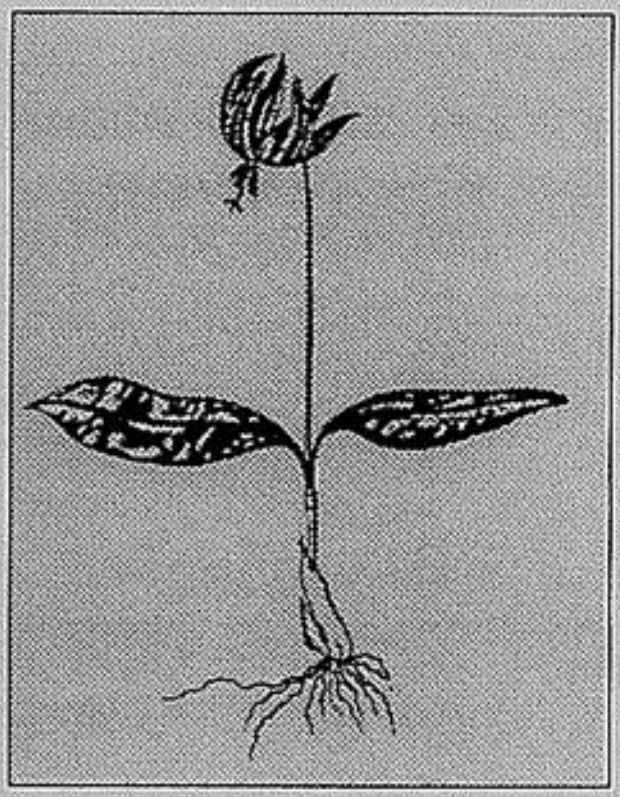
THE BULB

NEWSLETTER



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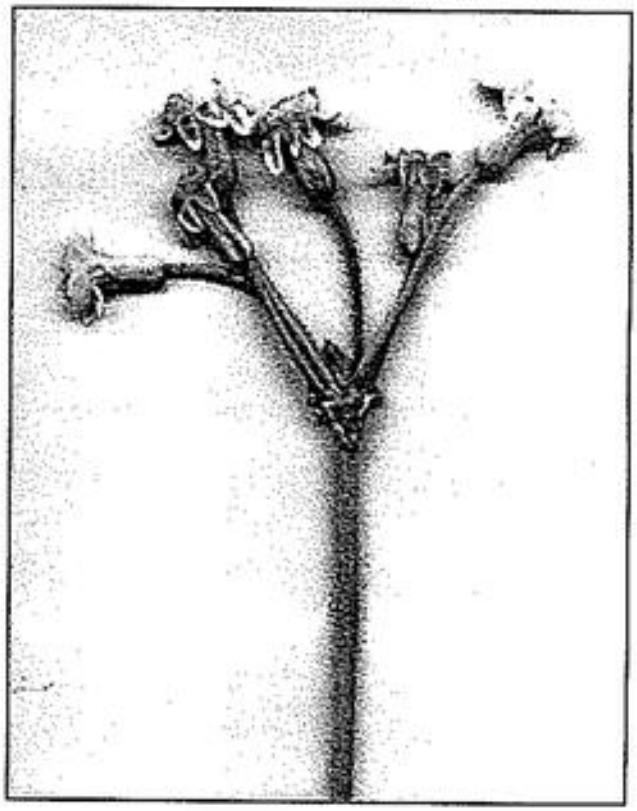
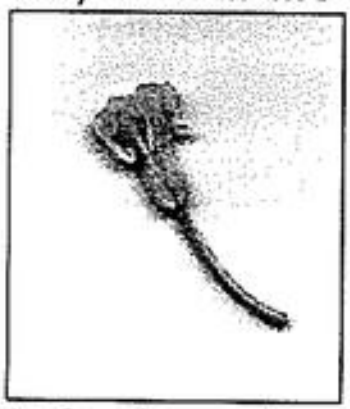
Not a very smelly Tulbaghia



Just recently (flowering in mid-spring) Keith Ferguson brought along a piece of a 'mystery bulb' for identification, noting that it looked a bit like a *Tulbaghia* but had no smell of garlic.

In fact it was a *Tulbaghia*, but one that we have not yet seen in flower, namely *T. dregeana*. Although not very ornamental it is an interesting and rather distinctive species with a short corona forming a very thick, fleshy, creamy-yellowish ring in the centre; Brinsley Burbidge* describes it as being doughnut-shaped which is very expressive. The six perianth segments arise all at the same point at the apex of the tube and in this feature it differs from most other species in which they arise in two whorls of three, one above the other; these whorls are often quite noticeably separated from each other by a clear gap. On the specimen that we were shown, some of the flowers, presumably abnormal ones, had seven perianth segments.



The perianth tube is green, as are the segments but they have white margins. The combination of the thick fleshy corona and the one whorl of segments make this a fairly easily recognisable species. The genus as a whole is fairly widespread in Southern Africa, and as far north as Kenya. This species is from the western Cape region of South Africa and is recorded by Canio Vosa** as occurring over a fairly wide region: from Kamiesberg, Vanrhynsdorp, Springbok, Calvinia, Wuppertal and Hondeklip Baai.

As for the distinctive aroma of garlic, it is there but only faintly so; we crushed a part of the flower stem and were able to detect just a very slight onion smell. Perhaps this is one point in favour of this otherwise fairly dowdy (but interesting) plant.

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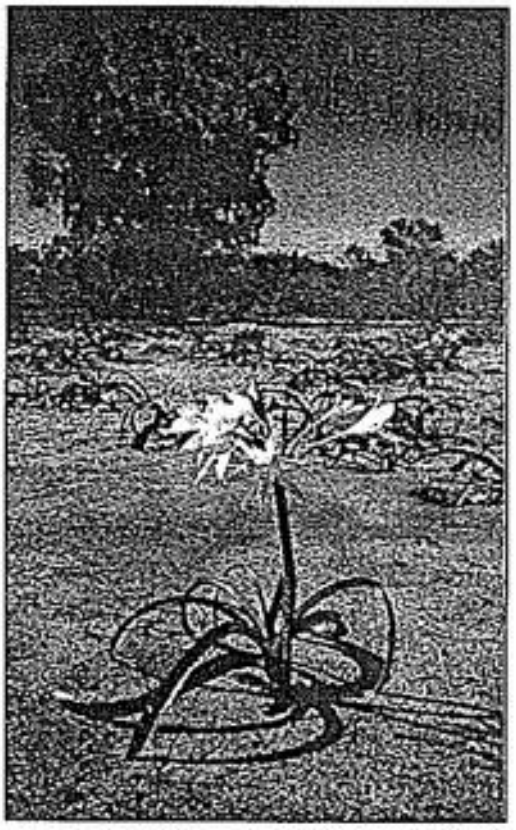
* Brinsley Burbidge, The genus *Tulbaghia*, in *Lilies 1978/9 and other Liliaceae* (RHS Lily Group Year Book).

** Canio Vosa, The cytotaxonomy of the genus *Tulbaghia*, in *Annali di Botanica* Vol. 34, 1975.

Which Crinum is this?

Thanks go to Rosemary Steele from Coltishall, Norwich, who has sent in to the BN office for identification a photograph of a splendid *Crinum*, taken by her cousin in South Australia in the Strzelecki Desert.

