranging and he is a well-known and integral part of the informal exchange which exists between bulb enthusiasts around the world, as well as being, I understand, a professional pastry-cook par excellence. It sounds as if the Crocus collection is worth a visit, just about tea-time!

The Crocus Group

This was mentioned in the BN No.1 and Arthur Coughlan of Wakefield has written to ask how to get in touch with this specialised group. Several others have enquired, so I will provide the necessary details here. The Group is an offset (or should it be a stolon?) of the Species Group of The British Iris Society. Their activities include a Bulletin, annual lecture and auction of crocus corms, a seed exchange and spring and autumn visits to crocus collections around the country. Currently there is no subscription but there is a £5 joining fee. Anyone interested in joining can do so by writing to Primrose Warburg, South Hayes, Yarnells Hill, Oxford OX2 9BG, U.K.

Inexcusable confusion in 'autumn crocuses'

It is most unfortunate that colchicums have been loosely called autumn crocuses and, for that matter, meadow saffron. Bulb enthusiasts will know that they are not related to Crocus, neither have they anything to do with saffron, which is obtained from *Crocus sativus*. In fact confusion between the two could have its dangers since crocuses are edible (in an emergency!) whereas colchicums are poisonous. Mistakes on colourful bulb packs abound and each year I see *Crocus speciosus* in packets with a nice photo of *Colchicum speciosum* on the outside. Counting the stamens is all that is needed, 3 in *Crocus* and 6 in *Colchicum,* not that there is much similarity anyway in the overall appearance of the corm, flowers, leaves or anything else! The most recent mistake I have noted is in an interesting article, Medicinal Plants by Dr.Jonathon Phillips (University of Wolverhampton) in The Biologist 39,5:187-191(1992). An instantly recognisable photo of *Crocus speciosus* is captioned *Colchicum autumnale*! I doubt, however, that Dr.Phillips was to blame; it is quite common practice for photos and captions to be added to articles by non-specialist editorial staff, frequently taken from slide libraries, and used without consulting the author. The possibilities for mistakes to occur are plentiful, from the photographer, who is at the mercy of misidentifications on labels, through all the stages of production to the finished article. Hopefully, in cases such as this, it is only the photo which is incorrect, not the identity of the plant upon which the research was based!

Medicinal Uses----

The above-mentioned paper by Dr.Phillips includes some items of

monocot interest: 'Of particular interest are the steroidal saponins found in *Dioscorea villosa* [Dioscoreaceae], the Mexican wild yam, originally used in the biosynthesis of steroid hormones during the development of oral contraceptive agents--'.

Lily-of-the Valley and Garlic are also mentioned: 'A wide range of plants affect the cardiovascular system, in particular those which contain cardioactive glycosides, such as species of Digitalis, *Convallaria* and Crataegus. Two other plants, *Allium sativum* (garlic) and Ginkgo biloba (maidenhair tree) are of particular interest-----. A number of studies have confirmed the---beneficial effects on atherosclerosis of long term ingestion of garlic extracts'.

Bulb enthusiasts in the Pacific Northwest

Molly Grothaus of Lake Oswego, Oregon has written to let us know that bulbitis is booming in the northwestern United States. She says that 'Two years ago a small group from the Columbia-Willamette Chapter of the American Rock Garden Society started a bulb group. We get together about four times a year and exchange seeds or extra bulbs, tour gardens and nurseries, and send a joint order for bulbs to an English nursery. We are based in Portland, Oregon. A year after our group got underway, the Northwest Chapter of the ARGS also started a Bulb Group.' Thank you for letting us know, Molly, I am sure that enthusiasts around the world will join us in sending both groups every success and enjoyment, and perhaps a few spare seeds as well?

Jane McGary from Estacada, has also given details of the Oregon Bulb Study Group and says that western Oregon is a superb area for growing the hardier bulbs because of their dry summers; she expresses the hope that in a few years they will have a local rare bulb nursery 'up to the standard of local alpine growing'.

