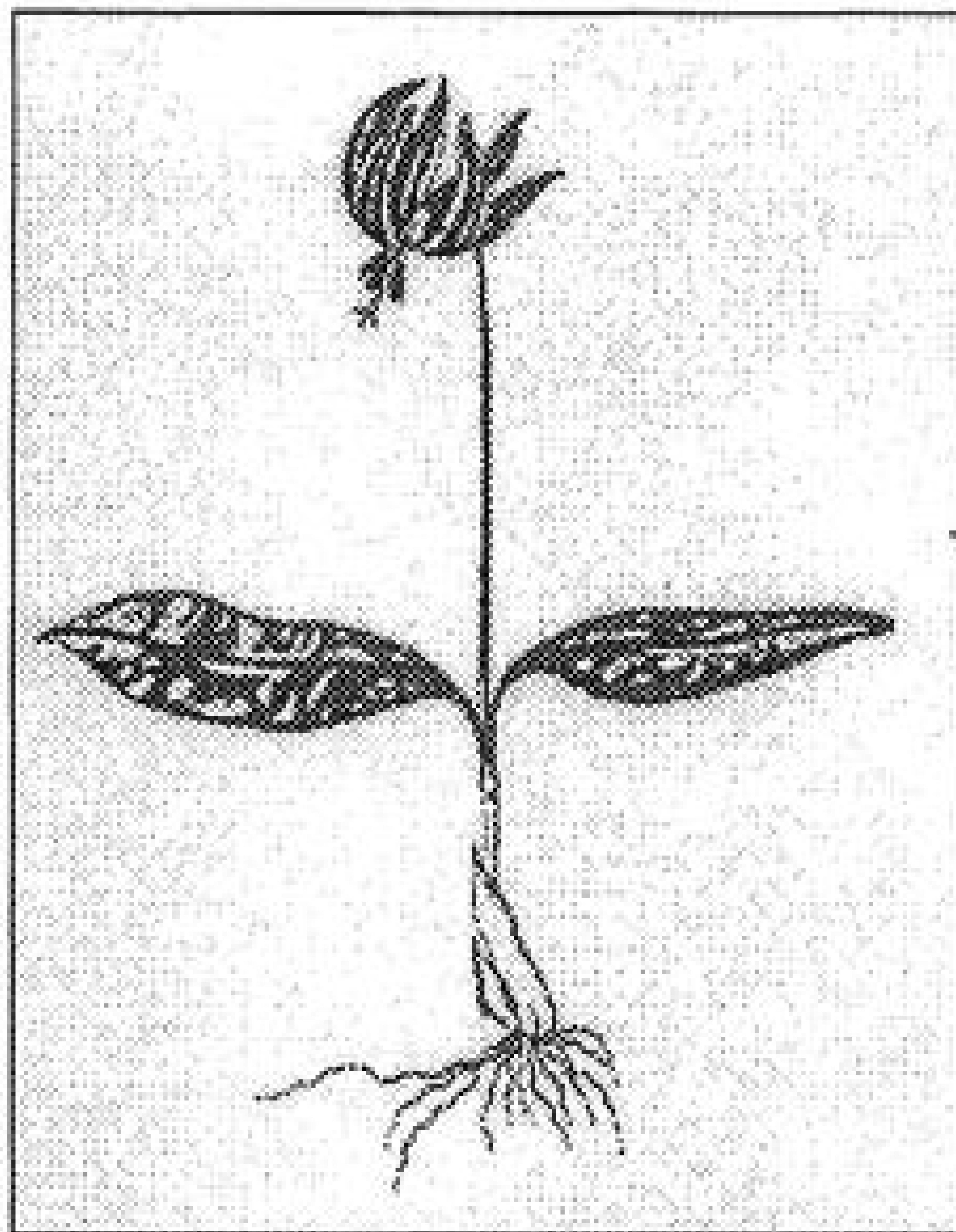


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Sandersonia and Littonia

The recent mid-summer flowering of these elegant Southern African 'bulbs' led me to wonder when they were first described and after whom they were named. Like so many of the early introductions into cultivation in Britain, both *Sandersonia* and *Littonia* were described in Curtis's Botanical Magazine (as Editor I never miss the chance of a bit of advertising - we need more subscribers!), written up by no less a person than the Kew Director, Sir William Hooker, in 1853. As to the explanation of the name, I can do no better than to repeat his comments:

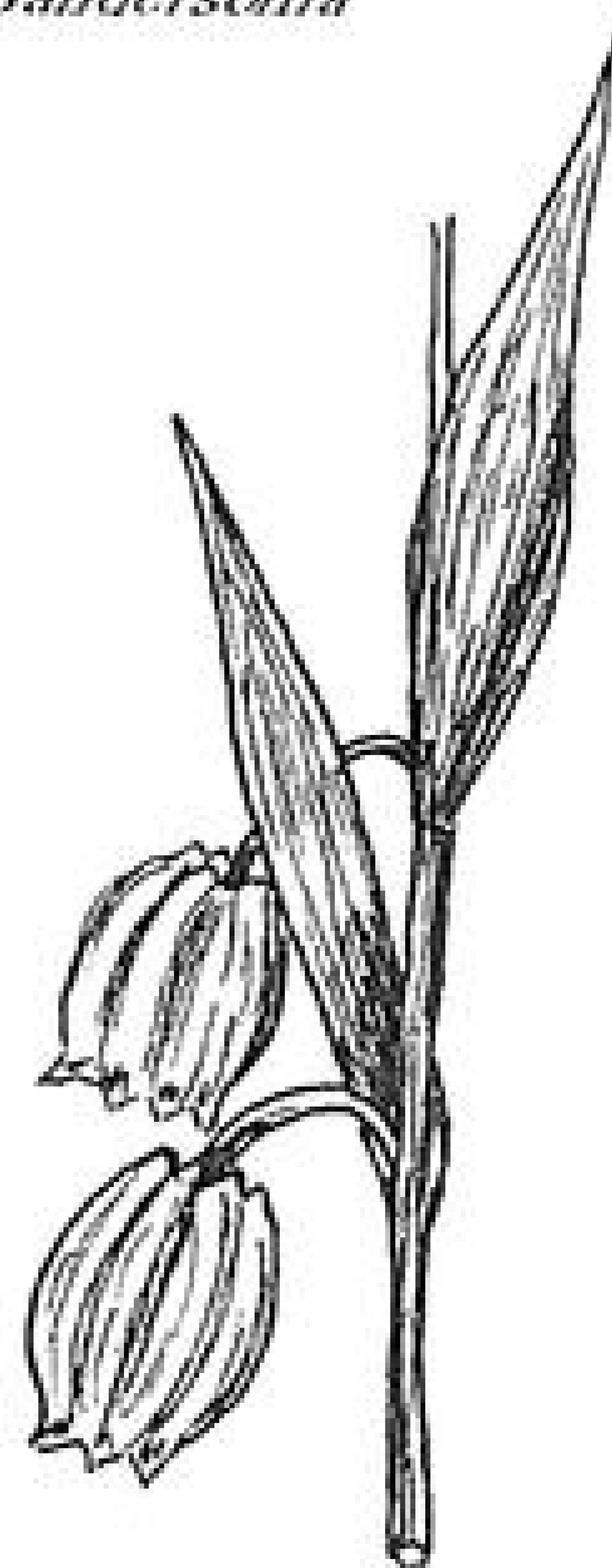
Sandersonia (Bot. Mag. Plate 4716, 1853). 'During a very interesting journey, from Port Natal to Magalisberg, undertaken by John Sanderson, Esq., in 1851, that gentleman, who is the honorary secretary of the Horticultural Society of Natal, did not fail to make not only a very considerable Hortus Siccus of the plants he met with, but he made faithful drawings on the spot, of such species as were of particular interest, and collected roots and seeds. The latter were placed at the disposal of the Society's Garden at Natal, and a portion of them was liberally shared by Mr M'Ken, who has charge of that garden, with us at Kew; while the specimens and drawings were obligingly presented to me by Mr Sanderson. Among other novelties, which we hope by-and-by to notice elsewhere, was the remarkable plant here figured-----. It was discovered on "Field's Hill near D'Urban, and on the Swartkop Hill, near Pietermaritzborg, Natal, flowering 15th November, 1851." I must leave it to others to decide whether this plant should be placed among the Liliaceae or Smilaceae, or whether the two families are really distinct. It seems in habit almost to unite the Fritillary group, which it most resembles in general appearance, with the Conval-lariae section in Smilaceae, with which it agrees in the union of the sepals into one piece. The genus is named in compliment to its discoverer.'