In the case of the Amaryllidaceae of Australia we are fortunate in that the *Flora of Australia* account is complete, published in 1987 (Vol. 45). Only five *Crinum* species are recognised, four of them endemic to Australia, but it is acknowledged that this is a rather conservative approach. The species shown here, which appears to be *C. flaccidum*, is one that is regarded 'a variable complex' and that it merges with *C. angustifolium* in parts of its range. To quote:



Crinum flaccidum in South Australia

"The breakdown of distinguishing morphological characters between *C. flaccidum* and *C. angustifolium* in Queensland indicates a significant degree of gene exchange. The two taxa as defined here need careful scrutiny to determine if they are indeed different or simply rather consistent eco-variants." The salient features of *C. flaccidum* are: the broad, floppy basal leaves, individual flowers on a longish (1.5-7 cm long) stalk (pedicel) and strongly curved anthers; *C. angustifolium* is fairly similar but has stalkless, or only shortly stalked, flowers, and generally fewer leaves per bulb.

As can be seen, *Crinum flaccidum* is a handsome plant with large white flowers but, according to the *Flora*, the strong scent is frequently unpleasant.

A lily is a lily - or is it? by Brian Halliwell

The word lily has been freely used as a common name for many plants that do not belong to the genus *Lilium*. The word lily may be derived from a Celtic word 'li' which means white or whiteness, but in fact few of the so-called lilies have white flowers. A dictionary definition of lily is 'Any of a large number of plants belonging to *Liliaceae* and related families - so called from a real or fancied resemblance to the lily in colour or form.' From such a vague definition, it is not surprising that there are so many plants that are referred to as lilies; or perhaps it is because of so many plants being called lily that the dictionary definition is vague. Common to most plants that bear the name 'lily' is a swollen underground storage organ that goes through a period of dormancy; most are monocots.

All the so-called lilies are prefaced with an adjective which can be the name of a country. Although this may be the country of origin, this is not always the case. Guernsey lily, *Nerine sarniensis*, a native of southern Africa, bears this name because bulbs from a shipwreck were cast up (or brought ashore*) on the island of Guernsey where they became established. Scarborough lily, *Cyrtanthus alatus* (= *Vallota speciosa*) is said to have acquired its name because the ship which first brought bulbs to Britain was called Scarborough. Peruvian lilies are species of *Alstroemeria* which come mainly from Chile. In earlier centuries much of the west coast of South America was called Peru and it was only in the nineteenth century that political boundaries were laid down.

More accurate adjectival place names are: Mediterranean lily for species of *Pancratium*, Cape lily for species of Agapanthus and Persian lily for *Fritillaria persica*.

The situation where a plant grows may be included: rock lily for species of *Dendrobium* (*Orchidaceae*); lily-of-the-valley for *Convallaria majalis* and wood lily for species of *Trillium*. The name glacier lily, *Erythronium grandiflorum*, refers to its habitat as a snow-melt plant, while avalanche lily for *E. montanum* may refer to habitats where avalanches sweep down, or to the visual effect that a drift of them produces in the distance.

A similarity to a living creature is featured in butterfly lily because the flowers of *Hedychium* species mimic these insects. The sombre colour of the flowers of species of *Tricyrtis*, or of the mottled leaves, are suggestive of the skins of some amphibians, hence the name toad lily, whilst the spotting on leaves and sometimes flowers has resulted in Leopard lily for species of *Lachenalia*.

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* One report suggests that the Channel islanders were given some bulbs of this plant by some grateful Dutch sailors they had rescued from a ship that had run aground on its way back to Holland after a journey via the Cape.

It is easy to see from the leaf shape why species of *Gladiolus* are called sword lily, and torch lily for species of *Kniphofia* is apt because of the flower colour and shape of the inflorescence. It is also the shape of the inflorescence in *Galtonia candicans* that has resulted in the name spire lily. In *Anthericum liliago*, St Bernard's lily, and *Paradisia liliastrum*, St Bruno's lily, the flowers of each are the floral emblem of these saints, while in St James' Cross lily, *Sprekelia formosissima*, it is the arrangement of the showy red perianth segments in the shape of a cross that provides the apt common name.

Whilst most of the so-called lilies are monocots, some belong to the dicotyledons. Lilies-of-the-field in the bible are now generally considered to be *Anemone coronaria* in the *Ranunculaceae.* In the same genus is *Ranunculus lyallii*, a giant New Zealand buttercup known as the Mount Cook lily. *Loasaceae* provides us with *Mentzelia ornata*, the prairies lily.

These, then, are some of 'the other lilies', but there are many more!

Cultivation Notes - Some of the 'lesser-known' bulbs

Back in the winter we had a plea from Yvonne Matthews in Cornwall concerning the cultivation of some of the bulbs that are rather less familiar, and particularly with regard to the watering regimes.

The species she mentions are *Pancratium canariense*, *P. foetidum*, and *P. maritimum*, *Trachyandra*, *Cybistetes longifolia*, *Brunsvigia* spp., *Boophone guttata*, *Rhodophiala* spp. and *Stenomesson.*

Before making any comments, the BN office would like to make a general plea for specific cultivation notes on any of the more unusual bulbs, even just one individual species, for which a particular type of cultivation has proved to be successful.

Dealing with the bulbs mentioned above, we have found that *Pancratium maritimum* and *P. canariense* are bulbs that are in active growth in autumn/winter/spring, so are given a warm rest period in late spring to mid-summer, then started off again in late summer. However, these, as with many other amaryllids, always need a little moisture at the roots so if in pots they are best plunged in sand which is watered from time to time even when the bulbs are dry and dormant. We have not been successful with *P. foetidum* so cannot comment. *Trachyandra* spp. are non-bulbous (more like *Anthericum* in growth) and should probably not be dried out completely; we have not tried to grow these but would expect them to be summer growers - cultivation methods will depend on which species it is, since a lot of them are from tropical Africa. Perhaps at this point a comment about tropical bulbs might be useful.

In general it can be said that any bulbs from near-tropical latitudes will not be 'fixed' in the time that they start to grow or rest. In the wild the commencement of growth or dormancy will depend mostly on moisture availability (i.e. on wet and dry seasons) rather than the marked temperature changes that bulbs from temperate regions experience (as in Mediterranean-type climates). In cultivation the time at which they are dried off and started into growth again becomes more a matter of convenience for the grower. It makes sense in a cool climate to treat them as summer growers and dry them off in a frost-free place for the winter (for the really tropical ones the airing cupboard can be useful here, although over-drying is a danger). The Peruvian *Paramongaia weberbaueri* is a good example. By adjusting the watering it can be brought into growth at any time of year; we choose to start ours in early summer. *Stenomesson* spp. are mostly from subtropical latitudes and can be treated in the same way, and *Urceolina peruviana* (probably also a *Stenomesson*), *Hymenocallis*, etc. Evergreens like *Eucharis* are never dried out, of course.