Sorting out Mother-in-Law's tongue

Sansevierias are a bit of a problem, botanically speaking, and those with an interest in them will be pleased to hear that their classification is currently under scrutiny by the Kenyan Ph.D. student at Reading University, Paul Mbugua. Paul has recently spent several months back in Kenya carrying out field work which is so essential to the understanding of this tricky group. One problem is that juvenile plants sometimes have quite different leaves from the adult plants, and the ultimate habit of growth, often not visible in cultivated plants, is also of importance. Coupled with these drawbacks is the fact that their very thick fleshy leaves do not press well so that dried herbarium specimens are not

always very helpful. In a recent letter he says that he has visited most of the key areas of *Sansevieria* interest in Kenya but still has some sites around Mt.Kenya, and some of the lowland areas, to visit. Mothers-in-Law do come in for a lot of stick around the world. I well remember many years ago being told by a Turkana tribesman in northern Kenya that the full moon was known as a Mother-in-Law moon: large, and looming on the horizon!

Extracts from letters to the BN---

From Ted Petts of Carshalton, a plea: 'It is all very well for BM not wishing to encroach on the territory of other newsletters. He subscribes to them all! [not strictly true-BM!]. Bulbitis affects people in different ways. Some are severely affected; others are milder cases and these may be widely interested in all bulbs generally but lack the desire, time or cash to specialise in any one field and they may miss out if information is only to appear in specialist newsletters. In others the affliction may affect mainly the lily part of the brain or perhaps the cyclamen part of the brain. They may subscribe to one or more specialist newsletters but still wish to keep abreast with news in the wider field as well. If material is to be fed to the appropriate specialist group, could it be repeated in The Bulb Newsletter? Perhaps the entry in 'our' newsletter could be in more general terms. For my part I shall not complain if I read an identical report in two newsletters. It will double the chance of the information penetrating to a retentive part of the brain.' Thank you Ted, a good idea which I have already adopted. The above item on *Iris narcissiflora* has gone to the British Iris Soc. and American Iris Soc. in slightly more detail so will reach the specialists as well as us broader-minded types!

From Yvonne Matthews, Cornwall, 'Does the Newsletter cover *Oxalis*?'. Well, yes, it will have items on the tuberous/rhizomatous species since they do attract the interest of bulb growers and are sold by some of the bulb nurseries. I love them, except for one appallingly pestiferous species in our garden; its bulbils get everywhere and defy erradication; *O.corymbosa*, I believe. It does get infected by a rust fungus in late summer which makes it look very unhappy but I doubt that this is effective enough to control it.

My mention of Australian monocots in BN1 prompted Jeff Irons of Heswall, Wirral, to comment on the hardiness of *Anigozanthos flavidus*. He says: 'I believe that your estimate of a 5 deg.C minimum is un-necessarily high. I have reports of plants surviving air minima of -10 deg.C and soil frozen to a slight depth.' I am pleased to hear this and will try again when I can acquire one, since I love their bizarre hairy flowers.

Letters contd.

With reference to the final item in BN1 on rose blackspot, John Rogers of Mill Hill comments: 'I understand that onions contain a high sulphur content; in the days of the London smogs, when the air was redolent with sulphur dioxide and sulphur-laden soot, there was no blackspot-so maybe there is something in the idea of under-planting roses with alliums'.

Other readers may have had trouble in getting *Lycoris* species to flower; I certainly have and I think that it is quite a well-known problem, at least in Britain. John Rogers (Mill Hill) has written to say that the only time he had success with *L.aurea* was when he inadvertently left the pot outside one winter, sopping wet and then frozen solid for a fortnight. Apparently the bulb flowered the following year, so the rough treatment might be worth a try. Maybe someone can suggest what treatment to give my one bulb of the gorgeous Peruvian yellow *Paramongaia weberbaueri*, its parent bulb at Kew has flowered about once in the c.25 years I have known it, and my offset looks no more disposed towards flowering either.