Littonia (Bot. Mag. Plate 4723, 1853) has a very similar history; Hooker writes: 'Two numbers back we had the pleasure of figuring a new Liliaceous plant from Natal, and naming it after its discoverer, John Sanderson, Esq., of that colony. The same gentleman detected in that colony our present plant, of which tubers were sent to the Natal Garden, and thence by Mr M'Ken to us, as a new species of *Methonica* (*Gloriosa* Linn.). True the stem

and foliage are altogether those of that genus (a native of South Africa); but the flowers are extremely different, and we have little hesitation in considering the plant to form a new genus, *Littonia*, - a tribute to the memory of the late Dr. Samuel Litton, for twenty-one years Professor of Botany in the Royal Dublin Society, a deeply learned and amiable man, and a popular lecturer. The modest appearance of this plant, in contrast with its very near ally the "*Gloriosa superba*" Linn., may further serve to indicate his unassuming and retiring disposition, which, as has been recorded by the Council of the Royal Dublin Society, "prevented his taking that rank in general society to which his acquirements entitled him."

It is generally accepted that *Sandersonia* and *Littonia* are, in fact, allied to *Gloriosa* and that they all belong in the group of genera removed from the family Liliaceae into a separate family, the Colchicaceae. For northern hemisphere gardeners who are more familiar with *Colchicum* this may at first seem a surprising alliance, but there are several features which suggest that this is a fairly natural group. Chemically, they are often poisonous plants containing a cocktail of toxic substances, one of which, colchicine, appears in several different genera. This is an alkaloid which can cause paralysis and, ultimately, death by asphyxia but, on the other hand, used with skill it is an important tool for the geneticist since it can have the effect of doubling the number chromosomes; plant breeders have thus made great use of colchicine in many different plant groups to produce, for example, tetraploid cultivars which are often more vigorous than their parents. The underground parts are very similar, solid starchy corms which may be compact and rather bottle-shaped, as in most colchicums and several other genera, or more elongate and stolon-like as in *Gloriosa*, however, there are also 'stoloniferous' colchicums and these are very similar to the longer mis-shapen corms of *Gloriosa*. Anyone growing a range of these genera, and used to handling the corms, would soon be struck by the similarities in them rather than the differences; they all, or at least all of those I have cultivated, produce new growing points from the extremities of the corms (either from the tips of the 'stolons' or, in the case of the compact type, from the 'foot' at the base of the corm) so are really very similar in structure

Sandersonia



and behaviour.

A short review of Colchicaceae

This fairly small family comprises about 16 genera (depending upon what is considered to constitute a genus!) occurring in the Old World, predominantly in Africa but also in Europe and western Asia and extending to Australia and New Zealand.

Androcymbium. Mainly from Southern Africa, extending to tropical Africa, North Africa and the Mediterranean region; about 40 species; they have Colchicum-like corms and rosettes of lanceolate leaves; the cluster of small funnel-shaped white or pinkish flowers is usually surrounded by showy leaf-like bracts which may be white, pinkish or purplish, often conspicuously veined. The species from the Mediterranean and the south-west Cape are winter-growers, flowering in winter-spring and dormant in summer, while those from tropical Africa and the eastern Cape can be treated as summer growers and are dried off for the winter. Frost-free cultivation seems to be necessary for all species, with plenty of light to prevent etiolation. Corms of the summer-dormant ones sometimes stay dormant for several years; if this happens, try a good summer baking, then in early autumn crack open the tough outer corm tunics and give a good soaking.

Baeometra. South Africa, 1 species, *B. uniflora*, it has channelled leaves up the stem and, in early spring, a raceme of starry yellow flowers, suffused red on the outside. It is a winter grower and needs just frost-free conditions, so try pot cultivation in a slightly heated glasshouse, drying off for the summer months when growth has finished in late spring.

Bulbocodium (sometimes included in *Colchicum*). Possibly two species (*B. vernum* & *B. versicolor* (*ruthenicum*)) from southern, central and eastern Europe, somewhat similar to *Colchicum*, with erect purple funnel-shaped flowers in spring. Needs a well-drained sunny position where the corms will dry out in summer; also suitable for pots in an unheated frame or glasshouse.

Burchardia. Australia, 5 species, mainly in Western Australia; they have umbels of white or pink flowers (*B. monantha* has solitary flowers). I have not tried to cultivate them but would expect them to be winter growers, so try growing them like Mediterranean and South-west Cape species, just frost-free with plenty of light and air flow. Unlike most of the Colchicaceae burchardias do not contain colchicine.

Camptorrhiza. 1 species in South Africa (*C. strumosa*) and 1 in India (*C. indica*, see BN 5:1). I have not tried either of them but suggest treating *C.*

indica (this has pink flowers like a small *Colchicum* but with reflexed segments) as a summer grower, drying off the corms in winter; *C. strumosa* is probably a winter grower, summer-dormant; it has insignificant flowers.

Colchicum. A large genus of around 45-60 species from Europe, west & central Asia, North Africa & Arabian Peninsula; they have wineglass- to widely funnel-shaped flowers in autumn or spring, white or in shades of lilac-pink to purple (& one yellow-flowered species, *C. luteum*), sometimes chequered in light & dark patterns; most of the autumnal species flower without leaves. Colchicums are all autumn-winter-spring growing; most of the larger-flowered autumnal ones do well in ordinary reasonably well drained garden soil in a sunny position or partial shade. The small-flowered species such as *C. cupanii*, *C. hungaricum*, *C. triphyllum*, *C. cretense*, *C. luteum* and *C. kesselringii* are best in a bulb frame or in pots in an unheated glasshouse as they do not stand up well to bad weather outdoors and their corms need to be dried out in summer. I find that some of the low-altitude Mediterranean species are not very hardy and their corms are usually killed if the frost penetrates to more than the surface layer. *C. variegatum* and *C. macrophyllum* need a hot sunny position.

Gloriosa. Tropical Africa, warmer regions of Southern Africa, Madagascar, India, tropical South-east Asia. 1 to several species, depending upon taxonomic opinion; some say all variants are forms of *G. superba*. Most variants have tall leafy stems, the leaves with tendrils at their tips and flowers in the upper axils; the latter are pendent, large and showy, in shades of red, orange, yellow and purple, and have sharply reflexed wavy petals. *G. minor* is a non-climbing dwarf form only 15-25 cm tall with very narrow leaves. Gloriosas are summer-growers, dormant in winter and need to be kept fairly dry and frost free during this time. In cool temperate areas they are ideal conservatory plants for the summer, grown in a deep container of well-drained soil and given a trellis for support.

Hexacyrtis. Namibia (S. W. Africa), 1 species, *H. dickiana*, it is related, and is somewhat similar to, *Iphigenia*. This curiosity is almost certainly a winter grower and will be frost-tender, so I suggest treating in the same way as low altitude Mediterranean and South-western Cape bulbs. A real addict's plant!

Iphigenia. Africa, Madagascar, Australia, tropical Asia, New Zealand, about 13 species; most have racemes or cymes of small 'spidery' flowers with very narrow green, brown or reddish segments); those from temperate areas should probably be treated as winter growers, as for South-West Cape and Mediterranean bulbs, but those from the more tropical regions might be better tried as summer growers. I have to say that perhaps the

most attractive thing about this genus is the name, commemorating the daughter of Agamemnon and Clytemnestra; Iphigenia was given by Agamemnon as a sacrifice to Artemis when he had upset the goddess by killing a hart (well, that is one of the accounts!); exactly what all that has to do with our modest little plant I cannot imagine, so I must look into in greater depth when time allows!

