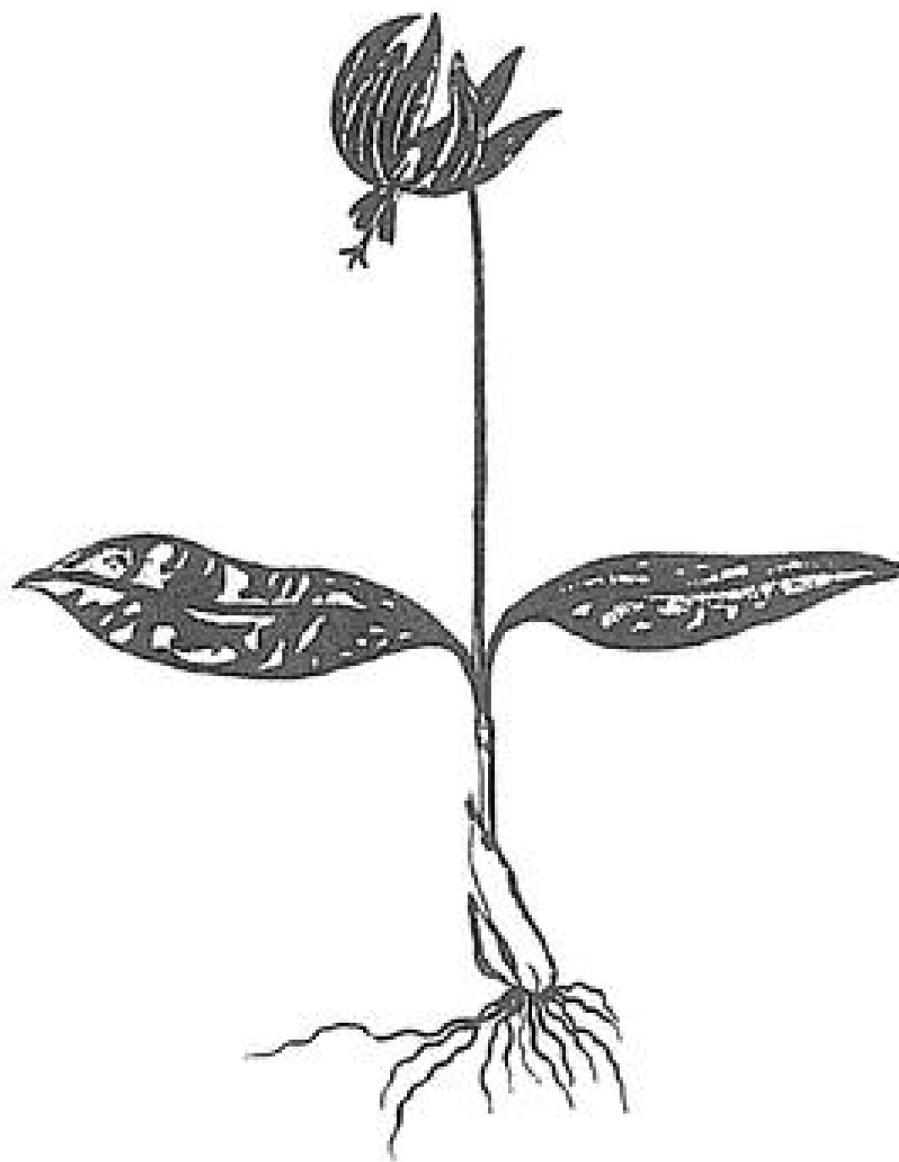


THE BULB
NEWSLETTER



Number 18

April-June

1997

The Bulb Newsletter No. 18

The Bulb Newsletter Team: Brian & Margaret Mathew
90 Foley Road, Claygate, Esher, Surrey KT10 0NB, U.K.

Eranthis - hybrids or not?

Every year, at winter aconite time, the same discussion crops up among friends as to what is 'the true' *Eranthis x tubergenii* (*E. hyemalis* x *E. cilicica*) and what is the correct spelling, for one of us, who shall be nameless but has the initials BM, caused consternation some years ago by referring to it - in print of all things! - as *E. x tubergeniana*. The correct spelling is *tubergenii* ('the *Eranthis* of Tubergen') since that was the way it was first used; *tubergeniana* would not be grammatically incorrect, but that was not the form in which the author (sometimes attributed to E. A. Bowles, sometimes to Hoog) published it, so *ii* it must be. It is worth reading what the firm of Van Tubergen [i.e. the Hoog family] had to say on the matter of this attractive plant in *New Bulbs and Tuberous Rooted Plants Introduced into Cultivation by C. G. Van Tubergen Ltd.* (1947):

"We succeeded in making a cross between *Eranthis cilicica* and *E. hiemalis* [correctly *hyemalis*] the result being a very vigorous growing, very large flowering Winter Aconite, especially suited for rock gardens because the flowers are sterile and never bear seed. In some gardens Winter Aconites propagate so freely from seed as to become troublesome weeds. If our hybrid is left alone for a few years it will grow into a handsome specimen, bearing a number of large clear yellow flowers in early spring. The foliage, owing to the influence of *Eranthis cilicica*, has a bronze tinge".

"Out of the said cross two distinct varieties appeared, the one which we called *Tubergenii* and another somewhat later flowering variety the flowers of which are coloured a much deeper yellow. We call the latter *E. Tubergenii* Guinea Gold."

The question is, are these hybrids at all? The *Flora of Turkey* Vol. 1 (1965) and the 2nd edition of Vol. 1 of *Flora Europaea* (1993) regarded the southern European *E. hyemalis* and the Turkish *E. cilicica* as variants of one species, on the basis that there were intermediates which broke down the distinguishing characteristics based largely on the degree of division of the leaves. In fact this view was based on some earlier work,

acknowledged in *Flora of Turkey* as follows: "We agree with Blakelock (*Kew Bulletin* 1948: 378, 1949) in regarding *E. hyemalis* and *E. cilicicus** as conspecific. Characters used to distinguish them (depth of division of the leaf segments, number of segments) vary continuously, and are not well correlated with geography."

If this is correct, that all the representatives belong to the one species, then it follows that one cannot have an inter-specific hybrid; in which case, the name *E. x tubergenii* has no meaning and any "hybrids" between different variants of the species should be named as cultivars of *E. hyemalis* - for example *E. hyemalis* 'Guinea Gold'. If, on the other hand, there are in fact two distinct species, *E. hyemalis* and *E. cilicica*, then *E. x tubergenii* is the correct name for all hybrids between them, and out of the resulting range of hybrids one can name individual clones - such as 'Guinea Gold'.