The International Bulb Society (IBS)

Charlie Challenger, the well-known bulb and alpine nurseryman of Canterbury, New Zealand, has asked me about this Society, and the 'Fourth International Symposium on Bulbous and Cormous Plants'. I will give an outline of the Society and its activities, although I do not know the very latest details. Taking the Symposium first, this was scheduled to take place in May 1992 in The Netherlands but the IBS had to cancel it because of the recession and lack of sufficient sponsorship. The IBS has grown out of The American Plant Life Society which itself started life in 1933, under the leadership of Hamilton P.Traub, as The American Amaryllis Society. The journals which these societies have produced since 1933 are the Amaryllis Year Book, Plant Life and Herbertia and currently the IBS produces the one journal Herbertia which now publishes papers on any 'bulbous' plants (geophytes), not just the *Amaryllidaceæ*. The most recent volume which I have seen is 47, an issue devoted to *Hippeastrum* (& its relatives), and this is full of fascinating articles on the subjects of cultivation, breeding, propagation, cytology, classification and ecology [see further comments on these below, under South American Amaryllids]. The address of the editorial and subscription office is International Bulb Society, P.O. Box 4928, Culver City, California 90230-4928, USA, and the annual sub. is in the region of $30 US, but it would be as well to check first with the IBS office before sending.

Sternbergia notes

This small genus attracts a great deal of attention at present, so I have various pieces of news to pass on. Firstly, a 'new' species from Greece: A few people are now cultivating a recently-described species, *Sternbergia greuteriana*, some of them possibly without knowing it, under the name of *S.sicula*. In a study of the genus in the South Aegean Islands, Georgia Kamari and Rea Artelari [in Willdeowia 19:367-388(1990)] have distinguished 3 species, the well-known *S.lutea*, the smaller narrower-leaved *S.sicula*, and the even smaller newly recognised *S.greuteriana*, named after Dr Werner Greuter who has done so much work on the Greek flora and of Crete in particular. The three species are defined on the basis of leaf colour and width, and on size and shape of the perianth segments, as follows:

S.lutea has flat (in cross-section) bright glossy green leaves 0.7-1.5cm wide, and blunt-tipped perianth segments 3.5-6cm long x 1-2.3cm wide.

S.greuteriana also has flat bright glossy green leaves, but only 0.2-0.5 (rarely to 0.6)cm wide, and the blunt perianth segments are only 1.2-3cm long x 0.2-0.8cm wide.

S.sicula differs from both of these in having dark green leaves with a glaucous central stripe, and they are channelled in cross-section; the perianth segments are acute at the apex. It is an extremely variable plant and the perianth segment size is not so useful in distinguishing it from the other two since there is considerable overlap in measurements.

S.greuteriana is shown as being a relatively frequently-occurring plant in eastern Crete and also on the islands of Karpathos, Kasos and Saria; small sternbergias on Crete have previously been referred to as *S.sicula*, which does also occur on the island, scattered throughout. *S.lutea* is, of course, widespread (and very variable) in the Mediterranean and is also to be found on Crete; in fact Chris Brickell and I saw it in mixed populations with *S.sicula* in 1983 (B&M 10091). The authors of the paper have also identified some of the herbarium specimens collected by us as representing mixed populations of *S.greuteriana* & *S.sicula*, for example B&M 10129 & 10156. Other B&M collections 'lumped' by us into *S.sicula* and now regarded as *S.greuteriana* are B&M 10147, 10181, & 10240, whereas 10252 is confirmed as *S.sicula*. Some of these may be in cultivation since a few bulbs of each were collected at the time. A bulb given to me many years ago by Richard Gorer from Crete is apparently also *S.greuteriana* and more recently living material has been introduced to Bonn Botanical Garden from Karpathos by Manfred Koenen and from Crete by Kew botanist Gwilym Lewis.

Stembergia pulchella

In The Garden, January 1993, I wrote up this poorly known yellow-flowered autumnal species which, as far as I could tell, had never been introduced into cultivation, in spite of having been given its botanical name and description in 1854; then in 1986 3 bulbs were introduced from Syria by Peter Boyce of the RBG Kew. Since then (in autumn 1992) Erna & Ronald Frank of Warlingham, Surrey, travelling with Manfred Koenen of Bonn Bot.Garden, have also found it in Syria so that it is now not quite such an unknown as it was a few years ago. As sternbergias go, it must be rated as one of the less attractive since its flowers have perianth segments less than 2cm long. It is, in fact, rather similar to the widespread *S.colchiciflora* but has leaves appearing at the same time as or before the flowers, whereas the latter stays leafless until some time after the flowers have finished. There are other differences, for example the leaves of *S.pulchella* are prominently keeled on the underside and channelled on top (flattish in *S.colchiciflora*) and the flowers have a perianth tube 1.5-2cm long (1.8-2.7cm in *S.colchiciflora*) and segments 1.5-1.8cm long (2.3-3.3cm in *S.colchiciflora*). *S.pulchella* appears to be reasonably easily cultivated in a bulb frame or alpine house, although its hardiness is, as yet, not known.