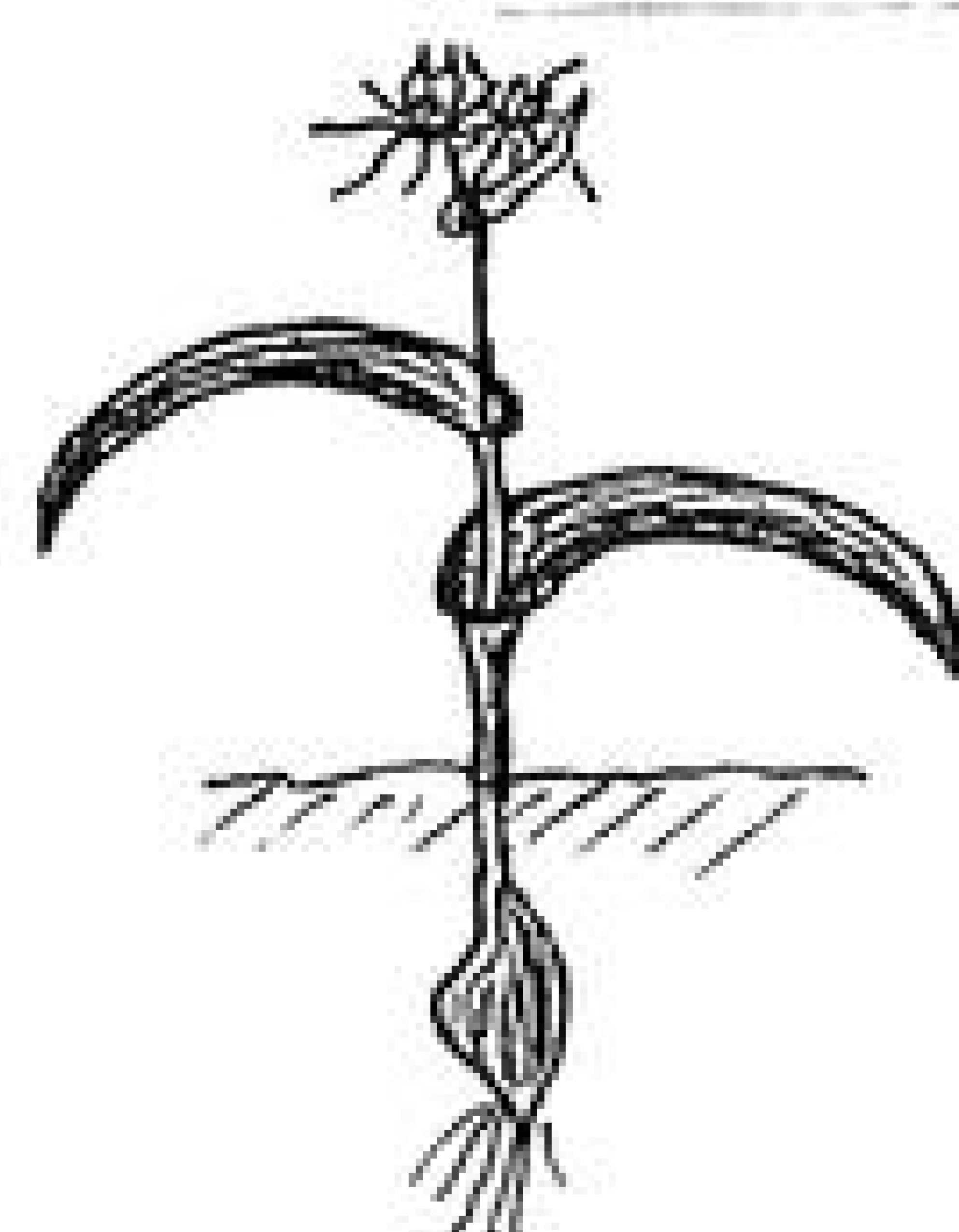
Littonia. South Africa, tropical Africa and Arabia, about 6-7 species; these very attractive 'bulbs' are similar to *Gloriosa* in the mis-shapen corms and growth habit but have orange flowers which are pendent and bell-shaped. I have tried only *L. modesta* and cultivation for this is exactly the same as for *Gloriosa*; in temperate countries like Britain it makes a superb conservatory subject for the summer months.

Merendera. (sometimes included in *Colchicum*) A small genus of perhaps about 10 species from southern Europe and western to central Asia, related and similar to *Colchicum*, with erect funnel-shaped white, pink or purple flowers in autumn or spring; they differ from 'ordinary' colchicums in having no tube to the flower, the six segments being quite separate from each other, often allowing the flower to fall apart and look untidy. Like *Colchicum* species they are winter-growing and do well in a well-drained sandy soil in full sun; they are rather small so are better in raised beds, the rock garden, bulb frame or in pots. The corms need to be warm and dry in summer; some species, especially *M. filifolia* in my experience, have a tendency to stay dormant for several seasons without producing leaves or flowers - try giving them a summer baking, then remove or split the outer hard blackish corm tunics in late summer, then replant or repot and water profusely.

Neodregea. South Africa, 1 species, *N. glassii* from the South-west Cape. It is a tiny winter-growing plant, only about 1-5cm in height with a *Colchicum*-like corm and two narrow leaves, curving over towards the ground; the 1-2 minute flowers are upright with the six segments so narrow as to be almost bristle-like. To those who think that small is beautiful, this will be gorgeous!

Onixotis (Dipidax). South Africa, about 4 species; only one, *O. triquetra*, is cultivated to any extent, and that is rarely seen; small corms produce erect stems with narrowly lance-shaped basal and stem leaves and spikes of starry white, pink or purplish flowers which have a darker eye in their centres. They are winter growers

Neodregea

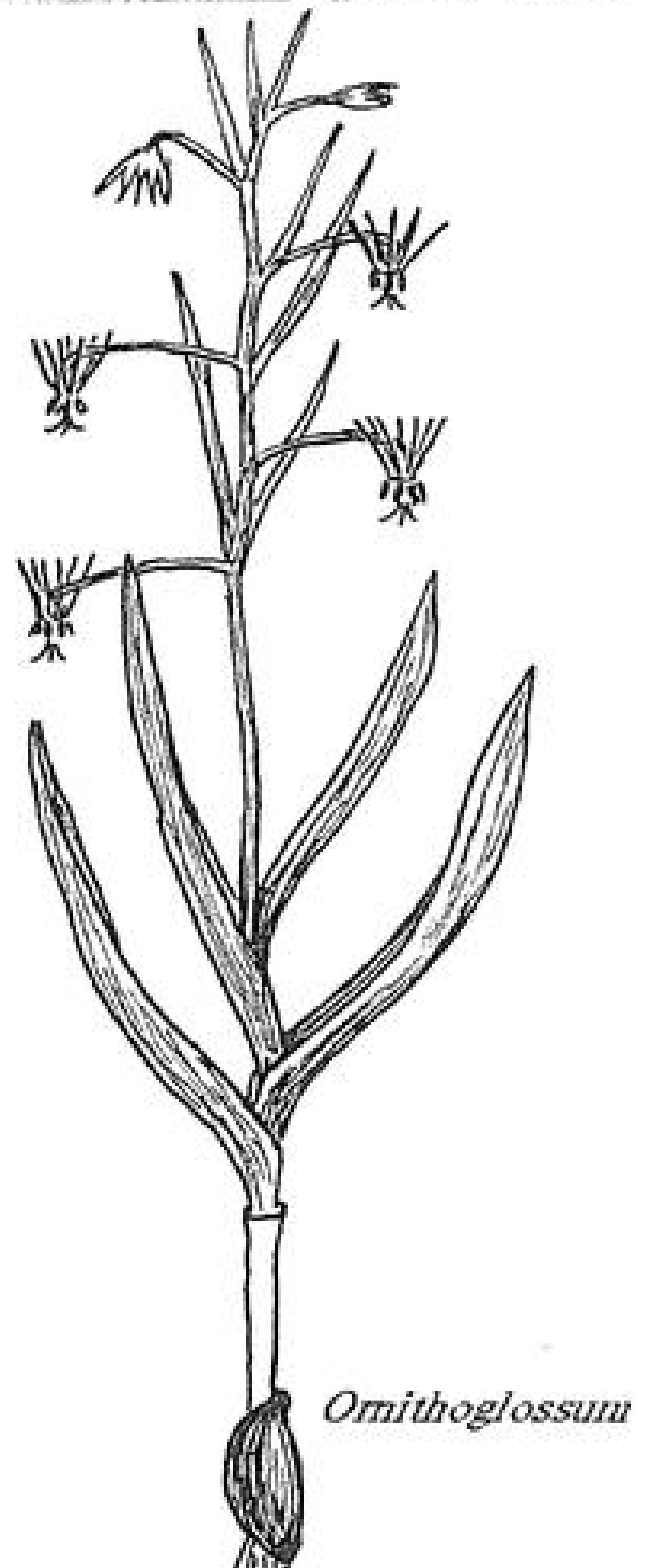


but are not hardy; in mild areas they can be grown outside but in cold winter countries such as Britain they need frost-free conditions under glass; a sandy-peaty soil is recommended, with plenty of water in the growing season (even standing in a saucer of water), then drier in summer whilst dormant.