If there is only one species involved it is a little odd that *tubergenii* appears to have hybrid vigour and is sterile (although reports vary about this). Unfortunately there is no straightforward answer at present. Maybe detailed chromosome studies would enlighten us, or perhaps, at a more expensive level, genetic 'fingerprinting' might settle things once and for all. In the meantime I suppose we could just enjoy them and stop worrying about it!

* W.T.Stearn, in his *Dictionary of Plant Names for Gardeners* (1992) advises us that *Eranthis* is feminine, in which case *cilicica* is correct, not *cilicicus* as written in *Flora of Turkey* and *Flora Europaea*; other epithets published in the genus show that their authors agreed with this view: *longistipitata*, *stellata*, *pinnatifida*, etc.

And just to confuse things even more - - -

Whilst checking various facts about the above two *Eranthis*, we came across another name which obviously applied to a Turkish species, *E. isaurica*. This was described by Charles Simon in *Bauhinia* 7(1):5(1980) from southern Turkey from the pass between Süleymaniye and Seydeşehir on the border between the vilayets (provinces) of Antalya and Konya. In a discussion about the separation or merging of *E. hyemalis* and *E. cilicica*, Simon suggests, in agreement with Blakelock and the *Flora of Turkey*, that they cannot be distinguished. However, he goes on to say that "an aberrant population of *Eranthis* was found in South-West Anatolia, differing from *E. cilicica* by the number and shape of the seeds per capsule, the number being \pm doubled and the diameter half of [the length] of those of *E. cilicica*. Clearly this is not of earth-shattering importance from the ornamental point-of-view, but it is yet another aspect of *Eranthis* taxonomy which needs checking.

Snowdrops: Goodbye caucasicus, hello alpinus!

The taxonomic revision of *Galanthus* by Aaron Davis is eagerly awaited - it is to be published as one of Kew's *Botanical Magazine Monographs* in late 1997 or early 1998 and will be illustrated with colour plates by Christabel King*. Undoubtedly there will be some surprises for hardened Galanthophiles and we will have to wait a while longer to see what they are, but Aaron has given us a preview of one of the changes which will affect those who think that they know their snowdrops. This concerns the frequently-cultivated "G. caucasicus". In a paper entitled the *Taxonomic Status of Three Caucasian Snowdrops: Galanthus alpinus Sosn., G. bortkewitschianus Koss and G. caucasicus (Baker) Grossh.* by A.P. Davis, H. Mordak & S.L. Jury in *Kew Bulletin* 51(4): 741-752 (1996), we find that the name *G. caucasicus* disappears, as a synonym of *G. alpinus* subsp. *alpinus*. The Caucasian *G. alpinus* is recognised as having two subspecies: ssp. *alpinus* and ssp. *bortkewitschianus*. The former subspecies is quite widespread in the Caucasus and Transcaucasus, southwards into north-eastern Turkey, while the latter is known only from the type locality in the northern Caucasus. Most of the plants cultivated as "G. caucasicus" in gardens appear to be variants of the Balkan and Turkish *G. elwesii*.

* As soon as we have firm information about the publication of *The Genus Galanthus* by Aaron P. Davis we will pass on all the details of publisher and price for BN subscribers.

The Herb Trade

The number of herbs traded in the Middle East is considerable and it is no great surprise that F. Bingöl managed to purchase 132 samples on a shopping expedition to the herbal markets of Ankara, Turkey. In *The Herb Journal of Systematic Botany (OT Sistematik Botanic Dergisi)* Vol. 2, part 2 (1995), Dr. Bingöl lists these samples with their Latin and Turkish drug names, botanical names, a brief description of each of the samples, their chemical constituents and usage. There are few 'bulbs', even in the broadest sense, and most of these are members of the ginger family, Zingiberaceae: *Alpinia officinarum*, *Zingiber officinale* (ginger), *Curcuma zedoaria*, *Curcuma longa* and *Elettaria cardamomum* (cardamom). The non-gingers are *Aloe vera*, *Polygonatum multiflorum* (Solomon's seal) and *Orchis anatolica*, from which the drink *salep* is obtained.

Colchicum parnassicum and *C. graecum*

Jerry Flintoff, a Seattle-based bulb fanatic with a splendid collection, wrote earlier this year asking if we could comment on the differences between these two Greek species of *Colchicum*. The best thing we can do is to quote Karin Persson of Göteborg Botanic Garden, Sweden, since she has been researching the Greek colchicums and has published an account of the higher-altitude species in *The Mountain Flora of Greece* Vol. 2 by Arne Strid and Kit Tan (editors), published by Edinburgh University Press (1991).

In the key to the species, Karin distinguishes *C. parnassicum* from *C. autumnale* and *C. graecum* by the corm tunics being membranous and yellowish-brown to dark reddish-brown, and the perianth segments always tessellated. In the other two species, the tunics are sub-membranous to coriaceous (tough and leathery) and dark reddish- to blackish-brown, and the segments are not, or at most only obscurely, tessellated; *C. autumnale* and *C. graecum* are then again distinguished by their corms tunics: consisting of only a few layers and sub-membranous to coriaceous in the former and thick and stiffly coriaceous with several layers in the latter; the anthers also tend to be longer in *C. graecum*, although there is an overlap in measurements (6-10 mm in *C. graecum*, 4.5-7 mm in *C. autumnale*). As far as the habitat is concerned, the widespread European *C. autumnale* is described as a plant of damp meadows and woodland clearings whereas *C. graecum* inhabits dry, stony or rocky mountain slopes in Greece.

Turning to the description of *C. graecum*, we find that Dr. Persson provides some useful observations concerning the relationship between it and *C. parnassicum*:

“*C. graecum* differs primarily [i.e. from *C. parnassicum*] in being a more robust plant, the corm tunics are stouter and darker, the perianth segments are not distinctly tessellated, the leaves are often more numerous, larger and of a duller green colour, and the chromosome number is different ($2n = 44$, occasionally 42 or 43) [*C. parnassicum*, $2n = 54$]. The species is rather variable, e.g. plants from Kavki are exceptionally large, and flowers from Sterea Ellas are often more deeply coloured”

Our thanks to Karin Persson for publishing the results of her studies for the benefit of bulb enthusiasts such as us.