Stembergia notes from Tasmania

In 1984 Peter Milne of Rosetta, Tasmania, crossed the autumn-flowering *S.lutea* with the spring-flowering *S.fischeriana* (see note below), of which he saved pollen from the previous spring, and obtained seeds which have germinated sporadically over the years, including 1992. Peter says that the two bulbs which have reached flowering size flowered somewhat later than 'normal' *S.lutea* and have flowers which are smaller and initially noticeably greenish. The bulbs retain their leaves later in the season, probably as a result of coming up later. He did send me some of the seeds but I have to confess that I have not yet induced the resulting bulbs to flower, even after 8 years of growth; we gardeners live in eternal hope; last year I flowered *Erythronium idahoense*, the seeds of which were sown in 1976!

[Note: In 1989 Richard Gorer & John Harvey published a detailed paper (The Plantsman 10,4:200-204) investigating Philip Miller's *Amaryllis vernalis*, described in the 1768 edition of his Gardeners Dictionary. They came to the conclusion that this represents the same plant as that which we know today as Sternbergia fischeriana, a name published much later (as Oporanthus fischerianus) by William Herbert. In view of this, the spring-flowering sternbergia should apparently be referred to as *S.vernalis*.]

CITES

While on the subject of wild-collected bulbs, it should be noted that the genus *Sternbergia* is now included in Appendix II of the Convention on International Trade in Endangered Species of wild Flora and Fauna ("CITES"). This is an enormous subject, and the CITES regulations are extensive but, very briefly, App.II plants are those which 'although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival'. Other related species, although they may give no cause for concern at all, are sometimes included because they resemble, and might be confused with, species which are in need of control. This reasoning is what lies behind the fact that the whole genus *Sternbergia* has been placed on Appendix II, even though some of the species are fairly common; the situation is similar for *Galanthus* and *Cyclamen*, both subject to App.II controls.

The Convention operates by means of a permit system. It prohibits international trade in specimens of species included in any of the appendices without the prior grant of a CITES permit. It requires each Party to establish Management Authorities and Scientific Authorities which, between them, are responsible for the implementation of the CITES regulations and for granting permits. The last time I saw an update 112 States had become parties to CITES; in addition to the national Authorities, there is a Secretariat in Switzerland whose function is to oversee the whole system on an international basis.

CITES prohibits the export of specimens of APP.II species without a permit, and prohibits their import unless they are accompanied by a valid export permit (or re-export certificate). An import permit is also required in the case of the European Community countries, thus each consignment requires both documents. International trade of Appendix II species may be carried on quite legally, provided that the State of export has been advised by its Scientific Authority that the export of specimens will not be detrimental to the survival of the species [these are not my translations, most of the above statements are almost straight extracts from CITES--BM]. In short, then, trade in App.II species is allowed in both wild and artificially propagated specimens, subject to permits being issued. The main 'bulbous' plants which concern us as bulb enthusiasts are *Galanthus*, *Cyclamen* and *Sternbergia*, seeds of these are excluded from the controls. The CITES regulations are, of course, in addition to any local laws which may apply to specific plants; as an example, I have seen lists in hotels in Central Asia giving the fines relating to the collection/picking of tulips and Juno irises as well as other wild plants. CITES is also quite independent of the plant health regulations which

are in force in many countries.

In Britain the CITES Management Authority is the Dept. of the Environment, Wildlife Trade Licensing Branch, Tollgate House, Bristol. I apologise for not knowing the details for each of the many countries represented by our Newsletter subscribers.