On the other hand, bulbs from temperate regions are usually very 'fixed' in their seasons and cannot readily be induced to do anything else other than what they are 'programmed' to do. They are either from winter rainfall areas (for example, all the Mediterranean and western Asiatic *Crocus*, *Tulipa*, *Fritillaria*, etc. and the numerous ones from the South-west Cape, California and Chile), and are therefore autumn-winter-spring growers, or they are from summer rainfall areas and are winter dormant. In the latter category there are those from the Eastern Cape region (some *Moraea* spp., some *Gladiolus* spp., *Eucomis*, *Galtonia*, *Rhodohypoxis*) and many *Lilium* spp. from summer monsoon regions of China and Himalaya. Any attempt to change the winter growers into summer growers ultimately fails, although some nurserymen keep e.g. *Ixia* and *Sparaxis* dry for the winter and offer them for sale as summer growers; they will perform for one season and then try to revert to their normal behaviour. Conversely, lilies can be forced in winter but they will not survive if subjected to this every year (except for the subtropical types such as *L. longiflorum*).

Returning to Yvonne Matthews' list, she asks about *Rhodophiala* spp. These are from Chile and are naturally temperate winter growers; we treat them as winter growers with a summer dormancy, although not dried out totally, and then start them into growth in late summer.

So, to BN subscribers, please send in your comments – no doubt there will be disagreement on some (if not all) of the above! If you have any detailed cultivation notes on one particular species, do share them with others. We have, for example, not grown *Cybistetes longifolia* for very long and cannot comment yet, and we do not have *Boophone guttata*; *B. disticha* is in leaf now (according to the calendar, summer, but global warming has missed Surrey this year!).

A curious Iris in Westhumble

Before everyone says where is Westhumble, let me explain that it is where Alan Edwards grows (very well) his collection of bulbs, near Dorking in Surrey. Recently he sent some photographs of an *Iris* for confirmation of the name; it was acquired as *I. grant-duffii*, but Alan suspected that it was in fact a close relative, *I. masia*.

Alan writes: "It has languished with me for perhaps five or six years at the back of one of my 'Access' frames where it has had a free root-run in a deep gritty compost. Just as I was coming to the conclusion that I was unlikely to ever see it flower it pleasantly surprised me by producing four stems with single flowers, the first of which opened on 5th May.... The site, at the back of the frame, must certainly stay quite warm through the summer but I would hesitate to claim it ever becomes completely arid. The clump is now c. 5" wide and I will find a division for you during dormancy. I must remember to wear gloves whilst so engaged!"

Iris masia, grown by Alan Edwards

The reason for Alan's final comment is that the bulbs and rhizomes (this group of species has a combination of both) are covered with stiff needle-like fibres that are easily capable of piercing the skin, so that handling them can be a painful operation.

Iris masia has purple flowers and belongs to the *Syriacae* series of *Iris*, with just a few species distributed in southern Turkey, Iraq, Syria, Jordan and Israel, perhaps also Lebanon. At times in the past they have all been sunk into one species, as *I. grant-duffii*, but this seems to be excessive lumping. This species has yellow flowers with perianth parts wider than those of *I. masia*, wider leaves and is a shorter, stockier plant. Several names have been published in the group:- *I. grant-duffii*, *I. masia*, *I caeruleo-violacea*, *I. melanosticta* and *I. aschersonii*. The first two are certainly distinct species and the third is probably just a synonym of *I. masia*, but the last two

require further study.

Iris melanosticta was described from inland dry basalt areas in southern Syria. *Iris grant-duffii*, on the other hand, is found growing in moist meadows and on the coastal plains, mainly farther to the south in Israel. Like *I. grant-duffii*, *I. melanosticta* has yellow flowers but these have narrower flower parts; the falls are marked with prominent black streaks.

Iris aschersonii was said to have flowers with a greenish yellow ground colour, also marked with black veins and dots, and was reportedly from near Adana in southern Turkey.

It seems fairly clear to me that this group is closely related to the Reticulata irises, and especially to *I. pamphylica* which also has the 'needles' attached to its bulb, although they are much less well-developed. In their pollen characters and chromosome number the two species (*I. masia* and *I. pamphylica*) are also similar.

Iris masia has now been found in an area of southern Turkey (towards Antalya), far to the west of its previously known area which was just north of the Syrian border. Tony Hall at Kew has cultivated both this and *I. grant-duffii*; in fact, *I.masia* does quite well out in the open there.

Fritillaria delavayi
Reportedly good to eat

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You can try yours if you like - let us know what they taste like; the BN staff will stay with potatoes.

The Monocotyledon volume (Vol. 1) of the *Flora of Sikkim** by P.K.Hajra & D.M.Verma (editors) includes notes on local uses for plants. It states that the bulbs of *Fritillaria delavayi* (which is extremely rare in the UK in cultivation) are used as a source of food, roasted;

Lilium wallichianum bulbs too are used as a vegetable. Clearly it pays to always check out the local market to see what is on offer - a kilo of either of these (before roasting) would be very acceptable.

The *Flora* is a little more interesting than a list of plants; the introductory sections give details of the climate of Sikkim, its people, the vegetation types, endemism, horticultural value, medicinal and other uses (timber, dyes, fodder), conservation, etc. The information provided about each species includes a short description, localities, altitude range and flowering time. The total flora is thought to be in the region of 5000 species, very rich for a fairly small State; however, the altitude range for Sikkim as a whole is 244 to 8598 m; no wonder there is great diversity!

It is interesting that the two small lilies of the region, usually treated as *L. nanum* (pink) and *L. nanum* var. *flavidum* (creamy), are recognised as separate species, but in the genus *Nomocharis*, as *N. nana* and *N. flavida*.

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*The *Flora of Sikkim* is published by The Botanical Survey of India, P-8, Brabourne Road, Calcutta 700001, India.

A newly described Roscoea

In the latest part of the *Edinburgh Journal of Botany* 57: 271-278 (2000), C.Ngamriabsakul and M.F.Newman have identified and named *Roscoea bhutanica*. This is a relative of *R. tibetica* and has in fact been included under that species in the past. It is a native of Bhutan, in the Districts of Thimphu, Ha, Punakha, Tongsa and Bumthang, and is also recorded from southern Tibet. It thus appears to be fairly widespread and has an altitude range of 2290 to 3050 metres, flowering between May and July. Like *R. tibetica* it is a small, stocky plant with purple flowers and wide leaves but the authors note that it flowers slightly earlier, usually while the leaves are short whereas *R. tibetica* has several leaves quite well-developed by flowering time; they also note a difference in the leaf clusters - distichous in *R. bhutanica* (i.e. they tend to lie in one plane, as in a fan), while those of *R. tibetica* form a rosette.

For the rest of the structural characteristics there is a comparative table: *R. tibetica* has a calyx longer than the bracts; the perianth tube is long and visible above the calyx; the lip of the flower is shorter than the lateral petals adjacent to it; the apex of the lateral petal is acute; the tip of the stamen appendage is obtuse. In *R. bhutanica* the calyx is equal to or shorter than the bract, the perianth tube is usually enclosed within the calyx, the lip is longer than the lateral petals; the apex of the lateral petal is obtuse and the stamen appendix tip is pointed.

The paper also includes a key to the species of *Roscoea*.

And a new lily

The BN team struggles when botanical papers are written almost wholly in Chinese, but in this case there is a short Latin diagnosis and a drawing, so we can give a hint as to what this one looks like.