Schizostylis versus Hesperantha

I suspect that there will be some - perhaps many! - gardeners who will dig their heels in to the heaviest patch of clay they can find and refuse to budge over Peter Goldblatt's latest findings: that *Schizostylis* is not separable as a genus from *Hesperantha* and, because of priority, the latter name takes precedence. *Hesperanthas* mostly grow in dryer habitats than *Schizostylis* and have small corms whereas the latter has rhizomes, but Peter regards this as an adaptation to the wet environment in which it occurs rather than an indication of a fundamental difference in ancestry. Similarly, the [normally red] flowers of *Schizostylis* are considered not to be of significance in terms of origin, but an adaptation to attract certain pollinators (possibly a butterfly). So, if these recommendations are followed, *Schizostylis coccinea*, the only species, becomes *Hesperantha coccinea*. The paper by Peter Goldblatt and John Manning can be found in *Novon* 6: 262-264 (1996).

Requests

Robert Pardo is seeking the tuberous-rooted *Anemone tschernjaewii*, one of the *A. biflora* relatives which has white or pale pink flowers with a dark central 'eye' of stamens. It is not long ago that this was quite easy to acquire, for it was being sent out from Kashmir nurseries as *A. biflora* [this should not be taken as a complaint!]. These two highly desirable species belong to a whole complex from Iran, Afghanistan and the Central Asiatic Republics which includes *A. eranthioides*, *A. gortschakowii*, *A. petiolulosa* and *A. bucharica*.

We have some of these growing here in Claygate and they do reasonably well, although it is difficult to keep them compact; in the wild, they nestle down almost stemless amongst the rocks but here the flowers are often smaller and are carried on stems up to 10 cm tall.

In the event of anyone having a spare tuber of *A. tschernjaewii*, please contact Robert Pardo, Coupigny, Marcilly la Campagne, 27320 Nonancourt, France.

And if you have another spare one, the BN team would be only too pleased to help you out with your problem!

Monocots II

In Sydney, Australia, in September 1998, there will be a week-long conference on the comparative biology of the monocots, a follow-up to the first one which was held at Kew in 1993. Many papers will be presented, organised into three concurrent sessions: 'General themes', 'Grasses' and 'Other specialist groups'. There will also be poster exhibits and a choice of five pre- and post-conference field trips. For those interested, further details can be obtained from Karen Wilson, Royal Botanic Gardens, Sydney, Mrs Macquaries Road, Sydney NSW 2000, Australia.

A Leucojum which slipped through the BN net

Just when we thought that *Leucojum* was a genus fairly well known to us, another name became apparent while searching the literature for something else - usually the way of things. *Leucojum fabrei* is a *L. nicaeense* relative from the Vaucluse region of southern France; in fact, it was first collected way back in 1880 by J.H.Fabre and was assumed to be an outlying population of *L. nicaeense*, but it was not seen again in the locality and it was eventually thought that the record may have been an error. Then in 1978, Nicole Chiron of Avignon re-found it but, not realising the significance of her find, did not note the precise details of the locality. After several years of searching in vain by members of the Botanical Society of Vaucluse, the plant was eventually tracked down by the botanist Jean Pierre Roux, who found two small populations consisting of less than 100 individuals each. Studies by two eminent French botanists, Pierre Quezel and Bernard Girerd, revealed that there were significant differences between the Vaucluse plant and *L. nicaeense*, which is endemic to a small area of the southern Maritime Alps, much farther east, so they have described it and named it after its original discoverer*. Although similar to *L. nicaeense*, the authors have identified several distinguishing features:

- > the flowering stems of *L. fabrei* are 5-7 cm tall and always 1-flowered, but often have 2 or more in *L. nicaeense* and are up to 15 cm tall.
- > the individual flowers are larger in *L. fabrei*, with outer perianth segments 12-14 mm long (only 7-12 mm in *L. nicaeense*), inner 8-12 mm long and 4.5-5.5 mm wide with a rounded apex (6-9 mm long, 3-4 mm wide and bluntly triangular in *L. nicaeense*).
- > the stamens have filaments only 0.5-0.8 mm long (1 mm or more in *L. nicaeense*).
- > the tiny disc which is present at the base of the stamens has six much larger lobes in *L. fabrei* (0.5-0.8 mm long and more or less equal in length to the filaments) than in *L. nicaeense* (in which they are no more than 6 minute scales less than 0.3 mm long, much shorter than the filaments).
- > the ovary and outer perianth segments are minutely hairy in *L. fabrei*, at least when the flowers first open.
- > the flowering time (in the wild) is the end of April-early May in *L. fabrei*, February-early April in the case of *L. nicaeense*.

*The full paper from which this extract is taken is in the *Bull. Soc. Bot. France* 137, *Lettres Bot.* (1), 77-81 (1990).

Greek Yellow and Green Fritillarias Reviewed

Georgia Kamari, in her continuing studies of the genus *Fritillaria*, has produced an account of all those species having yellow or yellow-green flowers occurring in Greece, including all the islands. Seven species are identified:

- F. conica* ----- South-west Peloponnese & Is. of Sapienza
- F. euboica* -- Euboea & Mt. Athos
- F. pelinaea* --- East Aegean Is. (Chios)
- F. bithynica* -- East Aegean Is. (Samos & Ikaria) & western Turkey
- F. carica* ----- East Aegean Is. (Samos & Chios) & western Turkey
- F. rhodia* ----- Rhodes
- F. forbesii* ----- East Aegean Is. (Samos) & south-western Turkey

The absence of various other names in this list is explained by the fact that they are regarded by the author as synonyms (most of these were 'sunk' by Martyn Rix in his papers of the 1970s and in *Flora of Turkey* Vol. 8):

- F. dasyphylla* = *F. bithynica*
- F. schliemannii* = *F. bithynica*
- F. pineticola* = *F. bithynica*
- F. rixii* = *F. euboica*

The species in the above list which may be unfamiliar to many is *F. pelinaea*. This is because it is newly described by Kamari, an endemic of the island of Chios. It is a plant of about 20-25 cm in height with 7-12 rather broad glaucous leaves, the lowest broadly elliptic or ovate and the upper lanceolate, arranged alternately or in a whorl of three. The 1 or 2 flowers are narrowly bell-shaped, yellow or golden-yellow, about 1.7-2.2 cm long, and have lanceolate nectaries and a slender undivided style. Whether or not the seed pod has wings at the corners is considered an important point in the classification of these fritillaries and in the case of *F. pelinaea* the capsule is smooth, without wings.

In this paper (*Bocconea* 5:221-238, 1996) Kamari provides a useful identification key to the seven species. Two species, *F. conica* and *F. euboica*, have styles which are divided into 3 branches quite deeply (branches 1-5 mm long) and these two can be distinguished from each other by their foliage: bright/deep green in the former, grey-green in the latter. The five remaining species have the styles undivided, or with minute lobes less than 1 mm long.