South American Amaryllids

The recent volume of Herbertia, no.47, mentioned above on page 10, is a particularly interesting one for those devotees of the genus *Hippeastrum* (no, they are not all colossal and come in square boxes labelled Amaryllis at Christmas!--sorry, that is rather patronising of me, I am sure that you all know better than that!). There are two articles on the Argentinian species, one by Silvia Arroyo-Leuenberger & Beat Leuenberger entitled 'Notes on *Rhodophiala rhodolirion* from the Andes of Mendoza, Argentina', and one by J.A.(Alberto) Castillo. The first of these is very valuable to me at present since I have just received some bulbs from Juan P.(Patrick) O'Farrell; he says that it should be reliably hardy since it is a summer-grower and gets very cold snowy winters, needing 'poor well-drained soil, a short growing season and lots of cold and snow'. The article backs this up by quoting winter temperatures of -3 to -26 deg.C with varying snow cover from 'very little' to 200cm on the valley floors. At flowering time, tables show mid-day air temperatures of low to mid 20s deg.C and soil temperatures, at bulb depth, ranging from 15 to 28 deg.C on sun-facing slopes (ie north in the southern hemisphere!), the variation depending upon time of day. The soil at the surface can be as much as 64 deg.C in the early afternoon and as little as 7 deg.in the early morning! This is a most elegant species with solitary (occ.2) funnel-shaped flowers in shades of pale pink to deep red with the tips of the perianth segments gracefully recurved. In the wild the plants are more or less leafless at flowering time, these appearing later. The nomenclatural history of the species is highly confused and it is useful to have a blow-by-blow account of this, which involves the distinct species Rhodophiala andina (which has 4-6 flowers per stem). I will not attempt to relay this history, but the resulting synonymy might usefully be passed on: *Rhodophiala rhodolirion* (ie.'rosy-lily') [syn. Rhodolirion andinum (NB not Rhodophiala andina), Hippeastrum rhodolirion, Amaryllis rhodolirion, Rhodolirion montanum]. The other species which is unravelled is the distinct *Rhodophiala andina* [syn. Hippeastrum andinum, H.herbertianum, Phycella herbertiana].

The article by Alberto Castillo, '*Hippeastrum* in the wild in Argentina' is equally interesting, with details of their habitats, climatic conditions and cultivation requirements. The species described are: *H.aviflorum*,

H.iguazuanum, *H.teyucuarensis* (these three are very similar to each other, with irregular-shaped flowers, veined reddish on a green ground colour), *H.arboricolum* (an epiphytic species perhaps now extinct or exceedingly rare), *H.angustifolium* (a water-loving sp. with big red flowers like a *Sprekelia*), *H.petiolatum* (broad leaves narrowed to a stalk), *H.parodii* (yellow-flowered), *H.ambiguum* (long, scented trumpets, white with red stripes), *H.argentinum* (long white fragrant trumpets with undulate segments) [syn. Amaryllis candida, A.tucumana, A.immaculata], *H.aglaiae* (another yellow-flowered species) and *H.cybister* (tall with irregular red, green-centred flowers), as well as some mystery plants H."albostriatum", H."Red Cochuna" and H."Mrs.Sosa".

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Mention must also be made of a short article by Donald Rix of Queensland, Australia, on the amazing 'blue amaryllis', *Worsleya rayneri* (Hippeastrum procerum, Amaryllis procera) from Brazil. Mr Rix says that a mature bulb can be 4ft tall and 8ins in diameter, so the seeds sent to me by Terry Hatch from New Zealand last year have got a long way to go! The cultivation recommended is a very fibrous mix with layers of rock chips so that water drains out immediately.

A valuable source of reference

The latest Alpine Garden Society's Bulletin (March 1993) is, as usual, full of interest and gorgeous photographs (and by the way, thank you very much for the mention of the BN in the Editorial!) including some items of particular interest to bulb lovers. Many of the BN subscribers are AGS members so will be able to enjoy it firsthand, but I must mention a useful account of the *Fritillaria* species on the Greek island of Samos by Brian & Eileen Anderson. The dwarf yellow to greenish *F.bithynica* and *F.carica* are well documented by them, and other monocots mentioned include *Muscari macrocarpum*, *Dactylorhiza romana*, *Orchis tridentata*, and *Iris ?attica* or *suaveolens*. These accounts of plants seen in the wild are a very valuable source of reference and the AGS is especially good at them; travellers nowadays have the benefit of some 60 years of Bulletins to refer to. In the current volume there is also a detailed account of orchid hunting in south-eastern Turkey by Phillip Cribb, Assistant Keeper in the Kew Herbarium in charge of monocots, and known worldwide as an orchid specialist. 30 species in two weeks is not bad, even by orchid standards. Phil has picked out three which were outstanding, *Cephalanthera kurdica*, *Ophrys cilicica* and the curious *Comperia comperiana*. The first of these I have seen in the western Cilician Taurus forming huge clumps, 10-20 spikes of the lovely soft pink

flowers in a bunch but orchids in Turkey are, in my experience, never to be found quite as thick on the ground as they can be in Greece and other parts of the Mediterranean. The AGS can be contacted at Avon Bank, Pershore, Worcestershire, WR10 3JP, UK.