Ornithoglossum. South Africa and south tropical Africa, about 8 species; the only species of which I have any knowledge is *O. viride* which has a *Colchicum*-like corm and a cluster of channelled leaves at the base, again very *Colchicum*-like, and a short stem carrying a raceme of several small green, brownish or purplish flowers which are pendent but have sharply reflexed segments; this is widespread in Southern Africa, occurring in winter-rainfall and summer-rainfall areas, so cultivation may well depend upon the origin of particular plants; I have not had the opportunity to try growing any of them.

Sandersonia. South Africa; 1 species, *S. aurantiaca*, a beautiful summer grower which has tall leafy stems with pendent orange urn-shaped flowers in the upper axils. Cultivation is the same as for *Gloriosa*.

Wurmbea (Anguillaria). South Africa, tropical Africa and Australia; about 40 species which have small corms, not unlike those of a *Colchicum*, they have slender channelled leaves and loose to dense spikes of starry to funnel-shaped flowers, white, green, yellowish, pink, deep reddish-brown or blackish, sometimes with darker nectaries, and some are fragrant. Wurmbeas are little-cultivated and I have not had much experience with them; those from temperate latitudes could be tried as winter growers, starting the corms into growth after a warm (but not dry & baked) summer dormancy; a sandy soil mix would probably be best, but with plenty of moisture in the growing season since they inhabit seasonally damp places; those from more tropical latitudes might be better tried as summer growers, but experimentation is



needed. Their small size means that they are best suited to pots, although in mild winter regions there is no reason why they should not be grown outside.

The position of the Australian genera *Kuntheria* and *Schelhammera* is in some doubt if the Liliaceae is broken up into several families; some suggest affinity with Colchicaceae, others with Convallariaceae, Uvulariaceae (if this is accepted at all!) or Smilacaceae.

Hemerocallis hongdoensis

This is a newly discovered species, found growing on the small remote island of Hong off the south-west coast of Korea, and described by Myong Gi Chung and Soon Suk Kang in *Novon* 4,4:94-97 (1994). It is said to belong to the section *Fulvae* and is most closely related to *H. aurantiaca* but differs in its compact underground parts lacking a rhizome, in the deciduous leaves, in having 1-2 ovate-lanceolate bracts 1.2-3.5 cm long, a 2- or 3-branched inflorescence which is 3-9 cm long, a stouter perianth tube and orange-yellow flowers lacking any red tinge; the flowering period in the wild is also noted as being slightly different, July-August for *H. hongdoensis*, May-July for *H. aurantiaca*. *Hemerocallis* is a confusing genus, many of the species being superficially very similar, but for those enthusiasts who wish to go into this in more detail there is a very full description of this new species, accompanied by drawings; the authors acknowledge, however, that the Korean representatives are still not well understood.

A New Arisaema

This is one of the 'in' genera of the 1990s and enthusiasts will be pleased to see another added to list of those to seek, although it sounds as if this one is a fairly rare plant in the wild so it may take a considerable time for propagated tubers to become available; at present it is not known to be in cultivation at all. *Arisaema sahyadricum* is an Indian species, described in *Willdenowia* 23: 177-179 (1993) by S.R.Yadav, K.S.Patil and M.P.Bachulkar from the Western Ghats region of Maharashtra. It is described as having a solitary leaf on a 14-35 cm stalk, consisting of 3-8 leaflets each 8-21 cm long and 3-10 cm wide and long-tapered at the apex. The spathe is borne on a stalk shorter than that of the leaf and is 7-13 cm long, reddish-purple striped white, the tubular part up to 4 cm long and the hooded portion 4.5-9 cm long with a pointed apex. In many species there is a pencil- or club-like spadix appendage protruding from the mouth of the spathe but, in the case of *A. sahyadricum*, it is short and thick and carried within the spathe; it varies in colour from white to purple. The new species is said to be related

to *A. murrayi* but differs in the red-purple spathe and the non-protruding short thick appendage. Cultivation details are, of course, unknown at present. It occurs at 800-1200 metres and flowers in May-June in the wild.

A New Fritillaria from Turkey

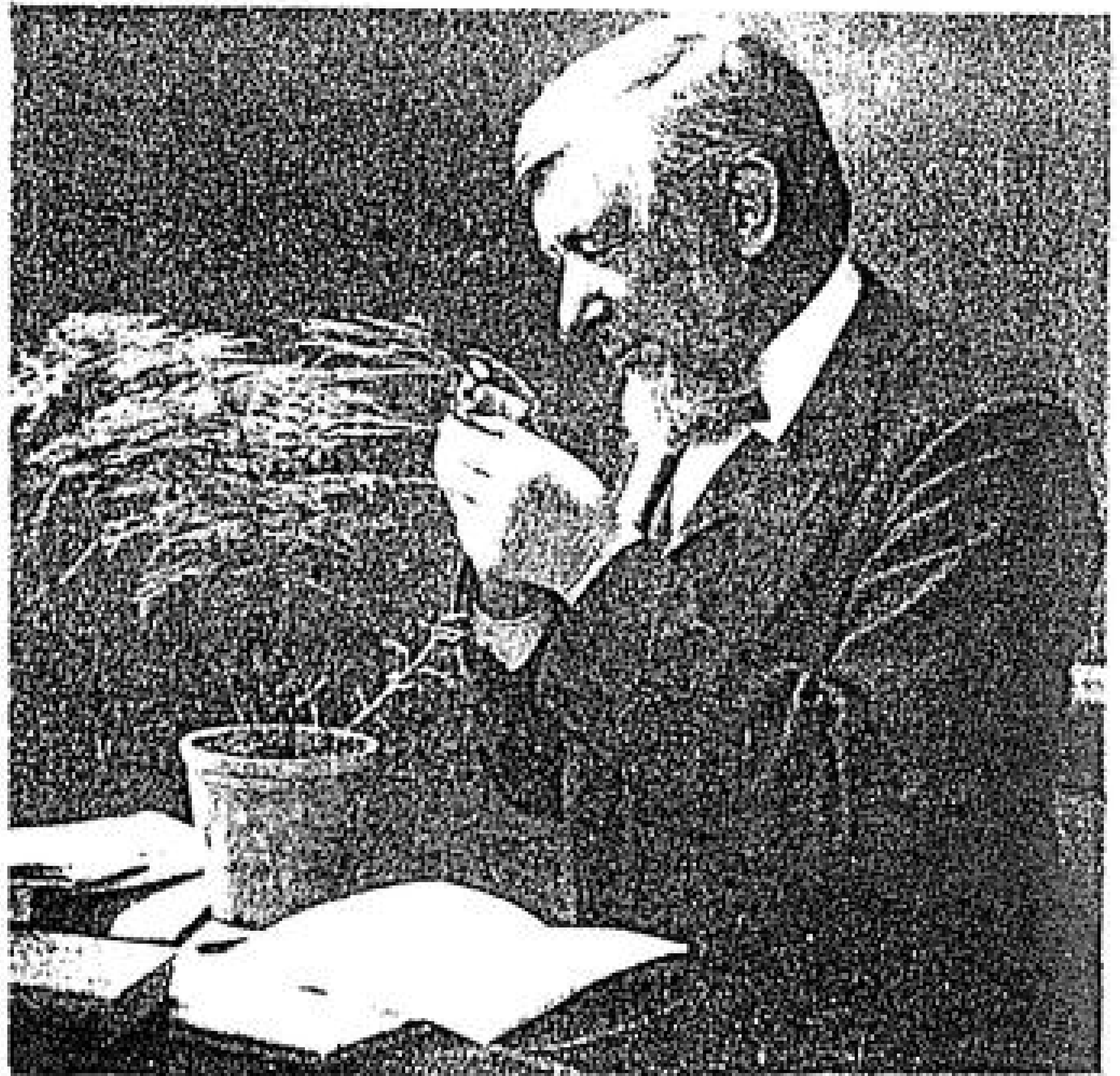
The small yellow and green fritillaries in Greece and western Turkey are a puzzling group, at one time clarified by Martyn Rix (*Flora of Turkey* 8: 284-302, 1984) but, in the light of more recent collections, now in need of reassessment; we hear that Martyn's book on the subject is not that far away, and this is very good news. In the meantime, another subspecies has been described, this time of *F. sibthorpiana*. The new one is *F. sibthorpiana* subsp. *enginii*, named after the Turkish botanist Engin Özhatay by Neriman Özhatay (Engin's botanist wife) and Andrew Byfield, Project Officer of the 'Indigenous Propagation Project' organised by the Turkish Society for the Protection of Nature and the Fauna and Flora Preservation Society. The new subspecies differs from subsp. *sibthorpiana* in having dull yellow to yellowish-green flowers, usually 4 rather shiny green leaves, the lowest two of which are broadly lance-shaped and rounded at the tips and the upper two linear-lanceolate; in subsp. *sibthorpiana* the flowers are bright canary yellow, there are usually two glaucous grey-green leaves per plant, the lowest one broadly lanceolate with a pointed apex and the upper one rather wider than in *enginii*, although still narrowly lanceolate. A slight habitat and a distribution difference is also noted, subsp. *enginii* being a plant of shale, serpentine and limestone formations at 50-1450 metres to the north-east of Marmaris, whereas subsp. *sibthorpiana* is restricted to limestone, from sea level to 450 metres on the peninsulas south-west of Marmaris. It is noted by the authors of the paper, who have surveyed the areas, that both subspecies occur in colonies of less than 50 plants, so in view of their small numbers are at risk from collectors, and of course from any future development in the area. The full paper by Dr N. Özhatay and A. Byfield appears in *The Karaca Arboretum Magazine* 3,1: 7-16 (1995).