F. bithynica is identified as the only species having strongly winged capsules.

F. forbesii and *F. rhodia* have narrowly linear leaves and are separated from each other using features of the flowers: the inner perianth segments narrower than the outer and the style papillose (minutely hairy) in *F. forbesii*, inner segments wider than outer, style glabrous in *F. rhodia*.

F. carica and *F. pelinaea* have wider lanceolate, oblanceolate or elliptic leaves approximately 1.3-2 cm wide, the lowest of which are wider (more than 1.8 cm) in the latter than in *F. carica*; the two are further distinguished by the colour of the nectaries, dark brown to black in *F. carica* and yellow-green in *F. pelinaea*.

Georgia Kamari also gives full descriptions of the seven species and provides two tables showing comparative leaf and flower details; new chromosome information is given for *F. rhodia* and *F. pelinaea*.

The Lily Group

The Lily Group's activities this year include a display of lilies in London at the Royal Horticultural Society's Show at Vincent Square on Tuesday 22 July and, on 20 July, a visit to the garden of the Chairman (Timothy Whiteley, Hall Farm, Evenley, Brackley, Northants); although intended for existing members, I am sure that prospective members would be welcome. In addition, there is an excellent annual seed distribution, a fine yearbook and a regular newsletter. Those wishing to join The RHS Lily Group should contact Dr A.F.Hayward, Rosemary Cottage, Lowbands, Redmarley, Gloucester, GL19 3NG (Annual sub. £5).

A new look at the Asphodels in the western Mediterranean

In a very substantial paper - in fact a book - Zoila Díaz Lifante and Benito Valdés have provided a revision of the genus *Asphodelus* in the western Mediterranean. The whole of one number of the periodical *Boissiera** - No.52 (1996) - is devoted to this confusing group of plants which are such a characteristic part of the Mediterranean flora. In the 189 pages, 16 species and several subspecies and varieties are recognised and are described in full. The area covered is Macaronesia, the Iberian Peninsula, the western Mediterranean islands, Morocco, Algeria, Tunisia, France and western Italy. The authors have studied over 3800 herbarium specimens and 800 wild populations of asphodels and have assessed a wide range of characteristics from seed germination and seedling development to pollen, reproduction biology and chromosome structure, in addition to all the various morphological features.

The 16 species are divided into 5 Sections, the largest of which is section *Asphodelus* (9 species) containing all the familiar species such as *A. albus*, *A. aestivus* and *A. cerasiferus*; these have a flattish or V-shaped cross-section to the leaf whereas all the others in the area have cylindrical or semi-cylindrical leaves. Perhaps not surprisingly, the beautiful stemless

**Boissiera* is published by the Conservatoire Botanique, Chambésy, Switzerland.

pink-flowered *A. acaulis* has a section of its own, as does the also pink-flowered but tall-stemmed *A. roseus*. Two species, *A. refractus* and *A. viscidulus*, are annuals covered with a sticky substance, and their flower stems appear alongside the leaf rosette, not in the centre of it, so together they also form a section. The three remaining species, *A. tenuifolius*, *A. fistulosus* and *A. ayardii* are annuals or short-lived perennials, are not sticky to the touch and have a flower stem central to the leaf rosette. All of the species, subspecies and varieties are illustrated by whole plate drawings, and distribution maps are provided.

The species and infra-specific taxa recognised are:

SECTION ASPHODELUS - Perennials; leaves flat/channelled; flowers white or faintly pink; inflorescence in centre of leaves

A. ramosus [divided into 2 subspecies: subsp. *ramosus* with 3 varieties: var. *ramosus*, var. *africanus* and var. *nervosus* and subsp. *distalis*]

A. lusitanicus [divided into 2 varieties: var. *lusitanicus* and var. *ovoideus*]

A. aestivus

A. serotinus

A. gracilis

A. albus [divided into 4 subspecies: subsp. *albus*, subsp. *delphinensis*, subsp. *occidentalis*, subsp. *carpetanus*]

A. bento-rainhae [with 2 subspecies: subsp. *bento-rainhae*, subsp. *salmanticus*]

A. cerasiferus

A. macrocarpus [divided into 2 subspecies: subsp. *macrocarpus* with 2 varieties, var. *macrocarpus* and var. *arrondeaui*, and subsp. *rubescens*]

SECTION VERINEOPSIS - Perennials; leaves semi-cylindrical; flowers pink
inflorescence central to the leaf rosette

A. roseus

SECTION VERINEA - Perennials or annuals; leaves cylindrical or semi-cylindrical
flowers white or faintly pink; inflorescence in centre of leaves

A. fistulosus

A. ayardii

A. tenuifolius

SECTION CLAUSONIA - Perennial; leaves semi-cylindrical; flowers pink; plant
stemless; inflorescence central to the leaf rosette

A. acaulis

SECTION PLAGIASPHODELUS - Annuals; leaves cylindrical; flowers white or
faintly pink; inflorescence lateral to the leaves

A. refractus

A. viscidulus

Magnificent *Corydalis* steal Show

The eagerly-awaited Tuberous *Corydalis* exhibit at the March RHS Show in London was even better than anticipated, in spite of a difficult season - difficult in that many of them flowered rather early so were not available or had already started to elongate into their late flowering/early fruiting stage. However, Wisley and Kew had combined with growers from The Alpine Garden Society to produce a fascinating table display, arranged so that the visitors were led from those species which require open, hot sunny conditions through to the woodlanders at the other end of the exhibit. As a bonus, the new *Corydalis* book was on display and for sale (see Bookends, p. 18), with its authors Henrik Zetterlund and Magnus Lidén in helpful attendance. Providing the most striking display were the many variants of *C. solida*, as one might expect since it is such an easy and successful garden plant. These ranged from the common dusky purple one, which used to be the only commercial form available before the advent of the *Corydalis* 'boom', through various shades of pink ('Beth Evans', Prasil Group, Sunset Group) to the deep salmon red of 'George Baker', greyish-pink with a hint of blue ('Highland Mist'), deep dull purple ('Rozula'), the aptly named 'Smokey Blue' which is exactly that, and the creamy-white 'Snowstorm' and purer white 'Vermion Snow'; there was almost as good a range in *C. solida* subsp. *incisa*, from white to pink to salmon. In the same section (sect. *Corydalis*), *C. paschei* in pale pink with a very slender spur was particularly elegant; a deep wine *C. wendelboi* ssp. *congesta* (the cultivar 'Abant Wine', distributed for some time as "sp. Kartal Tepe") was also highly desirable, and commemorates an old and much-missed friend to whom, it is good to see, the new book is dedicated.