Frits in Edinburgh

Mention of fritillaries recalls a recent visit to Edinburgh Botanic Garden where the extremely rare and lovely dwarf yellow *F. imperialis* var. *chitralensis* was to be seen thriving in the alpine house. This, I am quite certain, should be treated as a distinct species within the imperialis group (ie. section *Petilium*). It is as distinct from *F.imperialis* as are *F.raddeana* and *F.eduardii*. *F.chitralensis* is a much smaller plant in all its parts, no higher than about 20cm with usually one or two, but rarely up to four, of its lemony yellow flowers per stem, and it does not have the foxy smell of *F.imperialis*. It is a native of eastern Afghanistan and Kashmir and I believe that all the plants in cultivation (at least in Britain) originate from a collection made over 20 years ago by a former Ambassador in Kabul, Mr J.Carter and his wife. This alone would have made the visit worthwhile (although it can sometimes also be seen at Kew where Tony Hall grows it very well), but Ron McBeath and his staff were clearly out to impress and the gorgeous but tricky Turkish *F.alburyana* was also just about at its best. This looks marvellous around the snow patches in its mountain home but I find that in cultivation it tries to open its flowers as they push through the ground and the whole thing looks pathetic; a proper winter and a proper spring are the answer and the cooler northern climate clearly suits it better. Or, maybe it is pure skill on the part of the Edinburgh Alpine Dept team!

Fritillaria kittaniae

Fitting in nicely with the Edinburgh/Fritillaria connection is this fairly recently described species from Turkey. Although already 5 years old, the publication of this new species [Herbertia 43,2:33-41(1987)] seems to have gone largely un-noticed by the majority of Frit. enthusiasts so it is appropriate to draw attention to it here. It is *F.kittaniae*, named after Dr.Kit Tan of the RBG Edinburgh, formerly co-editor of the Flora of Turkey under Dr.Peter Davis (after whom *F.davisii* is named) and now a researcher on the Flora Hellenica project. This is a south-western Turkish species described by Dr.F.Sorger, based on herbarium material collected by Kit Tan & F.Sorger in the Taurus Mts of Antalya province, where it grew in limestone rocks in the cedar forests at about 1500m. *F.kittaniae* is described as being a small plant, 6-11cm tall with 4-5 alternate grey-green leaves, the lowest 2-4cm long and 0.3-1cm wide.

The small nodding bells, about 1.5-1.8cm long, are pale purple outside with yellow-green central bands, and the three inner segments are clear yellow with yellowish-green central bands; the nectaries are small and elliptical and the style is 3-lobed and minutely hairy (papillose). Although *F.kittaniae* is compared with *F.acmopetala* subsp. *wendelboi* ('a much taller plant with larger greenish-brown flowers, the inner segments of which are recurved and apiculate, the style longer, slender and non-papillose, the nectaries ovate-lanceolate and blackish') it seems to me that it would have been much more useful to make a comparison with the very widespread and variable *F.pinardii* which it appears to resemble much more closely; in fact if an attempt is made to 'key out' this plant using Martyn Rix's key in the Flora of Turkey one arrives at *F.pinardii*. This of course does not necessarily mean that it is the same, since material from this site may not have been available for consideration when the Flora was written. I have seen and photographed fritillaries in this locality but had passed them over as variants of *F.pinardii*, clearly a closer inspection is required.