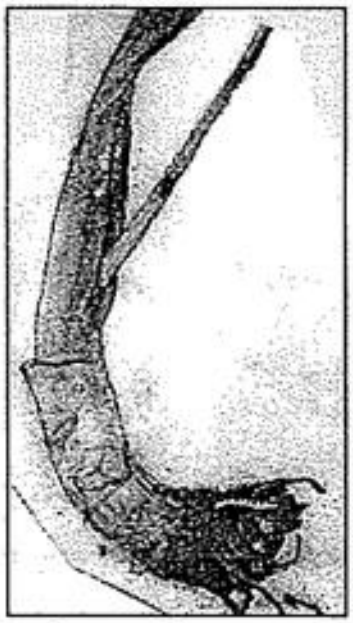
Lilium floridum (meaning 'profusely flowering') is described in the *Journal of Wuhan Botanical Research* 18: 115-116 (2000) by J.L.Ma and Y.J.Li. It is said to be related and similar to *L. leichtlinii* var. *maximowiczii* and indeed the drawing shows a lily with many narrow leaves and pendent, turkscap-shaped flowers with dark spots on the segments; presumably the flower colour is orange-red like the plant with which it is being compared. The main difference noted is that the inflorescence axis and pedicels (the individual flower stalks) are longitudinally ridged and covered with white hairs, as are the leaves, bracts and buds. Of course, *maximowiczii* sometimes has hairs, at least on the buds and in the leaf axils, although not to this extent.

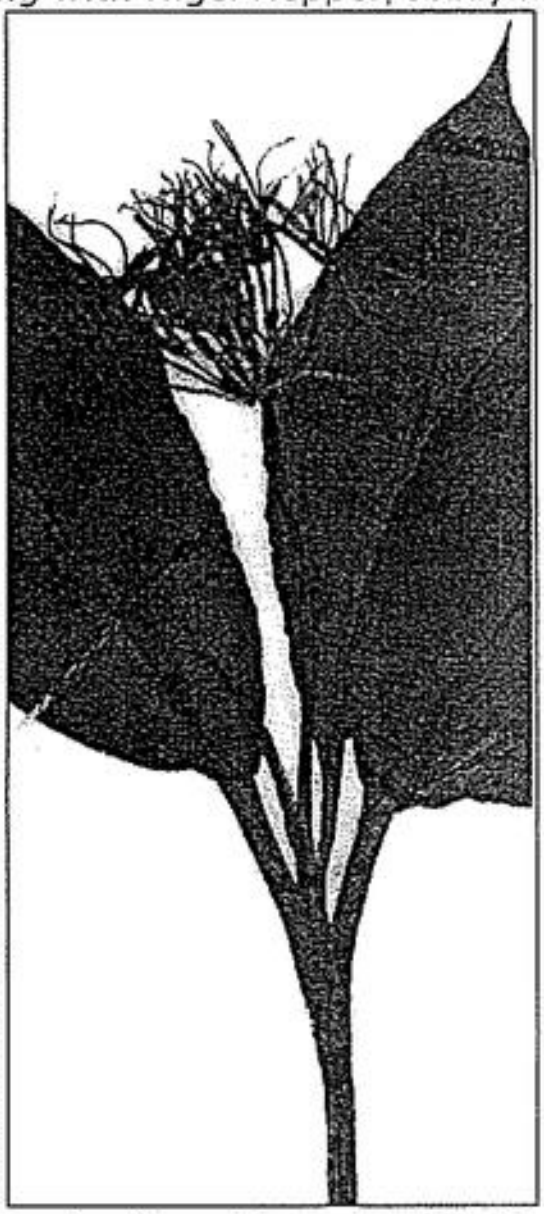
Lilium floridum is described from Liaoning, on Mt. Fenghuang at 200-400 m.

A curious Scadoxus

Henning Christiansen has given us many interesting bulbs, and poses interesting questions from time to time. This one, concerning the African genus *Scadoxus* (formerly included in *Haemanthus*), is no exception. It involves *S. pseudocaulis* subsp. *prorumpens*. Henning was sent some seeds but could not find a reference to the name.

Now, this enquiry took the BN Editor back to his roots, for one of his first jobs at Kew (1960s) entailed working with Nigel Hepper, studying the amaryllids for the revised edition of the *Flora of West Tropical Africa*. One of those that caused puzzlement was a *Scadoxus* (then *Haemanthus*) in which the flower stem burst out through the base of the leaf sheaths - instead of one of the other two options, which is either in the centre of the leaf cluster (as in *S. cinnabarinus*) or completely separate and lateral to it (as in the common *S. multiflorus*). In fact there were two plants that were a puzzle, both with their leaf stalks sheathed together forming a false stem, one of them having a central flowering stem (as in the scanned specimen on the right) and one in which the flower stem burst out of the false stem near the base (see left picture). At the time it was decided to leave these as 'species A' and 'species B' rather than to give them formal names, pending further investigation. The further study of these had to wait many years, when our friend and colleague the Norwegian botanist Inger Nordal undertook a survey of *Haemanthus* in tropical Africa. Working with the Danish botanist Ib Fries, it was decided that the two un-named West African species (A & B) were worthy of recognition and subsequently they gave them the names *H. pseudocaulus* (= false stem) subsp. *pseudocaulus* and and *H. pseudocaulus* subsp. *prorumpens* in reference to the rupturing of the





leaf sheath by the inflorescence; it is these two that are shown above in the scanned specimens. The paper was published in the *Norwegian Journal of Botany* 19: 207-222 (1972). The two plants are confined to West Africa, subsp. *pseudocaulus* being quite widespread in Nigeria, Cameroun, Gabon and Rio Muni whereas subsp. *prorumpens* has been recorded only in Benin Province of Nigeria. They are plants of rain forest at fairly low altitudes, although subsp. *pseudocaulus* has been found to go as high up as 1400 metres.

That is not quite the end of the story since a few years later the authors decided that the primarily tropical African species of 'Haemanthus' could be distinguished from the essentially South African species, and they resurrected the old Rafinesque name of *Scadoxus* for the tropical ones. The latter species differ from the 'proper' *Haemanthus* of South Africa in having rather soft leaves (as opposed to thick and leathery), not in a distinctly distichous (i.e. in one plane) arrangement but more rosette-like; they also have a definite central vein forming a mid-rib, and arching secondary veins (in the South Africa species all the veins are equal and strictly parallel). The paper explaining the transfer of these to the genus *Scadoxus* appeared in the *Norwegian Journal of Botany* 23: 63-77 (1976). At the same time it was decided that subsp. *prorumpens* was, in fact, not worthy of recognition after all; the authors state that: "Cultivation experiments have shown that the character on which this subspecies [i.e. *prorumpens*] was based, namely the breaking through the false stem of the peduncle, is dependent upon external factors." And so, this curiosity was sunk back into *S. pseudocaulus* without trace.

We are hoping that Henning will keep us informed of the progress of his seeds and that in due course we will hear whether or not his inflorescences 'prorump' through the sheaths!

More Queries

Just in case anyone has comments, we are repeating two more of Henning Christiansen's interesting enquiries.