In the smaller Section *Radix-Cava* - which encompasses *C. cava* and its relatives - I was particularly smitten by *C. blanda* subsp. *olympica*, a very grey-green and tight-growing variant of this white-flowered species. The extremely variable *C. cava* itself was exhibited in white and creamy-yellowish forms.

The fascinating, but less easy to cultivate and propagate group from the steppes of Asia, section *Leonticoides*, was not quite so well represented but there were some of the treasures such as yellow, long-spurred *C. aitchisonii* with its contrasting blue-grey foliage.

The 'woody' end of the exhibit was also the blue end, with a strong representation of the eastern Asiatic species such as *C. ornata*, *C. turtschaninovii* and, of course, the nurserymens' plant of the 1990s, *C. flexuosa*!

Many thanks to all who put together and provided plants for this splendid exhibit.

And some new Chinese *Corydalis*

I suppose that, with so many *Corydalis* already described from China, indicating a high degree of speciation there, and large areas of the country still poorly known, we should not be surprised that they are continuing to turn up. In *Acta Botanica Yunnanica* 18(4): 398-404 (1996), C.Y.Wu, Z.Y.Su and H.Chuang have written a paper describing six new sections in the genus [Sect. *Polyphyllae*; Sect. *Latiflorae*; Sect. *Geraniifoliae*; Sect. *Flaccidae*; Sect. *Kingiae*; Sect. *Linstowianae*] and several new species, subspecies, varieties and forms:

- C. flexuosa* forma *bulbillifera*: has bulbils in the leaf axils & larger flowers than *C. flexuosa*
- C. flexuosa* ssp. *kuanhsiensis*: a smaller plant than *C. flexuosa* with fewer, larger flowers
- C. pseudomucronata*: non-tuberous, to 60 cm tall; flowers red-purple, each 2.2-2.5 cm long*
- C. pseudomucronata* var. *cristata*: only c. 20 cm tall with a crest on the upper petal
- C. acuminata* subsp. *hupehensis*: variant of *C. acuminata* with smaller, more slender flowers
- C. tenerrima*: elegant, to 60 cm; flowers yellow, 1.5-1.8 cm long*
- C. striatocarpa*: fleshy-rooted, to 18 cm tall; 10-15 blue flowers, 1-1.2 cm long
- C. rorida*: fleshy-rooted, to 40 cm tall; flowers blue/violet, 1-1.2 cm long
- C. zhongdianensis*: to 40 cm, small yellow flowers - "no ornamental interest" acc. to Lidén*
- C. kingii* var. *megalantha*: large-flowered var. of this Tibetan species, flowers c. 2.8 cm long

Some of these new taxa are mentioned in the new book on *Corydalis* by Magnus Lidén & Henrik Zetterlund (see Bookends, p.18) since the former was also involved in describing some of the species in the above paper.

Stamps

The 32 cent *Crocus* and *Galanthus* stamps from USA have already been noted (BN14:16 and 16:9 respectively), but Wayne Roderick, Jane McGary and Sally Walker have sent in some more in the same series, all 32 cents. There is a winter aconite which is undoubtedly *Eranthis hyemalis*, and an anemone, almost certainly *A. blanda* in mixed colours; also a pansy but that does not quite qualify as a bulb, although many of the perennial *Viola* species are rhizomatous of course.

We are not quite sure about the Canadian 45 cent stamp sent in by Mr. R.E. Smith of Salt Spring Island, British Columbia, but thank you very much! It shows a blonde 'superhero', clad - well, some of her - in a skin-tight- blue outfit sporting the Fleur-de-Lys logo on parts of her anatomy, and she is clutching a device also shaped like an Iris or Lily, depending upon how you interpret the fleur-de-lys shape. Is this a version of Superperson we have not heard about here on this side of the globe? Anyway, she is a bulb enthusiast, apparently!

Cultivars of *Crocus chrysanthus* and *C. biflorus*

The New Plantsman, Vol. 4, Part 1, almost hot from the press, arrived this morning (April 3) and has provided much of interest in that it contains the results of a lengthy survey of the spring annulate crocus cultivars. The authors, Niels Jacobsen, Johan van Scheepen and Marian Ørgaard are to be congratulated on making some sense out of the mass of cultivars that are around in cultivation, often very muddled. They have included 49 named and 6 un-named cultivars and have provided descriptions and colour photographs of 53, together with a key to the identification of most of them (a few uncommon or unregistered ones are not included). We could do with this sort of approach for the cultivars of a lot of other genera!

Double crocuses continue to turn up. The latest is from Jean-Yves Tronel of Fleury les Aubrais, France, who had a plant of *Crocus asumaniae* (an autumn flowering 'Saffron Group' species from southern Turkey) which produced flowers with twice as many parts - anthers, styles and perianth segments; presumably it would have had 6-chambered capsules with twice as many seeds as well, which would be a useful characteristic.

***Leontochir*, and germination of reluctant seeds**

In the latest part of *Curtis's Botanical Magazine* (Vol. 14, Part 1, 1997) the extraordinary Chilean climbing 'bulb' *Leontochir ovallei* is featured, a relative of *Bomarea* and *Alstroemeria* with umbels of large, orange-red, funnel-shaped flowers. In the text accompanying the beautiful colour plate, Kew's Paul Wilkin describes the plant and discusses its relationship with the two other genera, and there are cultivation notes by Tony Hall of the Alpine Section at Kew. These include comments about germination, which can sometimes be rather disappointing - or rather slow - in this group of plants, the Alstroemeriaceae. Success at Kew has been achieved simply by placing the seeds in hot water which is then allowed to cool over a period of 24 hours. This does agree with the recommended treatment for any reluctant germinators in that other predominantly South American family, the Tropaeoleaceae, where near-boiling water is helpful in encouraging germination.

At Kew the cultivation of *Leontochir ovallei*, which occurs in the Atacama region of Chile receiving little rain but frequent coastal fogs, fits in with that of other winter-growing 'Mediterranean-type bulbs'. Tony Hall says that the one planting is on a warm sunny ledge in the Alpine House and other plants are grown in pots, plunged in sand; all are kept in frost-free conditions (min. 2°C) but the plant has not survived planted out and

unprotected in the open on the Rock Garden at Kew. He describes the method of cultivation as follows:

"A sandy, gritty seed mix is used at first, then a sandy, gritty compost with a low Nitrogen/high Potash fertiliser. Seedlings, grown in 3-inch 'long-tom' clay pots, remain undisturbed for at least a year before being repotted, and, at this early stage of development, the pots are sprayed over lightly, even when dormant-----. Eventually the plants will fall into a regular pattern of growth, i.e. they will re-emerge in the autumn, which is the best time to start watering and to pot on into deeper clay pots. Mature plants begin to turn yellow by early to mid-summer (after flowering) and direct watering is then withheld until the new growing season, although the surrounding sandy soil, or plunge medium in the case of plants in pots, should never be allowed to become completely dry."