Another new Chinese Fritillaria

One of the latest additions to the many Frits which have been described from China recently is *F.guizhouensis* [ref: Yang Yong-kan, He Shun-zhi & Wu Jia-kun in Bull. Bot. Res. North-East. Forest Univ. 12(3):263-265(1992)]. This is 20-70cm in height with 7-9 leaves, the lower ones opposite, the rest whorled or alternate, 1.6-2.4cm wide with the apex long-acuminate but not tendril-like. The flower is solitary, nodding, pale pinkish-purple and slightly tesselated with two bracts overtopping it, and it is widely bell-shaped, 4.3-4.6cm long, the outer segments blunt and with 9-11 nerves,d the inner blunt to rounded, with 11-13 nerves. The style is deeply 3-lobed and the capsule develops wavy wings at its corners. It is described as occurring on calcareous rock formations at 1500-1600m at Songtao in Guizhou Province, flowering in April. The author compares it with *F.hupehensis* from which it differs in having no tendrils at its leaf tips, only slightly tesselated flowers and stamens with hairless (not papillose) filaments. Unfortunately *F.hupehensis* and the new species are, as far as I can tell, not in cultivation so it is difficult to make comparisons; however, *F.hupehensis* appears to be a tallish (50cm) plant with whorls of leaves with tendril-like tips and 4-4.5cm long, strongly tesselated, bells. I presume them to be related to *F.cirrhosa*.

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In another paper on Chinese Fritillaria [Yu Shi-chun & Xiao Pei-gen in Acta Phytotax. Sinica 30(3)277-288(1992)] two species are given a lower

taxonomic rank or status. *F.sulcisquamosa* is reduced to a variety of *F.unibracteata* (it is said to be slightly different in pollen morpholgy and lacks tesselation on the inside of the perianth segments) and *F.puqiensis* is reduced to a variety of *F.thunbergii*, which is one we have heared of! Very little is said about it, only that it has slight differences and has a different distribution from *F.thunbergii*.

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In view of the number of new names in Fritillaria coming out of China I will in a future BN attempt to list them with short descriptions, but you will have to bear in mind that I am taking the information from written descriptions, not from observations of living plants; I wish that I could but hardly any of them have been introduced to cultivation outside China.

Greek Frits

There is a useful paper on the species of *Fritillaria* which occur in Greece [in Botanika Chronica 10(1991)] by Georgia Kamari. In short, she recognises 21 species in Greece, 13 of which are endemic (in botanical usage this means confined to Greece, slightly different, I believe, from the medical use of the term). These 21 are placed in 5 groups: **Graeca Group:** *graeca, mutabilis, thessala.* **Obliqua Group:** *davisii, rhodokanakis, spetsiotica, obliqua* (& subsp.*tuntasia*), *ehrhartii* (& var.*prasinantha*), *sporadum.* **Conica Group:** *drenovskii, euboica, conica, rhodia, bithynica, carica*, & *rixii* would belong here if it was recognised as being distinct. **Messanensis Group:** *elwesii, messanensis, pontica, gussichae.* **Montana Group:** *epirotica, montana.*

Some of these names may be unfamiliar so I will give further details in future.

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Flora of Bhutan monocots: not too long to wait?

The Sino-Himalayan Plant Association, in its Newsletter No.5 of July 1992, reminds its members that the important Flora of Bhutan project is progressing, in the right direction from our point of view, towards the monocots. The accounts of the dicots are nearly finished, in vols.1 & 2, and the monocots, to be published in 2 parts in vol.3, are scheduled for completion in 1994. In addition to the plants of Bhutan, records for Sikkim are also given. This Flora is being prepared in Edinburgh and any enquiries should be addressed to the Royal Botanic Gardens, Edinburgh, EH3 5LR, Scotland.

The above Association's newsletter does, of course, contain information about Himalayan and Chinese monocots from time to time and the above number has an article on the fascinating arisaemas in which a book on the subject is mentioned: Himalayan Cobra Lilies, their Botany and Culture, by Udai C.Pradhan, published by Primulaceae Books, Kalimpong, India. Anyone requiring further details of the Sino-Himalayan Plant Association can contact the secretary, Chris Chadwell, at 81 Parlaunt Road, Slough, Berkshire, SL3 8BE, England.