Personalities in the bulb world -3

It is quite likely that John Gilbert Baker (1834-1920) named, and had named after him, more petaloid monocots than any other person. He was born at Guisborough, Yorkshire and had an early interest in natural history; at 14 he won a prize for the best collection of botanical specimens and was appointed curator of the school herbarium [if schools had herbaria, I'm not surprised that *Cypripedium calceolus* was soon nearing extinction in Britain! - BM]. At 15 he was already contributing plant records to the *Phytologist* and by 20 he had issued a supplementary volume to the *Flora*

of Yorkshire, a general interest in the natural world around him led to a scholarly series of studies on the local botany, geology and climate of North Yorkshire.

Although those interested in bulbs are likely to associate Baker with monocots, he was also deeply involved with ferns and, when he joined the staff at Kew in 1866 as first assistant in the Herbarium, his initial job was to complete the 'Synopsis Filicum' started by Sir William Hooker; he also compiled the fern volume of Martius's great *Flora Brasiliensis*, a handbook of the fern allies, an account of the ferns of the Seychelles and many other works on the subject. His enthusiasm and capacity for the study



of plants seems to have known no bounds, for he soon became a leading authority on other quite unrelated plant groups. For example, his interest in and knowledge of roses was almost as extensive as that of ferns; he published a review of the British species of *Rosa* in 1864 and a monograph in 1869, a revised classification of the whole genus in 1902 and he wrote the botanical descriptions for Willmott's monograph of the genus *Rosa* (1910-1914); he also prepared a monograph of the tuberous members of the Solanaceae and accounts of Brazilian Compositae for *Flora Brasiliensis*. In the world of bulbs we shall remember him for his researches into the families Liliaceae (*Monograph of the Liliaceae* 1870-1880), Hypoxidaceae (*Monograph of the Hypoxidaceae*, 1878), Amaryllidaceae (*Handbook of the Amaryllideae*, 1885), Bromeliaceae (*Handbook of the Bromeliaceae*, 1889), Iridaceae (*Systema Iridacearum*, 1887; *Handbook of the Irideae*, 1892) and

Musaceae (*A Synopsis of the Museae*, 1893). He contributed many of the monocot accounts to the *Flora of Tropical Africa* and *Flora Capensis*, compiled at a time when many plants were being collected in Africa in previously unexplored areas so an enormous number of them were newly discovered and were subsequently named & described by him.

As well as his research work he lectured to the young gardeners at Kew and supplemented his meagre earnings by lecturing in botany at the London Hospital Medical School; later he was appointed by the Society of Apothecaries to the lectureship on botany at the Chelsea Physic Garden. In recognition of his work he received many commendations: Vice-president of the Linnean Society, Fellow of the Royal Society, President of the Yorkshire Naturalists' Union, Honorary Life-fellow of the R.H.S., Honorary Fellow of the Botanical Society of Edinburgh, Corresponding Member of the Massachusetts Horticultural Society and of the New York Academy of Sciences, Honorary Member of the Royal Irish Academy; in 1897 the Royal Horticultural Society bestowed upon him the V.M.H. and in 1899 he received a Gold Medal from the Linnean Society, their highest accolade. The obituary notice in the Proceedings of the Royal Society ends with : 'those who worked with or were taught by Baker will cherish the recollection of one of the kindest and best of men', while another similar notice by one of his former students comments that 'He has always been a popular lecturer with the students on account of his clear and lucid style-----'. The tyro was not repelled but attracted to the study of botany----while those who might have been floundering amongst the intricacies of the subject have been strengthened and encouraged to go forward.'

J.G.Baker's name is commemorated in many species, including, for example, several bulbous plants: *Iris bakeriana*, *Allium bakeri* and *Crinum bakeri* ; he described an enormous number. A few familiar examples of species first named and described by him are: *Crocus aleppicus*, *Iris danfordiae*, *I. aitchisonii*, *I. palaestina*, *I. aucheri*, *I. goniocarpa*, *I. rossii* and *I. atrofusca*. Many African monocots were also described by him; opening at random a few pages of vol. 7 of the *Flora of Tropical Africa* reveals: *Romulea camerooniana*, *Ferraria bechuanica*, *F. welwitschii*, *Gladiolus pauciflorus*, *G. newii*, *G. multiflorus*, *Crinum tanganyikense*, *C. sanderianum*, *C. fimbriatulum*, *Lapeirousia sandersonii*, *L. welwitschii*, *L. bainesii* and *L. fragrans* ; I have no doubt that a check on the c. 300 monocot pages written by Baker in 'FTA' would reveal much the same sort of high percentage as did these few.

The Plant of Tintin

Intrigued by an article in the journal of the Geneva Museum 332:7-10(1994) entitled 'La Plante de Tintin' by André Charpin, I decided to delve further and found it to be of monocot interest. The plant in question is *Hieronymiella tintinensis*, a rather daffodil-like member of the Amaryllidaceae. This is a short but interesting article giving phytogeographical details of the area where it occurs, in the province of Salta in north-western Argentina. According to the author, *H. tintinensis*, which is named after a peak known as the Cerro Tin-Tin, occurs in the 'prepuna', a zone between 2000 and 3500 metres which has a dry, warm climate with occasional rain in summer; tall cacti of the genus *Trichocereus* are dominant and dry-country bromeliads also occur. This spectacular amaryllid has a large bulb some 8 cm or more in diameter, a tuft of about 8 strap-shaped channelled leaves and a 20-30 cm scape (leafless flower stem) carrying up to 7 large fragrant yellow flowers, each 5.5-6.5 cm in length; these have six perianth segments and a tubular corona so are very like *Narcissus* in general appearance.

The genus *Hieronymiella* was named in 1890 after the German botanist Georg Hans Emmo Wolfgang Hieronymus (1846-1921) by his colleague F.A. Pax in recognition of the fact that he was one of the first botanical explorers in the region. For long the genus was considered to be monotypic (i.e. consisting of one species, *H. clidanthoides*) but *H. tintinensis* was added in 1967 by Armando T Hunziker; in 1975 he published a revision in which he recognised six species:

H. clidanthoides, *H. tintinensis*, *H. speciosa*, *H. pamiana* (*Eustephia pamiana*), *H. marginata* and *H. latifolia* (*Eustephiopsis latifolia*).

I am hopeful that the large bulb given to me by Patrick O'Farrell two or three years ago will turn out



Hieronymiella tintinensis

to be *H. tintinensis* when it flowers, but I have not yet found a really reliable way of getting bulbs from these very dry areas to flower; it was 18 months before this bulb produced even a leaf and I imagine that in the wild they can if necessary lie underground for years waiting for the right conditions. When having difficulty with flowering such bulbs, I usually try 'Plan A', which is 2-3 months in the airing cupboard whilst dormant; it certainly worked earlier this year with that other lovely yellow South American amaryllid, *Paramongaia weberbaueri*.