The first concerns *Crocus tournefortii*, that lovely autumn-flowering species from the Cyclades, Crete and the East Aegean Islands whose flowers remain wide open, even at night. Henning remarks that his field notes, made on Rhodes, observe that in one place the corms had stolons - did we know about this? The short answer is 'no'. A few Crocus species do produce stolons (if that is indeed the correct terminology for them - this needs looking into); these are slender growths from the corm that are very similar in structure to the 'runners' of *Convallaria* and *Schizostylis*, in effect

rhizomes, with scale leaves scattered along their length and a new corm forming at the tip of each. The most familiar *Crocus* to do this is *C. nudiflorus*, but they can also be seen in *C. gargaricus* subsp. *herbertii*, in Turkish examples of *C. scharojanii* (*lazicus*) and in some forms of *C. serotinus* subsp. *salzmannii*. In the case of *C. fleischeri* something rather different takes place, apparently the formation of 'droppers' like those produced by tulips; these seem to be formed with the purpose of allowing a bulb to seek a deeper situation in the soil, as well as perhaps extending the colony. As far as I can ascertain these slender growths do not have scale leaves along their length, so are not quite the same as a rhizome (which is really a modified, underground, stem). Exactly what was happening in the case of Henning's *C. tournefortii* on Rhodes - whether stolons or droppers - we cannot say, but it adds another piece of information to the already bulging file on *Crocus*!

The second 'HC' comment concerns *Asphodelus fistulosus*, one of the smaller, more slender species. Henning notes that in the book called *Bulbs* by C. Grey-Wilson and B. Mathew, this species is described as being an annual; he goes on to say that in Portugal it is definitely a perennial. Maybe it doesn't like our English winters; it is certainly very short lived and will flower from seed in the first season. Also , the root system is more fibrous without the thickened storage roots that the big robust species have. Maybe others have some views on this modest, but not unattractive, little asphodel.

Iridodictyum kopetdaghense, a further note

In the last BN (No. 30, page 1) we reported on a 'new' *Iris* species in the Reticulata group (i.e. subgenus *Hermodactyloides*). This was I. kopetdaghense, and one of the ways in which it was said to differ from *I. reticulata* was in the capsules - up to twice as long as wide, whereas in *I. reticulata* they are allegedly 2-4 times as long as wide.

Fortunately, as mentioned in out footnote, the plant we had in flower did produce a capsule (and a crop of seeds). This proved to be almost exactly 2 cm long and 1 cm wide (=2:1). The next part of the exercise was to check on *Iris reticulata* capsules. Unfortunately most people do not collect specimens of plants in fruit, so looking at herbarium specimens is a bit frustrating if you wish to measure the capsules; however, a look through the herbarium collection at Kew revealed some capsules; it is difficult to measure them accurately because of a long pointed beak at the apex, which withers away to some extent depending upon the age of the capsule when collected, but it was most interesting to see what a wide range of variation in actual size there was.

They varied from 5 cm long x 8 mm wide (6.25:1) to 4 cm long x 1 cm wide (4:1) down to tiny ones only 1.5 cm x 6 mm (2.5:1); these were all from eastern Turkey. The only ones from near where *I. kopetdaghense* grows were from Gorgan, eastern Iran. These measured 2-2.5 cm x 1-1.2 cm (about 2:1) and about 5 cm x 1.4 cm (c. 3.5:1). Of course, this very small sample does not prove anything; one would need to survey hundreds of plants to see if there is any statistical basis for the statement that the capsules have different proportions; however, I am sure there are plenty of volunteers to go and sit on mountain in Turkey or Iran and measure seed pods:all the populations, naturally. That should take a few years.

Hippeastrum Sale

Veronica Read, the NCCPG National Collection Holder of *Hippeastrum* has sent us a flyer to say that she will be selling 'bulbs of the finest cultivars of all types, sizes, colours and designs, many of which are unavailable from any other UK outlet' For a list send an A4 s.a.e. to: Veronica M. Read, 3 Park lane, South Harrow, Middlesex HA2 8NW.

Troublesome Bluebells

It seems that part of the population is trying their best to conserve bluebells, another faction is trying to eradicate them and a third element, the botanists, are totally baffled by them! Let us explain.

Given the right conditions, Bluebells can become quite weedy and we have in the past had request for advice on how to get rid of them (see BN 25:14 and 26:5). Don Lee (Harpenden) writes to us that paraquat works, eventually; a friend of ours on the Isle of Man uses the hormone total weedkiller 'Roundup' to good effect.

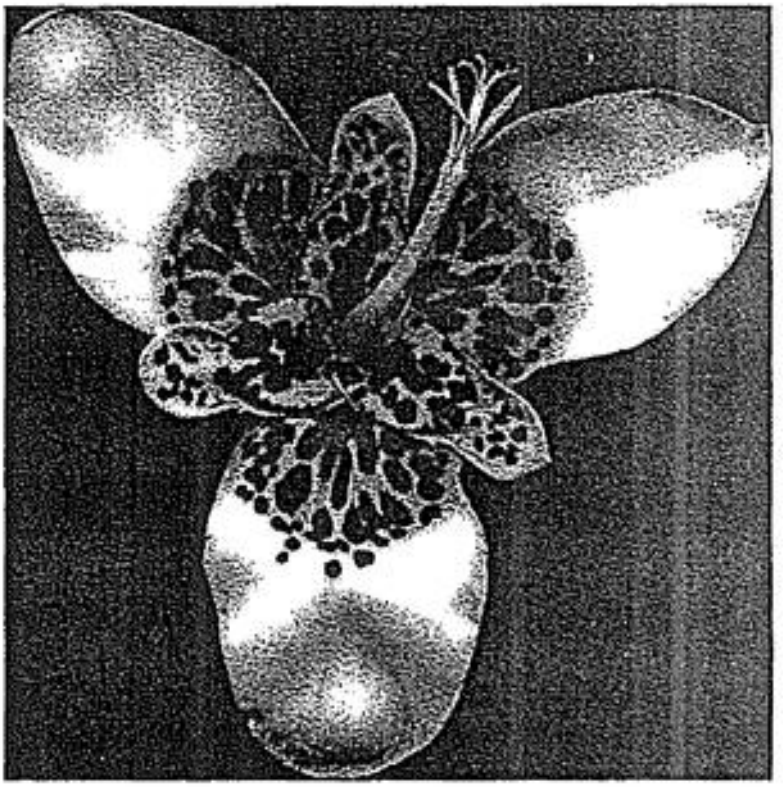
The conservationists are worried about the English bluebell, since it is allegedly being dug up and sold by the thousand (See BN 30:6); I think any threat to its long-term existence is much more likely to be through breeding with the big imported cultivars of 'Spanish Bluebells', resulting in populations of mules.

Which brings us to the third group, the botanists who are puzzled by the taxonomy of this group. There is *H. non-scripta*, the English Bluebell, *H. hispanica*, the Spanish, then the hybrids between the two (*H.* x *massartiana* - See BN20:4). Then what about the large Dutch cultivars? Are they really just horticultural selections of *H. hispanica* (?polyploids); if so, they don't actually look much like the true wild *H. hispanica*); or maybe they are inter-specific hybrids also. Then there is another one in North Africa which has been described as *H. hispanica* var. *algeriensis*, but it has certain characteristics that are more like those of *H. non-scripta*.

Such problem plants, these bluebells!

In praise of Tigridia pavonia

A wander out of the office and down the garden this morning (12 July) proved to be very pleasurable. Two flowers on what was acquired and planted as a white *Tigridia pavonia*. I was expecting the pure white, with no spotting, the form that I have grown in the past and really enjoyed, but this was every bit as beautiful. Pure white on the blades of the three outer segments and heavily blotched and spotted carmine in the 'cup'.