Catalogues

Kath Dryden's 'Manavlins' list for Spring 1993 arrived quite a while ago and has, as usual, some interesting items, as well as mentioning the Bulb Newsletter (thank you, Kath!). The seldom offered '*Sisyrinchium odoratissimum*' is there (see above), now regarded as *Olsynium biflorum*, with a plea: why has it had a name change? In this case taxonomic opinion is that it is not a *Sisyrinchium*, so it is removed from that genus into one (*Olsynium*) which was described a long time ago; the *odoratissimum* changes to *biflorum* because of priority of date, following the rules of the Int. Code of Nomenclature. I presume that the original specimen, upon which the epithet *biflorum* was based, had only two flowers on the stem, although as Kath points out, it usually has several flowers. A pity, '*odoratissimum*' is far more appropriate for this elegant and fragrant plant. Also to be found is the attractive *Ophiopogon bodinieri*, introduced by Chris Brickell and Alan Leslie from China a few years ago with rather larger pinker flowers than most of its kin. Other treasures include the tiny Himalayan lilies *L.nanum* and *L.nanum* var *flavidum*. Surely these two should be treated as distinct species? In Sikkim in 1985 we saw both in the same general area, but never growing together and no intermediates, so it seems unlikely that they are just variants of the same thing. It is good to see *Rhodohypoxis* increasingly offered in a wider range than just the *R.baurii* forms; *R.milloides* is much hardier, and the hybrids between *R.baurii* and *Hypoxis parvula* are excellent, flowering all summer and having an 'eye' of yellow stamens. 'Manavlins', 30 Sheering Lower Rd, Sawbridgeworth, Herts. CM21 9LF

For the hardy orchid enthusiasts--

Advertised in the 'Manavlins' catalogue (above) is the proposal that a Hardy Orchid Society should be formed, with its inaugural meeting at the Newbury Horticultural Show on 26th June. Further details about this can be obtained by sending a SAE to Norman J.Heywood, New Gate Farm, Scotchey Lane, Stour Provost, Gillingham, Dorset, SP8 5LT, U.K.

Protection in the wild is also one of the interests of the proposed Society.

Sought-after bulbs

Dr Peter Brandham, of the R.B.G. Kew, Richmond, Surrey TW9 3AB, is seeking bulbs of some Lilium species for a Danish colleague who is conducting a cytogenetical survey of the genus. They are: *L.dauricum* var *alpinum*, *L.bulbiferum* var. *chaixii* and *L.papilliferum*. If anyone knows of a source perhaps you would be kind enough to contact him directly

Bookends

Japonica Magnifica, by Don Elick and Raymond Booth, published jointly by Alan Sutton/Fine Arts Society/Saga Press/Timber Press at £80.00.

This sumptuous volume is, of course, not solely about the bulbs of Japan, although monocots do get good coverage. They are beautifully illustrated by Raymond Booth (one of your fellow-subscribers, incidentally!) and described in detail by Don Elick, a resident of Japan who is well-known internationally as a plantsman of considerable standing whose interest are not confined solely to Japanese plants. The whole book has an air of lavishness about it, as one might expect with such a title, but it is much more than a coffee table work, although it is certainly suitable for placing in a prominent position when friends are about. The fascinating detail in paintings and text is such that it is valuable for reference purposes, as a 'good read', and for pure aesthetic enjoyment.

The monocots depicted are *Amana edulis* (I'm so glad that Don has kept it separate from *Tulipa*), *Arisaema sikokianum*, *Erythronium japonicum*, *Fritillaria camtschatcensis*, *Hosta lancifolia*, *Iris setosa*, *Lilium auratum*, *L.medeoloides*, *Tricyrtis macranthopsis*, and in addition there are some rhizomatous/tuberous dicots such as *Anemone flaccida* (a lovely one with white, red-backed flowers) and the blue *Corydalis ambigua* which will also be of interest to 'bulb' lovers. On the subject of *Erythronium japonicum* he comments that it 'looks lovely under groups of Edgeworthia papyrifera or Daphne genkwa', which is a mouth-watering idea. The book is full of interesting facts which are not readily found elsewhere, for instance concerning Lilium auratum (it is amazing that we can grow it at all!) we find that in July when it is in flower the air temperature is around 32 degrees C, at ground level 42 deg., and even the soil at bulb depth can be at 25 deg!

The Bulb Newsletter team: Brian & Margaret Mathew, 90 Foley Rd., Claygate, Esher, Surrey, KT10 ONB, England. Annual subs. (4 parts per year): £10.00 for U.K., US $20.00 elsewhere, includes airmail postage.