Narcissus bulb fly

A much worse problem than shy flowering in amaryllids is attack by narcissus bulb flies which seem to love picking out the really special amaryllids, not just the garden daffodils; growers have battled with this pest for decades, probably since the 19th century, but it appears that the flies are on the increase, if a news item in the national press is accurate. It is said that narcissus crops are now seriously threatened, one grower estimating that 14 per cent of his crop has been totally ruined and a further 11 per cent found to contain the grubs - the larvae which eat out the centre of the bulbs. The increase is blamed on the ban imposed on the use of the effective pesticide Aldrin in 1989, but hotter dryer spring-summer weather in Britain may also be encouraging the bulb flies; this is the time when the flies, which resemble small bumble bees, are active, laying their eggs on the the necks of the bulbs or on the soil nearby. Research is being carried out by Ministry of Agriculture scientists into improved methods of control; it is reported that they have noticed that the flies avoid ground which has been burnt over but we are now encouraged to avoid having bonfires and burning over old crops to cut down on pollution, so that may be a non-starter. Anyway, I do not intend to set fire to my *Hieronymiella* just yet.

Nerine marincowitzii

Never heard of it, I hear the cry! That is because it has only just been described as a new species by Dr D.A. Snijman (in *Novon* vol.5, 1995). This species, from Cape Province of South Africa, is named after C.P. Marincowitz who lives on the farm in the Karoo where it is known from only one population of a few hundred specimens. Deirdre Snijman describes it as growing on 'exposed seasonal washes' in a clay soil covered with slate chippings, flowering at the end of the autumn rainy season, followed by the leaves in spring; these grow until the summer drought causes them to die back. *Nerine marincowitzii* has 5-6 narrowly strap-shaped leaves 3-4 mm wide; the umbel is borne on a wavy ('sigmoid') stem and is 10-16 cm across, carrying 20-40 flowers which are irregular in shape, the six pink

segments all curving upwards; the six stamens protrude slightly downwards ('declinate') towards the lower side of the flower and have wine-red anthers, and the ovary is also dark wine-red; the individual flowers appear to be about 2.5-3.5 cm across. An unusual characteristic is that this is a sort of tumbleweed, the stem breaking off at ground level after flowering and the whole inflorescence (or rather, infrutescence) then being dispersed by the wind. All nerines are worth growing so it is to be hoped that this will be propagated and distributed by one of the South African botanical institutes, societies or nurseries in due course.

New Spider Lily from Florida

Florida seems an unlikely place for new species to turn up, but Gerald L. Smith and Melanie Durst have just described a striking *Hymenocallis*, named *H. godfreyi* after Professor Robert K. Godfrey of the Florida State University who first drew their attention to the existence of this plant. It occurs in the Florida Panhandle in marshland at the confluence of the St Marks and Wakulla Rivers. The authors note that the habitat is a 'brackish marsh', rather different from the widespread *H. rotata* which inhabits the banks of springs and rivers; apparently there is 'an amazing display' of the new species in years when the marsh has been burned over - yet another example of bulbs responding to the influence of fire. Smith and Darst have studied the plant in detail and conclude that it differs from *H. rotata* in details of the bulb, leaves, flowers, capsules, habitat and flowering time.

H. godfreyi has a small bulb only 2.5-3.5 cm wide (much larger in *H. rotata*) which is attached to a rhizome; the yellow-green leaves are 1-2.5 cm wide (4-7 cm wide and deep green in *H. rotata*); the rather shorter flower stem (20-30 cm long) carries only 2 flowers (2-4 in *H. rotata*); the cup is funnel-shaped, 3-4.5 cm long and about 5 cm wide (almost flat, or 'rotate', 4.5-5.5 cm long and nearly 8 cm wide in *H. rotata*); other differences, for example the tothing on the edge of the cup and the length of the perianth tube, are also noted. Flowering time of *H. godfreyi* is in March, continuing to May whereas *H. rotata* blooms in June or July. I find *Hymenocallis* in general rather shy flowering in cultivation so, in view of the comments about the spectacular flowering of this new species after a winter burn-over, it might be worth trying the effect of smoke on the dormant bulbs of other species. The full article, and drawings, appears in *Novon* 4,4:396-399 (1994).

Requests

Fred Feigel, a *Crocus* enthusiast from Dresden, is seeking several

subspecies of *C. biflorus*: *stridii*, *artvinensis*, *wattiiorum* (this is not yet published as valid name but will be shortly) and *albocoronatus* in exchange for other subspecies such as *isauricus*, *pulchricolor*, *punctatus*, *nubigenus* and *crewei*, and other species of *Crocus*. If you can help, please contact Fred direct at: Prof.-Ricker-Str. 8, 01277 Dresden, Germany.

From the Postbag

Jeff Irons from the Wirrall, Cheshire has written in with some notes as a follow-up to the item on smoke treatment of seeds (BN 10:9) [there are also articles on the subject in *The Garden* 120, July 1995 and in *Pacific Horticulture* 56, Spring 1995]. He points out: that (1) there are approximately 2000 chemicals involved in bush fire smoke and investigations are in progress to try to discover which are the effective initiators of seed germination. (2) As long ago as 1967 workers in America found that hemicelluloses in an aqueous extract of charcoal wood initiated germination of chaparral vegetation seeds. (3) That Norman Deno's work is well known but there has been little investigation of southern hemisphere seeds; many people suspect that quite a number need light to germinate; the well known prolific germination of *Blandfordia cunninghamii* after a bush fire is a consequence of increased light, so why not try irradiating seeds with U.V.?

This is an interesting and sizeable topic, scarcely touched upon by amateur enthusiasts at present but clearly one which could lend itself to small-scale experimentation; not necessarily working out the complex reasons for certain behaviour but in finding out what works at a practical level.

A note recently received from Dr A.F.Hayward, Editor of the R.H.S. Lily Group, reminded me of how difficult it is to be original; I well remember some years ago flowering a very rare bulb which I was convinced would never have been seen before in cultivation. I smugly presented it to the then Editor of *Curtis's Botanical Magazine* with a view to having it illustrated and written up. 'Sorry, it was done in the nineteenth century and we don't repeat things' was the reply! Tony Hayward's note refers to an item on the pollination of *Fritillaria imperialis* by blue tits: 'the first record of bird pollination in Europe' (from *The New Plantsman* 1, part 4 (Dec. 1994), reported in BN 10:7). He has sent us copies of two articles referring to this, one in the Lily Group Newsletter of October 1989 in which he writes that he had 'some years earlier' observed this phenomenon in a garden in Suffolk. The other is an article in *The New Scientist* of 9 September 1989, referring to another paper [*Oikos* 55: 335-340 (1989)] which appears to be the first

published account (unless anyone out there knows otherwise!); the series of observations were made by Alberto Búrquez at the University of Cambridge in 1986, 1987 and 1988; so effective was the pollination by small birds (in this case blue tits) that he suggests that *F. imperialis* is probably pollinated by birds throughout its range, not just in gardens. I must point out that Alun Rees, who wrote the recent note in *The New Plantsman*, did refer back to the original work by Búrquez. In view of the fact that the Crown Imperial has been cultivated in Europe for centuries, probably since the sixteenth century, it seems very likely that this will have been observed before; it is just the sort of thing to have been published in that mine of horticultural and botanical information, the old *Gardener's Chronicle* but just at the moment I haven't the time to go wading through all those enormous tomes.

Geoffrey Halliday of the Dept. of Biological Sciences at the University of Lancaster occasionally sends in for identification odd monocots which have been found naturalised in Cumbria, for adding to the checklist of the flora. The latest two were scillas, one undoubtedly *S. siberica* and the other, a '?Chionodoxa', turned out to be *S. bithynica*. I come across this attractive species very often and it is proving to be a much more common plant in gardens than I would have imagined some years ago; this is because many of the plants reputed to be *Scilla italica* turn out to be, on closer inspection, *S. bithynica*. The two are superficially very alike, with fairly dense broadly conical racemes of small starry blue flowers in mid-spring, but they are easily distinguished by the small bracts which subtend each of the flower stalks in the raceme; in *S. italica* there are two long slender bracts, one shorter than the other, while in *S. bithynica* there is only one bract, a short stubby one which is roughly oval or of an irregular indefinable shape. The bulb structure is also different, *S. italica* having a more or less solid bulb of the bluebell type (it is therefore a *Hyacinthoides* if this 'split' of *Scilla* is accepted) whereas *S. bithynica* has a typical 'onion-type' bulb consisting of concentric scales.