This Mexican species is a remarkable plant. For one thing it is one of the fastest bulbs I know for growing from seed to flower; one year I sowed seed in a slightly heated glasshouse in March and they flowered in August of the same year. And then there is the range of variation in flower colour. I really must attempt to get together a collection of them. The colour ranges from the normal 'standard' bright orange-red, strongly blotched one to yellow, with or without blotches, white with or without blotches, and some with extraordinary satiny purple colours. I used to grow one of these forms, sadly now no more, which Sally Walker (of Southwestern Native Seeds, Tucson, Arizona) sent me, bought in a drugstore. Of course, I labelled it 'Drugstorensis'!

Although it is usual to buy *Tigridia pavonia* as just that, or mixed, there are named cultivars and it has sometimes been possible to purchase them. The KAVB checklist for miscellaneous bulbs lists 'Alba' (probably the one I have flowering), 'Aurea' (deep yellow with blotches), 'Canariensis' (yellow, blotched carmine), 'Carminea' (carmine, spotted darker), 'Conchiflora' (yellow with red markings), 'Lilacea' (lilac-red(!) with blotches), 'Lutea Immaculata' (yellow with no markings), 'Rosalind' (pink, with blotches), 'Rosea' (rose with a yellow centre, blotched red, "Rose Giant' (pink without blotches), 'Speciosa' (scarlet with a yellow centre, red-blotched, 'Watkinsonii' (deep orange-yellow, streaked and spotted red) and 'Wheeleri' (vermilion red, spotted in the centre). The current edition of the *RHS Plant Finder* has none of these. Let us hope that they still exist, somewhere.

So that's what fungus gnats get up to.....

In a recent and very detailed paper in the *Botanical Journal of the Linnean Society* Vol. 133, 1: 61-100 (2000), Stefan Vogel (Vienna University)and Jochen Martens (Mainz University) report on their findings of a study into the pollination of *Arisaema* species in Nepal. In connection with this they studied the structure of the spathes, analysed the scents (in doing so identifying 26 different compounds) and captured the insect visitors. Of the insects trapped it was found that there were 16 different genera represented, comprising 47 species, 22 of which were new to science (and we complain about the state of taxonomy in plants!). Aroids are a sinister group of plants - the insects can escape from the male spathes, covered in pollen, but they become trapped inside the female spathes and, in their efforts to escape, deposit pollen in all the right places. Some *Arisaema* species that have both male and female parts in the same spathe appear to have a subtle mechanism which traps them for a while but then allows them to escape, presumably to get caught again in another spathe where they deposit pollen - what a life for a fungus gnat!

This is a very short and rough extract from a very complex paper, so if anyone wishes to learn more it is essential to obtain it and spend some time absorbing its findings carefully.

STAMPS

A recent visit to Japan by half of the BN team resulted in a gift of a splendid collection of flower stamps, mostly not monocots, but there were some: a *Crinum*, probably *C. asiaticum* (62yen), *Convallaria* (the local Japanese version of lily-of-the-valley is known as *C. keiskei*) (80yen) and a *Hemerocallis* (80yen). Although a dicot, we bulb enthusiasts tend to claim *Dicentra peregrina* (50yen) as an honorary bulb. I would like to do the same for *Glaucidium palmatum* (62yen), but maybe that is taking the classification of a bulb a bit too far! And from Uzbekistan, Janis Ruksans (see catalogue reviews, BN 30) has sent a postcard with a *Crocus alatavicus* stamp -what class!

Thanks go to all those who wrote in to the office informing us that 'Holunder-Knabenkraut' was in fact *Dactylorhiza sambucina*, the elderflower orchid.

We are so impressed by the response that we have another for you: A stamp from India with a lilac blue flowered plant labelled 'Sirol Lily'. The leaves certainly look like those of a monocot.

Sick? Consult your Crocus

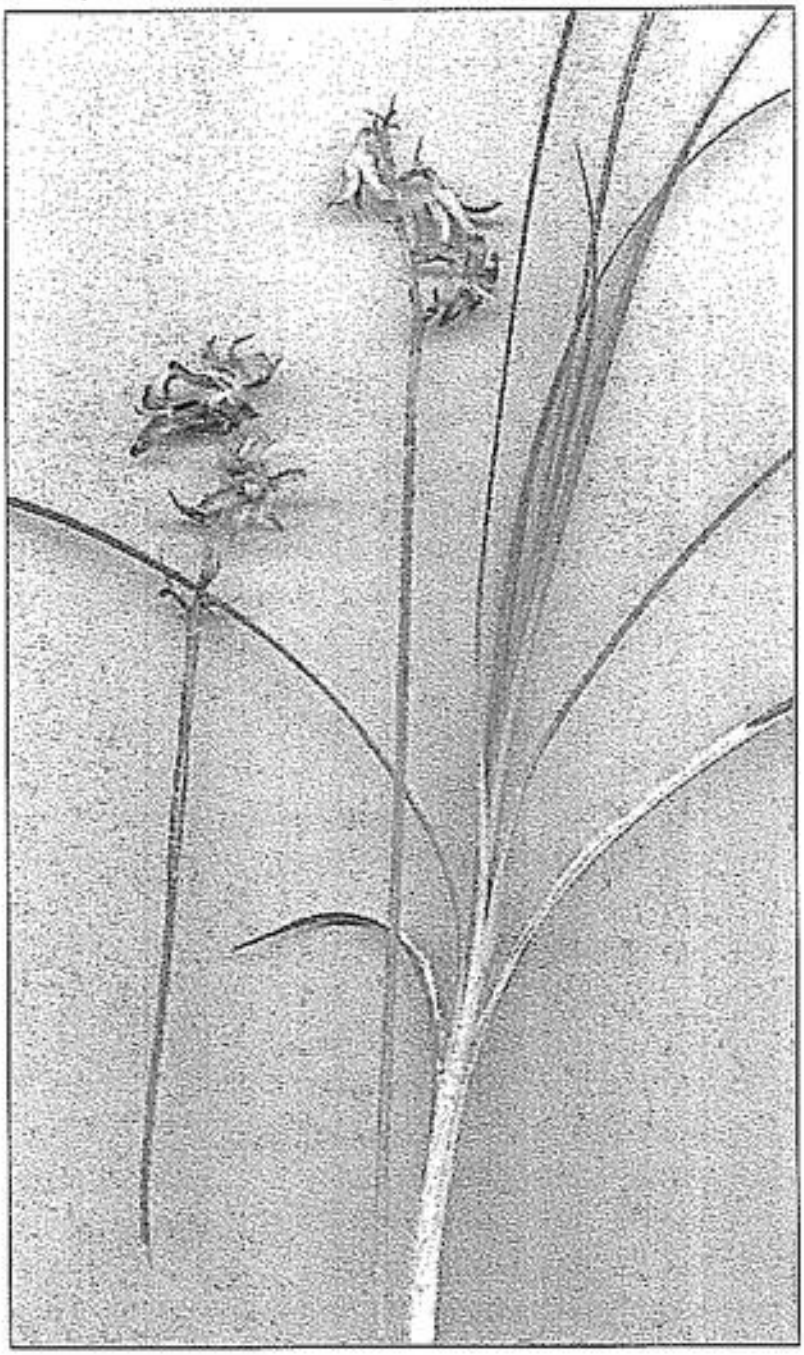
We do enjoy Wessel Marais' cryptic notes from Cazillac, France; how about this one:

"A Hedge Doctor or Wandering Quack is known as a Crocus, or one who makes his patients croak."