Leontochir ovallei is a most impressive plant suitable for those gardening in mild areas, or with a slightly heated conservatory, but first one has to find a source! It is not listed in the current U.K. *Plant Finder*, but at present we do not have access to other similar publications from around the world, so it may well be available somewhere - if anyone has information, please let us know.

Lilium candidum reported in quantity

It is always good to hear of new records of strong populations of uncommon plants. *Anthophoros* No. 3-4 (1996) informs us that the largest population of the Madonna lily ever seen in Greece has been found near Kastoria, hundreds of individuals growing 'just as Asphodels grow elsewhere'. *Lilium candidum* has also been found growing in a wild situation on the Aegean island of Chios, a new record in Greece.

Catalogues

A seed list of primarily Balkan species, compiled by the Croatian botanists Zlatko & Angelina Petrusevac, will be obtainable shortly; the seeds are derived mainly from stock plants collected by them in the former Yugoslavia; Will McLewin, who will be co-ordinating the orders and despatch, has added to the list seeds of some of the North American *Erythronium* species. The price list is obtainable from Will McLewin, Phedar Nursery, Bunkers Hill, Stockport, Cheshire, SK6 3DS.

One of the most exciting lists to fall through the letter box is that of Jānis Rukšāns whose bulbs are grown under fairly tough conditions in Latvia - tough by British standards, that is. Well, where does one start on such a list? I did mention several of the alliums last year (BN14:16) but there are many other excellent species and selections, some untried by us. One which is a very good plant here, like a rather refined, purple-flowered and much smaller *A. karataviense*, is *A. nevskii*, a delightful plant doing well here in an open sunny situation in gritty/sandy soil. There are named selections of the tall 'drumstick' *A. jesdianum*, some of which, for example 'Per Wendelbo' sound very good indeed - 'the best form of *A. jesdianum* yet introduced.' The true *A. komarovii* (named after the general editor of the monumental *Flora of the USSR*) is described as having 1-2 elliptic purplish-tinged leaves and an umbel of bright violet-purple flowers on 40 cm stems and considered to be 'one of the showiest alliums'; naturally, it doesn't come cheap. And can you imagine a 1-metre allium related to *A. giganteum* but with individual flowers twice the size and much brighter? This is how *A. trautvetterianum* is described - I can see an expensive year coming up! *Corydalis* are getting full exposure this year, with a fascinating exhibit at the March RHS Show in London (see page 10), attended by *Corydalis* specialists Magnus Lidén and Henrik Zetterlund from Göteborg Botanic Garden, and the publication of their exciting new monograph which is reviewed on page 18. Here again, there are some great rarities, for example the recently described dwarf white-flowered *C. magadanica* from Eastern Asia, and the bright blue Asiatic species *C. ornata* and *C. turtschaninowii* as well as a good range of *C. solida* variants. *Crocus* is well represented, and some of the species are not easy to acquire elsewhere: for example the yellow, late summer *C. scharojanii*, *C. biflorus* subsp. *adamii* and *C. biflorus* subsp. *tauricus* which is considered distinct. Fritillarias include the lovely *F. imperialis* relative, *F. eduardii*, the rare true *F. verticillata* which I grow here and, I agree with Janis, is a much more attractive plant than the *F. v.* var. *thunbergii* that is much more frequently cultivated. Iris fanciers will find a number of Regelias, Junos Reticulatas (e.g. *I. danfordiae* wild type, *I. hyrcana*, *I. rosenbachiana*). There are many other items of interest - *Lilium sachalinense*, the pale blue *Muscari pallens*, *Ornithogalum ponticum*, a striking tall, racemose one, and the little yellow *Tulipa hissarica*. There is also an odd tulip which Janis sent for identification some years ago but to date I have been unable to decide what it is - probably a hybrid, but a most attractive crimson-red on 35-40 cm stems; it was sent to Latvia by van Tubergen many years ago as *T. sprengeri*, which it clearly isn't. Whatever it is, we can vouch for the fact that it is a good mid-season garden tulip, persisting well and flowering freely without any special

treatment. The conditions are that orders for this year should be received by 15 August. Phytosanitary certificates can be arranged at extra cost. Jānis Rukšāns, Bulb Nursery, Rozula, LV-4150, Cesu distr., Latvia.

The daffodil list of **Ron Scamp** always contains some new items as well as a large number of established cultivars (although a lot of these are also uncommon). Any daffodil with *N. jonquilla*, *N. triandrus* and *N. cyclamineus* in its parentage is worth considering, they are usually just that little bit smaller and more graceful than the large trumpets, ideally suited to the smaller garden. Some of the new ones on the list this year are the result of crossing back to species - for example 'Budock Bells' which is the all-white large-cupped 'Broomhill' crossed with *N. triandrus*, resulting in a plant with up to three drooping flowers per stem, chalky white with slightly reflexed perianth segments. Several are back-crossed to *N. jonquilla* ('Treble Two', 'Boscastle' and 'Wheal Coates') which imparts a wonderful scent and elegant smallish flowers, often more than one per stem; we have had some of the older Division 7 Jonquilla hybrids (such as 'Trevithan' and 'Sweetness') for years and they are such worthwhile garden plants that we shall certainly be adding to them. The newly introduced cultivars are quite expensive, of course, priced at ££ per bulb; and, is it my imagination, or do the bulb flies always go for the special ones? There are plenty of cheaper ones of course - an extraordinary list of them - and an interesting section at the end devoted to "The James Wells collection and other miniature daffodils" where one can find such favourites as 'Cyclataz' (*N. cyclamineus* x 'Soleil d'Or') and 'Kidling' (*N. jonquilla* x *N. assoanus*). The catalogue is well-illustrated in colour and costs £2. R.A.Scamp, 14 Roscarrack Close, Falmouth, Cornwall TR11 4PJ, U.K.