Droppers

Geoffrey Halliday of the University of Lancaster has commented upon some *Chionodoxa* bulbs which he recently dug up: 'every June I dig up a small bed of *Chionodoxa* prior to planting out bedding plants. Many, but far from all, the bulbs have thick white 'droppers'. What would these develop into? Do they form a new bulb lower in the soil?'

I think the answer to this is that these thick white things are contractile

roots, designed to pull the bulb down to a deeper level. Some scillas, certainly chionodoxas, and many other bulbs will produce such roots if they are not planted deeply enough, and especially in light sandy soils which dry out on the surface; it is the natural way for a bulb to reach its 'operating depth', and the bulbs will not normally flower until they have reached that depth. Starting from seed, this would happen progressively each year from germination through to maturity but in a garden situation we often plant mature bulbs without the knowledge of what is the natural 'operating depth' [a very nice project here, to find out what are the natural critical depths for a range of different species]. A mature bulb which is newly planted will usually flower whatever the depth, since the flower buds are already formed inside before it is planted; however, if planted too shallowly, the following year may be a different story since the bulb may well be using up its energy in producing a contractile root to get to a lower level at the expense of flowering. The bulb pulls itself down by producing a thick fleshy parsnip-shaped (i.e. roughly conical) root, quite different from the slender 'proper' feeding roots, which at its top is almost as wide as the young bulb itself; at the end of the growing season this root shrivels and shortens and, being anchored in the soil at its lower end, has the effect of pulling the bulb down into the gap vacated by the root itself. This system is also well developed in many cormous Iridaceae - *Crocus*, *Dierama*, *Gladiolus* etc. There are other rather different methods in some other bulbs; tulips, for example, produce stolons which dive down into the soil (these are known as 'droppers') and produce new bulbs at their tips, often leaving the empty coat of the old bulb behind at the shallower depth. It is an interesting experiment to scatter a few spare bulbs of scillas or chionodoxas (e.g. *S. siberica*, *S. (Hyacinthoides) non-scripta*, *C. siehei*, and *S. litardierei* is particularly good at it) on the surface of the soil in autumn and see what happens; not in very cold frosty areas, though, or they will die.

From the catalogues

The catalogue from Avon Bulbs is always a 'good read' and this year is no exception with all sorts of exciting odds and ends as well as a very comprehensive list of the more standard items. Specialities which caught my eye were: *Dracunculus canariensis*, which is quite unlike *D. vulgaris* in having a pale green spathe and a yellow spadix appendix, the rare *Galanthus fosteri*, 7 different forms of *Iris unguicularis*, *Lilium x testaceum* (this always impresses me since I cannot seem to please it whatever I do!), *Paradisea lusitanica*, a relative of the lovely *P. liliastrum*, and I was delighted to see some of the 'North' *langkongense* hybrid lilies on offer: these may not be the most striking of lilies but they are good garden plants.

Tropaeolum ciliatum, an attractive tuberous species with pale coffee/straw-coloured flowers lined with brown, and a good selection of those interesting African onion relatives, *Tulbaghia* (*acutiloba*, *coddii*, *cominsii*, *fragrans*, *natalensis*, *violacea*, *v.pallida* & *v.'Silver Lace'*) complete my selection from this fascinating catalogue (well illustrated, too, including a bouquet-of-spring-bulbs watercolour by Jenny Jowett on the front cover). Avon Bulbs, Burnt House Farm, Mid Lambrook, South Petherton, Somerset, TA13 5HE.

Broadleigh Gardens have some 'specials', and their hybrid Pacific Coast irises are always a joy to see at the Chelsea Show; the catalogue lists 14 different ones including some new selections for this year. They are usually quoted as being lime-haters but this is not so, as Christine Skelmersdale points out; Primrose Warburg grows them quite well on her lime-rich clay near Oxford and it seems that a decent humus content is sufficient to make them happy, the actual pH figure perhaps rather less critical than was generally supposed. It is good to see the excellent winter-flowering *Crocus laevigatus* 'Fontenayi' back in a list again. There is always an excellent selection of the smaller *Narcissus* cultivars, some of them new introductions. Tecophilaeas are there, expensive and rightly so, but I was surprised to find their curious Californian relative, *Odontostomum hartwegii* (see BN 10:12); don't get too excited, this has small white flowers on 20-25 cm stems, but it is interesting and, as the catalogue warns, it is a real challenge to get it to flower. But what is this genus 'Fruitoxalis', encompassing *Oxalis enneaphylla* and *O. adenophylla*? - have I missed some important botanical paper, or did the catalogue compilation get mixed up with the shopping list? If the former I will bring news in due course! Plants which have been awarded the R.H.S. Award of Garden Merit are given an identifying symbol which some catalogue browsers will find of interest. Broadleigh Gardens, Bishops Hull Taunton, Somerset, TA4 1AE.

Jacques Amand, while maintaining an extraordinary list of the bread-and-butter bulbs, such as the *Tulipa*, *Hyacinthus*, *Crocus*, and *Narcissus* cultivars (and a very good source of these, incidentally), does offer some of the more unusual ones as well. *Arisaema* is currently popular so there is quite a collection of those, and *Fritillaria* species too; this year, for instance, there are, apart from the more obvious ones: the unique and tricky pink Turkish *F. alburyana* and tubby yellow *F. aurea*, the rare green *F. chlorantha* from Iran, *F. davisii* from Greece and the Americans, *F. eastwoodiae*, *F. brandegei*, *F. micrantha* and *F. purdyi*. *Iris histrioides* is back, after an inexplicable absence, and is accompanied by the variant 'Lady Beatrix Stanley' which is actually very like the true wild species, perhaps just a slightly paler shade of blue and more prominently

blotched on the falls; *I. histrio* is here as well, a superb plant but for us in southern Britain, better treated as a bulb frame or alpine house plant since it commences growth very early. *Sternbergia greuteriana* is a rather expensive newcomer (see BN 2:11), offered alongside *S. clusiana* (but the photo of the latter actually shows *S. sicula*, I believe). We like to plant small groups of tulip cultivars alongside suitable companion plants, especially of the Lily-flowered group since they are particular favourites; there are plenty to choose from, but the small species are the ones I look for first, for planting in the raised beds where they will get a baking in summer; I notice that the lovely 'pulchella albocaerulea' - the white form of *T. humilis* with a blue eye - is being offered and I think I know exactly where that would go nicely. Jacques Amand, The Nurseries, Clamp Hill, Stanmore, Middlesex, HA7 3JS

Paul Christian's lists are an Aladdin's cave of *Corydalis* (incl. *incisa*, *incisa alba*, *ruksansii*, *buschii* etc.) *Grocus* (incl. *scharojanii*, *baytopiorum*, *kosanini*), *Erythronium* (30 spp. & forms, incl. *purpurascens*, *sibiricum*, *sibiricum album* and *umbilicatum*) and *Fritillaria* (incl. *eduardii*, *montana*, *orientalis*, *pluriflora* and *raddeana*); the summer-autumn list has some items which are [almost?] impossible to obtain elsewhere: 12 *Zephyranthes* including *Z. morrisclintii*, *Z. pulchella*, *Z. reginae*, *Z. smallii* and *Z. traubii*. There are 16 'Juno' irises, including *I. nicolai*, *I. rosenbachiana* and reputedly the true *I. kopetdaghensis* - need I say more! Paul Christian, P.O. Box 468, Wrexham, Clwyd, LL13 9XR.