[From Brewer's Dictionary of Phrase & Fable, Second (revised) Edition, 1981 [found under 'Croak, To'; of course, where else?!]

Ophiopogon and Liriope

On a recent visit to Japan these excellent, tough, evergreen ground cover plants were much in evidence. On return home, one of them was in flower in our garden, and taking over in one corner; it currently is about 2 m across and its stolons are about to colonise a bed on the other side of a path. However, it is a charming little plant with short spikes of mid-purple bell shaped flowers which have a delicate fragrance and are followed by attractive blue-black berries; and it seems to grow in places where most other plants just give up, for example under our over-large bay tree.



But what is it? - It was given to us years ago and we have never really bothered to check it out.

Firstly, it is clearly an *Ophiopogon*. The main differences between this and *Liriope* are that the former has nodding bell-shaped flowers with a semi-inferior (or semi superior!) ovary, and the stamens have hardly any filaments (i.e. the anthers are very nearly sessile) and the anthers are acute at the tips and sagittate (arrow-shaped) at the base. *Liriope*, on the other hand, has flowers which are rounded and more or less upright, with a superior ovary (i.e. the ovary is wholly within the flower), and the anthers are blunt at both ends and are borne on distinct filaments. Ours appears to be *Ophiopogon japonicus*, which may have flowers coloured anything from white to mid-purple.

Another important point is that it is extremely hardy. And it <u>never</u> needs weeding!

Catalogues

The **Great Western Gladiolus Nursery** is, as its name suggests, a very specialised nursery, although some other bulbs are offered as well as *Gladiolus*. I was particularly pleased to see that some of Prof. Tom Barnard's hybrids were listed since I had assumed these to have been lost to cultivation, except for one or two of the famous ones such as 'Christabel'. There are also some of the new hybrids raised by John Pilbeam, crosses between *G. tristis* and *G. huttonii*. The *Gladiolus* are listed in two sections, those for autumn planting (i.e. the winter growers) and those for spring planting (the summer growers); the former group require frost-free conditions, so are very suitable for a cool glasshouse or lightly heated conservatory; it includes the yellow *G. acuminatus*, the very famous brick-red and green *G. alatus*, various forms of the violet *G. carinatus*, the very rare yellow *G. citrinus*, the autumn flowering *G. carmineus*,clove-scented *G. liliaceus*, fragrant *G. tristis* (this will grow outside, against a warm wall, here in Surrey) and bright red *G. stefaniae*. In the summer growing section there is less choice, including a red *G. dalenii*, the salmon *G. garnierii* and orange *G. natalensis*; *G. papilio* is absolutely hardy and increases so rapidly by stolons that it can become a nuisance, but I am intrigued by the 'red papilio', a hybrid raised by David Hills and now named after him. This is the small list, of Gladiolus species and their variants and hybrids; the nursery also publishes a Main catalogue in the autumn, containing a large selection of summer-flowering Gladiolus hybrids. **The Great Western Gladiolus Nursery, Moor's Edge, Athelney, Near Bridgwater, Somerset TA7 0SE.** Tel: 01823-698996; e-mail: gladioli@aol.com

Calling all Narcissus fans: any ideas?

Some time ago I encountered Sheila Collenette who enquired if I knew of a green-flowered *Narcissus*. Of course, the only green one that occurs naturally is the small-flowered *N. viridiflorus*, but this one was described as a large-flowered double one - and not an off-white or greenish-yellow colour but definitely green.

Intrigued, we awaited the coming of a specimen which duly arrived and to our surprise was a complete double in a clear mid-green colour; it had two flowers per stem but no scent unlike most of the multi-headed ones (for example those based on *N. tazetta* and *N. poeticus* or *N. jonquilla*). Also unlike these species and their cultivars the flowers have almost no perianth tube. In form it is similar to the bright yellow 'Pencrebar' with many extra segments almost as large as each other, rather than with a smaller double centre to the flower.

At present it is a puzzle so if anyone has ideas, please let us know!

Chris Ireland-Jones' catalogue of **Avon Bulbs** is always fun to browse through, and useful in that it includes bulbs for both autumn and spring planting. We can find an extensive selection of *Crocus* (good to see *C. laeviagtus* 'Fontenayi' back in circulation), *Colchicum*, *Narcissus*, *Tulipa*, *Allium*, *Anemone*, *Cyclamen*, *Fritillaria*, *Iris* (incl. several named forms of *I. japonica*), *Ornithogalum* (including an old favourite of mine, the green *O. pyrenaicum*, and one of the best of all, the stemless *O. lanceolatum*), etc. There is a good range of summer growers as well: the bright red *Gladiolus cardinalis* for a moist position and a collection of *Tulbaghia* spp.: *T. acutiloba*, *T. alliacea*, *T. coddii*, *T. natalensis* and *T. violacea* (in three forms), as well as one of the *T. comminsii* x *T. violacea* hybrids which are excellent plants that flower over a very long period. The catalogue costs £2.00. **Avon Bulbs, Burnt House Farm, Mid Lambrook, South Petherton, Somerset TA13 5HE.** Tel: 01460-242177. Web site (from summer 2000): www.avonbulbs.com

Phillip Clayton's list of 'Underground Lines' has some favourites as well: I am very fond of *Hyacinthella tabrizianus*, a tiny china blue one that has all but disappeared from cultivation, and white *Bellevalia romana* has its attractions for the real enthusiast. Autumnal *Colchicum troodii* & *C. corsicum* are out of the normal run of species on offer, as are *Scilla persica*, *Iris histrioides* 'Angel's Eye' and *Crocus jessoppiae*. Lots of others besides. **Roseholme Nursery, Roseholme Farm, Howsham, Market Rasen, Lincs LN7 6JZ.** Tel: 01652-678661.

Christime Skelmersdale's **Broadleigh Gardens** also have a web site this year (www.broadleighbulbs.co.uk), but I still prefer to browse the hard copy version of catalogues - long may they continue! Although the nursery grows a very wide, choice range, I always turn first to *Narcissus* since this is a specialist line at Broadleigh and there is always something of interest. The much sought-after winter-flowering 'Cedric Morris' is here and one of the most delightful of all the little *N. cyclamineus* crosses, 'Mite' - it is no larger than the species itself but the corolla segments are not swept back quite as sharply, a very graceful and easily grown plant; *N. pseudonarcissus moschatus* is another rare and beautiful plant.

Among 'the other' bulbs, it is good to see *Iris winogradowii* on offer since it is such a rare plant in the wild; although not that rare in cultivation it could so easily disappear, as did *I. histrioides* a few years ago when it was impossible to obtain. Erythroniums are deservedly popular but the range available in general commerce is very limited and repetitive. So, I welcome the sight of the eastern North Americans, *Erythronium albidum*; although it cannot compete in showiness with

the large-flowered species from the western United States (and their hybrids), it does have lovely foliage and the white flowers are delicately flushed blue on the outside. **Broadleigh Gardens, Bishops Hull, Taunton, Somerset TA4 1AE.** Tel: 01823-286231; Fax: 01823- 323646.