It may be too late this year to get Nigel Rowland's Spring List No. 12, but it is well worth getting on the mailing list for the next one from **Woodland Plants**. Just to give an idea of the range to be found here, I picked out among the 'bulbous' plants, *Codonopsis grey-wilsonii* - a tuberous, large-flowered blue twining species and its white form 'Himal Snow', *Corydalis elata* (another brilliant blue Chinese one, related to *C. flexuosa*), an impressive range of *Galanthus* species and cultivars, several Pacific Coast *Iris* species and a species of *Hosta* - what a change from the endless cultivars! - *H. kikutii* ssp. *polyneuron*. There are some interesting non-bulbs as well. **Woodland Plants**, Creek Cottage, Heath Lane, Thatcham, Berkshire, RG18 3FB, U.K.

Broadleigh Gardens list most of their bulbs in autumn catalogue of course, but the spring list is worth checking. Here, I found a new *Nerine bowdenii* cultivar 'Marnie Rogerson', described as 'very palest shell pink', and *N. sarniensis* is usually not all that easy to find. For those who enjoy the Solomon's seals several are listed from the miniature Himalayan *P. hookeri* to the seldom-offered giant 1.5 metre North American *P. commutatum* and rare British native *P. verticillatum* with its graceful whorls of narrow leaves. *Leucojum valentinum*, three variants of *L. autumnale* and *Zephyranthes flavissima* also caught my eye. Broadleigh Gardens, Bishops Hull, Taunton, Somerset TA4 1AE, U.K.

Hythe Alpines (last year's list was noted briefly in BN 17) have quite a lot of bulbs in their 1997 catalogue as well as specialist rock plants, but there is a separate bulb list which is a 'must'. A few of these treasures from the main list include *Leucojum tingitanum* (beginning to get around, at least in enthusiasts' collections, and apparently a good reliable flowerer), the small red turkscap lily *Lilium medeoloides* and *Solenomelus sisyrinchium*, an Argentinian rush-like Iridaceae with violet flowers. The spring 1997 bulb list has bulbs which are intended for despatch in late summer (i.e. about August in U.K.); overseas enquiries are welcomed. There are lots of interesting, seldom-available items here - *Bellevalia romana*, *Colchicum baytopiorum*, *Chionodoxa nana (cretica)*, several rare *Corydalis*, the rare white form of *Crocus banaticus*, *Crocus pestalozzae* in both blue and white forms, *Fritillaria striata* (grown from seed), the yellow *Ipheion sellowianum*, the broad-leaved *Muscari (Leopoldia) mirum* (see BN 7:15), *Rhodophiala elwesii* and an interesting selection of dwarf *Narcissus* species. The list will be augmented by a supplement in late summer; existing customers will receive the list automatically but others should send an SAE requesting it. Hythe Alpines, Methwold Hythe, Thetford, Norfolk, IP26 4QH, U.K.

Cambridge Bulbs always have special items, and this year's list lives up to expectations; I was just congratulating myself at having grown a small batch of seedlings from my one tuber of the Uzbek *Anemone petiolulosa* and then find that it is on offer here! A lovely plant, if you can grow it hard enough to keep it compact. For those who like to know the background to their plants, the *Crocus robertianus* stock listed here is derived from a collection by J.R.Marr after whose son it was named when he died tragically in childhood. The yellow autumnal *Crocus scharojanii* is not on sale very often, or *C. pelistericus* for that matter; both need wet conditions - mine grow in plastic pots standing in wet peat into which they are rooting vigorously, but we are in a dry area [some of our subscribers

may be amused to think of the U.K. as 'dry' but the news today was that eastern England is now at its driest for over 300 years. Good for bulb growers, though!). But I am digressing - a few more plucked from this delicious list: *Fritillaria serpenticola*, *F. eastwoodiae*, *F. gentneri*, *F. stribrynii*, *Hyacinthella lazulina*, *Iris* (a Juno) *galatica*, the yellow or pearly blue bearded *iris*, *I. purpureobractea* and the Central Asiatic *I. (Juno) warleyensis* which is one of the more vigorous species for outdoors - given a gritty, sunny position. *Lilium ciliatum* is a yellow turkscap from north-eastern Turkey with white-hairy buds and leaf margins; like its relative *L. ponticum* this needs a really cool spot with a humid atmosphere, for it is frequently bathed in mist in the wild. The unusual, tall *Ornithogalum reverchonii* is worth a try, but best if you can find a spot at the top of a wall or rock garden where the long leaves can trail down - it is more or less a cliff-dweller; although from Spain it is completely hardy here, outside without protection. Cambridge Bulbs, 40 Whittlesford Road, Newton, Cambridge, CB2 5PH, U.K.

Bookends

Garden Street Books produce frequent lists of new and secondhand gardening/botanical books, usually a miscellaneous collection arranged alphabetically by author. The latest is a specialist list devoted to 'bulbs' in the broadest sense and contains 183 items, including quite a number we have never heard of, arranged into two sections - new books and secondhand, the latter usefully grouped under genera. Garden Street Books, P.O. Box 1811, Geelong, 3213 Australia.

Although not many 'bulbous' plants occur in the Rockies, *The Alpine Flora of the Rocky Mountains*, Vol. 1: *The Middle Rockies* by Richard W. Scott does have some monocot interest in the form of Liliaceae (sens. lat.); there are 4 alliums: *A. brandegei*, *A. brevistylum*, *A. cernuum* and *A. schoenoprasum*, *Calochortus gunnisonii*, *Erythronium grandiflorum*, *Lloydia serotina*, *Tofieldia glutinosa* and *Zigadenus elegans*. There are, of course many dicots in the region so this is a book which will be of considerable interest to those who travel to the Rockies. The area defined as the 'Middle Rockies' extends from south-western Montana through Wyoming into north-eastern Utah. Two other volumes will be produced covering the whole of the Rockies. The species accounts give considerable detail with a list of synonyms, well-executed line drawings (620 of them), distribution maps and descriptions. Identification keys are provided to genera and to species. This 901-page volume is published by the University of Utah Press, Salt Lake City UT84112 at \$110.