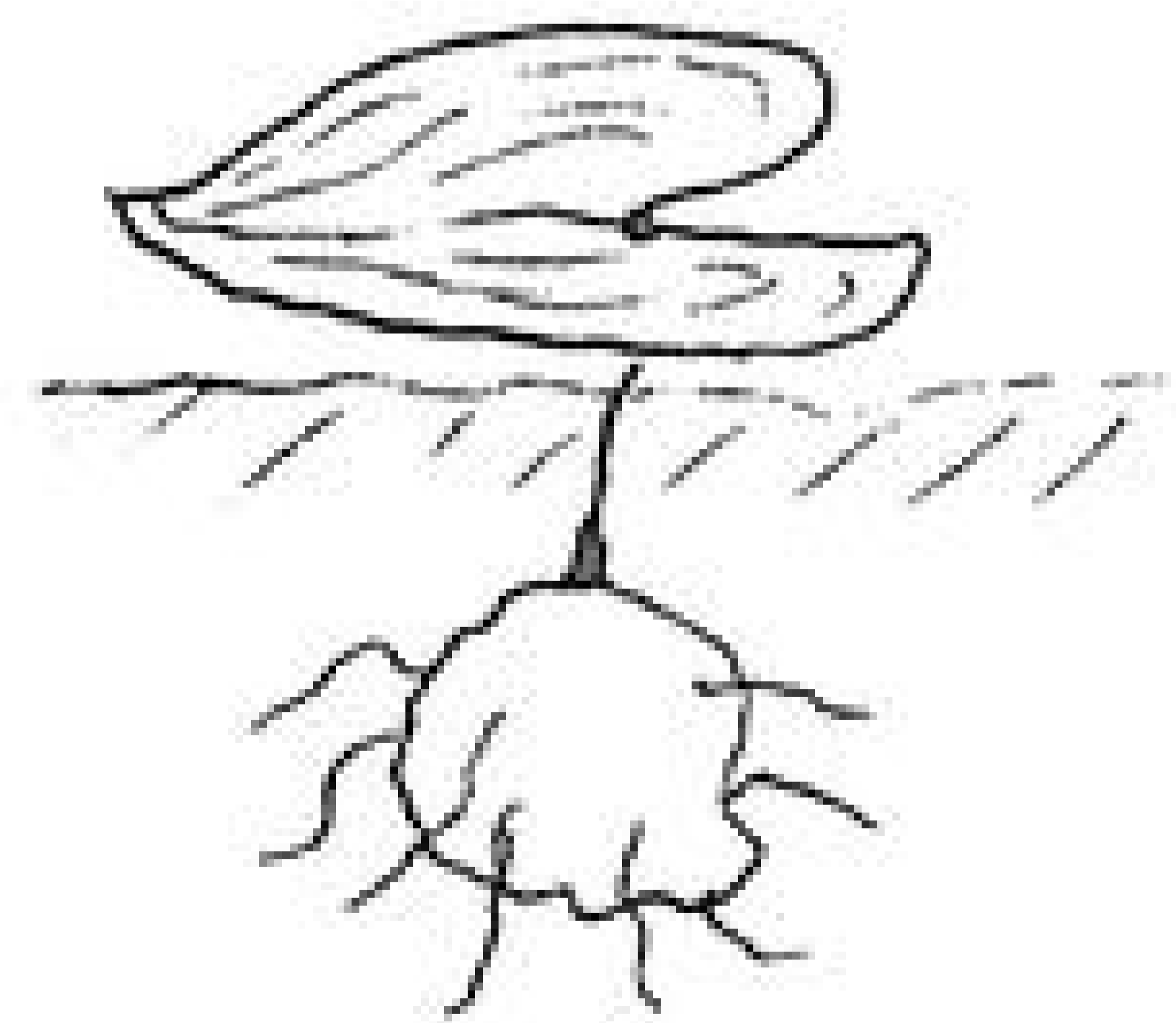
Recently I have been asked where it is possible to obtain the pink form of *Trillium grandiflorum* and I have to say that, commercially, I don't know the answer, but John Morley, North Green Seeds, North Green Only, Stoven, Beccles, Suffolk NR34 8DG, U.K. offered seeds of Kath Dryden's pink form in his 1995 list; and there are plenty of other items of interest for those who are keen seed-raisers - mostly non-bulbous, but we must not be blinkered!

Bookends

A Revision of Eriospermum by Pauline L. Perry, published as Contribution from the Bolus Herbarium No. 17 (1994). Many people will not know of the genus *Eriospermum* since, horticulturally speaking, these are not very showy African curiosities which are very seldom cultivated. They are, however, fascinating and I would very much like to try a few some time. Traditionally they have been classified in the Liliaceae since their flowers have six stamens and a superior ovary but, with the splitting of that family, there came a dilemma: what are they really related to? In the absence of an obvious answer the only course of action is to give it a family of its own, so

it is currently in the Eriospermaceae!

Pauline Perry's revision has been long awaited by those involved in identifying plants from southern Africa. This is a tricky genus in that in many species the flowers and leaves are produced separately; many herbarium specimens consist of only flowers or leaves and it is difficult to link the two together. However, field work and the collection of living specimens for study throughout their life cycle, has assisted in overcoming this particular problem. This is a large genus: Dr Perry recognises 102 species, mainly from the dryer parts of south tropical and South Africa; one characteristic which they all have, which is reflected in the generic name, is that the seeds are covered in a mass of white silky hairs, *Erio-spermum* = woolly-seeded. The small flowers (in the largest-flowered they are about 2 cm across and most have much smaller ones) are carried in a raceme and are quite simple in their structure, not unlike small starry scillas with six spreading or cupped segments, six stamens and a superior ovary in the centre; the colour is white to pale yellow, often with a green stripe along the centre of each segment and sometimes suffused red on the outside. The 'rootstock', however, is a solid tuber, often rather misshapen and knobbly and apparently rooting rather irregularly from its surface. It is the leaves which are, to me, the most fascinating part of the plant; some species produce them at the same time as the flowers but in others they appear later, usually at the commencement of the rainy season. The shape varies enormously, sometimes fairly 'ordinary' - lance-shaped and erect - and sometimes almost flat on the ground with an orbicular or heart-shaped blade, while others have a very small blade which produces from its surface a cluster of curious branched thread-like projections, giving the impression of a much-divided 'ferny' leaf. A few species dispense with a leaf almost altogether, once they reach flowering size, and instead the green flower stem deals with the task of photosynthesis. For those who do manage to acquire an *Eriospermum*, Pauline Perry provides distribution and habitat notes which will aid cultivation; those from the predominantly winter rainfall region (S.W. Cape) flower in the dry summer months and produce leaves in winter, while those from other areas behave in a reverse manner, producing flowers towards the end of the dry winter and leaves in the spring or summer at the onset of the rains; some, presumably from areas with less well defined wet and dry seasons, come into flower and leaf at the same



time. I have limited experience of these (mainly restricted to trying to identify them as herbarium specimens!) and currently have no living plants at all, so this work has re-kindled my interest and I shall be on the lookout for these hairy-seeded curiosities in the seed lists; after all, they are every bit as exciting as *Scilla autumnalis* in flower and many of them have much better leaves!

Australian Plants. Only a few of the many fascinating endemic Australian monocots are mentioned from time to time in our pages and then usually rather briefly; this sad omission is because so few of them are in general cultivation. For those wishing to learn more, many of the genera likely to be of interest to 'bulb' enthusiasts were covered by volumes 45 and 46 of the *Flora of Australia* (published in 1987 and 1986 respectively, by the Australian Government Publishing Service, Canberra); these included Iridaceae and Liliaceae (which in the classification followed by the *Flora* encompassed Amaryllidaceae). The excellent periodical *Australian Plants* gives lot of valuable information useful to would-be growers, accompanied by good colour plates. Three issues which I refer to a great deal are numbers 131, 132 and 133, published in 1992 and 1993, devoted to the monocots. Here we will find articles on 'Tasmanian Irises and Lilies'; the genus *Sowerbaea*, the Tinsel Lilies (the genus *Calectasia*); *Burchardia*, their propagation and cultivation (see page 3, this issue of BN); *Patersonia*, the most iris-looking of the Australian irids; the Fringed Violets (*Thysanotus*); *Johnsonia*; 'Western Australian Lilies' (such as *Agrostocrinum*, *Arnocrinum*, *Hensmania* and *Hodgsoniola*: what fascinating plants these are!). One part gives us an account, with identification keys to the families and genera, of the Dahlgren system of classification of the monocots occurring in Australia. Of course, Kangaroo Paws (*Anigozanthus*) are not forgotten, and there are notes of some of the hybrid ones which are now getting around - I bought one in a local garden centre recently.

I imagine that these copies of *Australian Plants* are still available; mine were obtained through Bower Bird Books, PO Box 104, Winmalee 2777, Australia; they are probably also obtainable direct from the publishers, The Society for Growing Australian Plants: P.O. Box 410, Padstow, NSW 2211. I will not quote the price because my figures are probably out of date.

So that S. Hemisphere subscribers can visualise what is going on in the 'BN garden' as we compile this issue: the first autumn Colchicum is open, and it is that fraught time known as BRT (BULB REPOTTING TIME!).