What Rannveig Wallis's **Buried Treasure** A4 sized list Number 5 lacks in design and pictures, it more than compensates for in contents! This is a catalogue of at least 250 'special' bulbs for the serious enthusiast, for no nursery aimed at the average gardener would bother such items as *Biarum tenuifolium* ('the first sign of it is the evil odour, therefore not a plant that one wants in the car on the way to a show') or *Arum dioscoridis* ('Has a personal odour problem'). Unusual items noted on the way through this distinguished list include *Chionodoxa forbesii* (the real one, originating from Baba Dag) with small but brilliant blue flowers, the Cretan autumnal *Colchicum cousterieri*, and the recently described *C. davisii* (see BN 23:15), a white form of *Crocus corsicus*, the Cretan *C. oreocreticus* (in the Saffron group of species), many fritillaries (which are a specialist interest of Rannveig & Bob), for example *F. acmopetala* ssp. *wendelboi*, *F. argolica*, *F. hermonis* ssp. *amana* "Yellow Form", F. japonica and the superb *F. tuntasia*. I would like to see *Hyacinthella* appearing more often in cultivation as these tiny versions of hyacinths make very attractive subjects for a bulb frame or alpine house; two are listed here, *H. glabrescens* and *H. heldreichii* (see BN 23:9). *Iris histrio* is rarity in the Reticulata group with pale blue flowers heavily blotched darker; it flowers almost too early for the open garden although surprisingly it does grow outside with us in a raised gritty bed. The many *Narcissus* species and forms include the very small trumpet daffodil *N. eugeniae*, the natural hybrid (involving *N. triandrus*) lemon-coloured *N.* x *incurvicervicus* and lots of variants on the *bulbocodium/cantabricus/romieuxii* theme. Several unusual scillas too - *S. melaina* and *S. ingridae*, two seldom-cultivated Turkish species. **Buried Treasure, Llwyn Ifan, Porthyrhyd, Carmarthen SA32 8BP.**

A Cretan Puzzle

In BN 30 (page 11) we reported on a new *Bellevalia*, with the comment that Greek botanists have decided that the yellow-flowered *Muscari macrocarpum* does not occur on Crete; it was thought to be a case of mistaken identity when seen in fruit stage, for they are very similar.

Now the plot thickens, for Graham Simpson has written in to say if *Muscari macrocarpum* does not occur on Crete, what is the little yellow *Muscari* that he has seen at the eastern end of the island?!

Clearly this needs looking into; either *M.macrocarpum* is there and the Greek botanists are wrong, or there is another yellow *Muscari*.

Although we shall not be seeing **Rupert Bowlby** with his fascinating exhibits of alliums and other bulbs at the Chelsea Flower Show any more, this does not mean that the nursery has ceased to function. The catalogue for 2000 is still a good source of onions of all shapes, sizes and colours. Also of named *Eremurus*, a genus which is undergoing something of a horticultural revival at last. It is also good to see some of the South African winter-growing 'bulbs' on offer since these are excellent and fairly easy subjects for a cool conservatory - quite a range of *Moraea*, *Lachenalia*, *Ixia*, *Tritonia*, *Sparaxis*, *Gladiolus*, etc., and quite a number of these are illustrated in colour.
Rupert Bowlby, Gatton, Reigate, Surrey RH2 0TA. Tel: 01737-642221

For those who wish to grow British native bulbs, **John Shipton and Alison Foot** are making a feature of these in their current catalogue. It is the only catalogue I know where names are given in Latin, English and Welsh, which gives a clue as to where the nursery is situated!
Although first impressions are that Britain is rather feebly endowed when it comes to native 'bulbs', there are a considerable number and these are held in great esteem; most of them are suitable for naturalising and in view of this they are offered in quantity and at very reasonable prices: *Galanthus nivalis* (common snowdrop), daffodils (Lent lily, N. *pseudonarcissus*, and the Tenby daffodil, *N. obvallaris*), *Fritillaria meleagris*, Tulipa sylvestris, several alliums, ornithogalums, our two squills, *Scilla verna* (a very attractive little plant) and *S. autumnalis*, two snowflakes, *Leucojum vernum* and *L. aestivum*, *Paris quadrifolia*, *Colchicum autumnale*, etc. The nursery offers other, non-native bulbs as well in quite a range, and some native perennials.
John Shipton Bulbs, Y Felin, Henllan Amgoed, Whitland, Carmarthenshire SA34 0SL. Tel:01994-240125; fax: 01994-241180; e-mail: bluebell@zoo.co.uk Web site: www.bluebellbulbs.co.uk

Bookends

Red Data Book of Iran by Adel Jalili and Ziba Jamzad is an interesting publication for those who are familiar with the very rich flora of Iran. It has around 8000 species and nearly a quarter of these are confined to the country (endemics). This is largely as a result of the extremes of climate, the varied topography and the country's geological history. The habitats range from the warm, moist and heavily forested lowlands of the Caspian Sea (80 ft below 'normal' sea level) to high alpine, steppe and desert conditions. It is a flora that is also under considerable threat from urbanisation, agriculture and overgrazing. The compilation and publication of such a book is thus very welcome.

The book is subtitled '*A Peliminary Survey of Endemic, Rare and Endangered Plant Species in Iran*' and so it includes many plants that are not at risk at present but might possibly be for some reason in future - such as a very limited distribution. Each species is allocated a risk rating from Endangered to Vulnerable, Lower Risk and Data Deficient. The introductory sections include information on the three main floristic regions of Iran, on endemism, and on the main causes of threat. The bulk of the text (which in English) consists of the alphabetical plant list. Each entry gives the plant name and its author, the hypothetical conservation status (giving IUCN rankings), the life form (tree, annual, bulbous perennial, etc.), its distribution (by province and nearest town), habitat and altitude. There are 68 colour plates, not many monocots but I was pleased to see *Crocus almehensis*, a species that Ann Ala first noted in eastern Iran and which Chris Brickell and I described; other plates show *Iris barnumae* ssp. *demavendica* (Iridaceae), *Hyacinthus litwinowii* and *Lilium ledebourii* (Liliaceae) and *Ungernia flava* (Amaryllidaceae).

It is published by the Research Institute of Forests and Rangelands, P.O. Box 13185-116, Tehran, Iran (Fax: 98-21-6026574). The ISBN number is 964-473-061-5 and it costs $100.

The Bulbous Plants of Liliaceae by M. V. Baranova is in Russian, so will be of limited use to those who cannot read it, but names are in Latin and there is an English summary and list of contents. I can probably do no better than to quote from these: "The primary attention is focused on the structure of the vegetative organs of the representatives of *Liliaceae*: *Lilium*, *Cardiocrinum*, *Notholirion*, *Nomocharis*, *Fritillaria*, *Erythronium*, *Tulipa*, *Gagea* and *Lloydia*.....maps of geographical distribution are compiled and the environments of bulbous plants are described. The main trends in the evolutionary transformation of the vegetative structure of bulbous Liliaceae are discussed".

The book contains many detailed drawings of all the stages in growth from seed germination to flowering, and there are colour photographs and paintings, although these are mostly of familiar species and cultivars. It is published in St. Petersburg by the Russian Academy of Sciences under the ISBN number 5-02-026121-1, but I have no idea of the price.

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