Gladiolus in Tropical Africa by Peter Goldblatt. It is good to see at long last a revision of all the *Gladiolus* species inhabiting tropical Africa, for the only previous attempt at such a work was by J.G.Baker in 1898, in the *Flora of Tropical Africa*. It is true that there have been some accounts of *Gladiolus* for smaller areas within tropical Africa - individual countries or groups of adjacent countries - for the various Floras, but such an approach is often unsatisfactory in that, for the very widespread and variable species, a wider view is essential if their taxonomy is to be understood. For the purposes of this monograph, tropical Africa is defined as 'all of sub-Saharan Africa, south to the northern borders of Namibia, Botswana and South Africa constituting southern Africa. The South African species were revised in 1972 (*A Revision of the South African species of Gladiolus* by G.J.Lewis, A.A.Obermeyer & T.T.Barnard) and a few have been added since that time to the 103 species described there (currently estimated at over 150 species, but *Gladiolus* now includes some genera which were excluded in that work: *Homoglossum*, *Petamenes*, *Anomalesia*, *Oenostachys*, and *Kentrosiphon*). Goldblatt recognises 82 species in tropical Africa and, to complete the genus, there are 8 species in Madagascar (already revised by Goldblatt in 1989: Systematics of *Gladiolus* in Madagascar in *Bull. Mus. Nat. Hist. Nat.*, Ser 4, Sect B, *Adansonia* 11: 235-255) and about 10 species in the whole of the area covering Europe, Asia and North Africa (i.e. north of the Sahara).

Each of the 82 species for tropical Africa is described in full with synonyms, literature citations, type specimens, distribution and habitat details, history of discovery, discussion about relationships, etc. There are sections on the structure of the *Gladiolus* plant, leaf anatomy, pollen studies, cytology, reproductive biology, an identification key and comments on the development of the garden gladioli and cultivation. Numerous line drawings assist in identification and there are 41 colour plates showing just how spectacular some of these tropical species are. Sadly, hardly any of them are cultivated to any extent; although they are probably very frost-tender, it should be possible to grow at least some of them in much the same way as the tender large-flowered hybrid cultivars, planting them out in spring and lifting them for the winter while dormant. Their potential for breeding purposes must also be considerable.

Gladiolus in Tropical Africa is published by Timber Press, available through good bookshops.

Corydalis. A gardener's guide and a monograph of the tuberous species by Magnus Lidén and Henrik Zetterlund, published by The Alpine Garden Society (1997). The tuberous *Corydalis* have been justifiably popular for some time now, albeit by specialist gardeners, and this new

book will do much to enhance the popularity, and hence the demand from nurseries. It is a nicely balanced combination of gardening and serious botany, so those who wish to check the identities of their *Corydalis* can do so accurately by means of the detailed keys and descriptions, while those who wish to just enjoy cultivating them will find plenty of interest as well. The authors, both from Göteborg, are ideally placed to produce such a blend, Magnus Lidén a botanist at the University who has studied the genus for over 15 years and Henrik Zetterlund, Curator of the Alpine Department at the famous Botanic Garden who is skilled in their cultivation.

The book starts with a section on What is a *Corydalis*?, placing the genus in the family Fumariaceae in relation to other genera; it is interesting to note that the authors consider it to be a large genus of about 440 species. A description of the *Corydalis* plant follows: useful if one wants to understand the make-up of the apparently rather complicated flower structure. *Corydalis* in Medicine shows that they are not just aesthetically pleasing but, nevertheless, I think I will stick to what the doctor prescribes. There is a historical resume, and a valuable key to the genera, most of which are not cultivated to any extent, except *Dicentra* of course. Pollination, the reproductive systems, seeds and seed dispersal may sound all rather dry topics but there is useful information here for those who are serious about the propagation of their plants. The general comments about their history in cultivation and cultivation today are interesting, but then we come on to the more detailed part, starting with a key to the 5 tuberous sections of the genus, which is where the real 'meat' of the book lies. Section *Corydalis* has many garden-worthy and on the whole not-too-difficult species; this section is divided for practical horticultural purposes into three: the Western Woodlanders, the 'Bulb-Belt' species and the Eastern Woodlanders, based on the origin and corresponding treatment in cultivation. Keys to identification of species follow, then each species is dealt with in turn, giving the Latin name, literature, type specimen, synonyms, description, distribution and a discussion - all the essential ingredients of a thorough botanical monograph. Each of the five sections is dealt with following the same format - Sect. *Corydalis*, Sect. *Radix-cava*, Sect. *Leonticoides*, Sect. *Dactylotuber* and Sect. *Duplotuber*.

Having dealt with the tuberous species fully and in detail, the authors have whetted our appetites even more by providing a separate section of the book entitled 'Non-tuberous *Corydalis* - A Selection'. Here, they have taken other sections of the genus and given, using the same format as before, a few of the tempting non-tuberous species to give an insight into what else lies in this large and surprising genus; if you thought the tuberous ones were the best, take a look at the photograph of

C. appendiculata, and don't forget that the well-known *C. cashmeriana* and *C. flexuosa* and their relatives come into this category as well. In all, we have 125 colour photographs and many useful line drawings. This is an excellent book, it is the only work available covering this remarkable genus and is well worth the £24 (+ p.& p.), available from The Alpine Garden Society Publications, AGS Centre, Avon Bank, Pershore, Worcs. WR10 3JP, U.K.

Oh, and I suppose that I should mention my own book! *Growing Bulbs* by Brian Mathew was published recently by B.T. Batsford at £20. This rather mundane title describes exactly what is inside; the aim was to provide a cultivation guide to as many 'bulbous' genera as possible, in fact over 300 although the publishers claim it is about 100 on the dust jacket! I use the term 'guide' since no-one can lay down hard-and-fast rules about cultivation on a world-wide basis; in cases where I have little personal experience I have made recommendations, based on where the bulbs occur in the wild, as to how they might be grown. Hopefully, anyone acquiring a bulb of a genus they have not attempted before will find some useful comments about where to begin. Unlike '*Smaller Bulbs*', and the books about various genera I have written, this one does not describe individual species, but there is an introduction to each genus - number of species, distribution and description - before coming on to the cultivation notes. Introductory chapters give basic information about why there are bulbous plants, winter/summer growers, temperate, subtropical and tropical bulbs, planting time, planting depths, soils and potting mixes, garden situations for bulbs, bulbs in pots & containers, bulbs under glass, bulb frames, propagation, etc. There are 108 colour photos, integrated within the text.

I am sure that I must have missed a few genera, so if anyone reading it notices any glaring omissions, please let me know, although at present I have no intention of ever writing another book - well, after the next one, that is. There will inevitably be some name changes I have missed and others that are contentious; in botany, the goal posts keep moving!

The Bulb Newsletter is published quarterly and is obtainable from:
B. & M. Mathew, 90 Foley Road, Claygate, Esher, Surrey KT10 0NB, U.K.
Rates are as follows:

- UK: £10.00
- Europe: Eurocheque or International Money Order for £12.00
- USA and other countries: \$20.00 or International Money Order for £12.00

[Airmail postage is included]

Cheques payable to B. Mathew please, not the Bulb Newsletter