

## GERANIUM - Geraniaceae

400-odd species, overwhelmingly Eurasian. An extraordinarily useful genus, especially for those in milder climates, where long-growing seasons create good opportunities for those species which are able to grow at low temperatures. For our purposes, this complex genus can be divided into three functional groups and some sub-groups:

- 0.0 monocarpic rhizophytes, including the showy and not very hardy *G. palmatum* and *G. maderense*; these are not discussed here,
- 1.0 caulophyte species with limited rhizomatous growth
- 2.0 caulophytes but more strongly rhizomatous
- 3.0 rhizocaulophytes, tending to have long sprawling flower stems

**1.0 Caulophytes with very short rhizomes**, very limited vegetative spread, tight mass highly integrated rhizomes, almost mimicking a rhizocaulophyte.

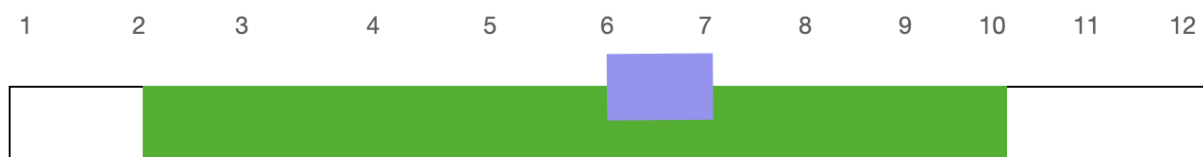
Divided into these sub-groups:

- 1.1 relatively upright growth
- 1.2 more compact, less strongly upright growth

### 1.1 Relatively upright growth

***G. pratense*** – meadow cranesbill

*Northern and central Europe; limestone grassland, both dry and damp*



<b>Height</b>	0.8-1.4m
<b>Spread</b>	0.25-0.5m
<b>Foliage</b>	Lobed into five divisions
<b>Architecture</b>	B2. Flowers held well above clumps of lower foliage
<b>Flowers</b>	Purple-blue
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte
<b>Underground</b>	Dense, very short rhizomes
<b>Spread Rate</b>	Slow
<b>Persistence</b>	High
<b>Clump Density</b>	High
<b>Standing</b>	Upright but often lax
<b>Seeding</b>	Occasional/Moderate
<b>Soil</b>	Notably tolerant of poor and calcareous soils
<b>Moisture</b>	Average, some tolerance of summer drought
<b>Light</b>	Sun
<b>Hardiness</b>	USDA zone 5

In garden situations lack of competition and consequent over-growth often results in bad flopping.

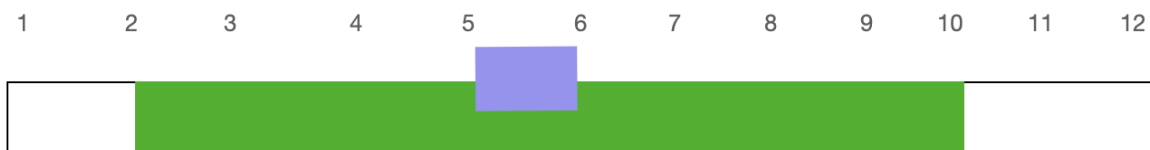
'Mrs. Kendall Clark' AGM 1993 is the best-known, with paler veins in the flowers; it is seed-raised and therefore variable.

'Plenum Violaceum' AGM 1993 is an old variety with small double flowers, over a longer season.

There are a number of cultivars with dark foliage, such as 'Black Beauty' and 'Midnight Reiter'.

### **G. sylvaticum**

Northern and montane central Europe; meadows, woodland edge, often on calcareous soils



As *G. pratense* but:

<b>Height</b>	0.3-0.8m
<b>Spread</b>	0.25-0.5m
<b>Foliage</b>	Typically mauve-blue, but very variable

A useful plant for early colour, as it is narrow and uncompetitive, capable of seeding extensively without impacting neighbouring plants.

Many of the cultivars breed true from seed if grown in isolation.

'Album' AGM 1993 is pure white,

'Amy Doncaster' a lovely almost true-blue,

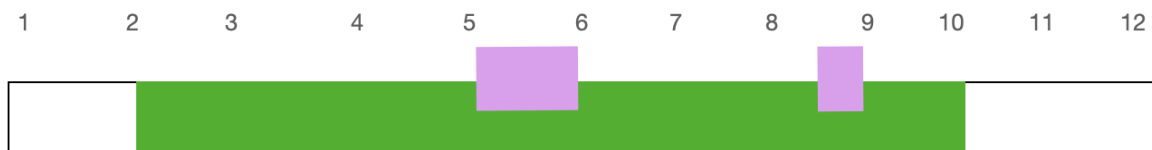


*Geranium sylvaticum*, four year old plants showing short rhizomes and limited rate of spread. *G. pratense* is very similar underground.

## 1.2 Limited rhizomatous spread, compact habit

### **G. maculatum** - Spotted cranesbill

*Eastern North America, generally woodland.*



<b>Height</b>	0.3-0.6m
<b>Spread</b>	0.25-0.5m
<b>Foliage</b>	Lobed into five divisions, deeply incised
<b>Architecture</b>	B2. Flowers held well above clumps of lower foliage
<b>Flowers</b>	Mauve-pink
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Rhizophyte
<b>Underground</b>	Dense group short rhizomes
<b>Spread Rate</b>	Slow
<b>Persistence</b>	na
<b>Clump Density</b>	na
<b>Standing</b>	Lax-tending
<b>Seeding</b>	Occasional/Moderate; sometimes extensive
<b>Soil</b>	No special tolerances or demands, any reasonable soil
<b>Moisture</b>	Average, some tolerance of summer drought
<b>Light</b>	Sun, light shade, including dry shade
<b>Hardiness</b>	USDA Zone 3

A compact species which can be particularly valuable if it self-sows. One of the few American native species in commerce.

**'Elizabeth Ann'** AGM 2006 has large lilac flowers.

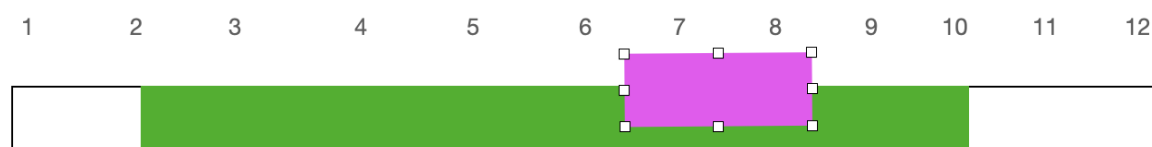
### **G. collinum**

*Southeast Europe to Central Asia and Siberia.*

As *G. maculatum* and very similar in many ways, but often a longer flowering season. Possibly better in sun and with some drought tolerance.

### **G. wlassovianum**

*Central Asia and Siberia.*



The same basic form as *G. maculatum* but with distinctively divided basal leaves which is reddish-toned in spring and can be dramatically red in autumn; magenta flowers. Seems tolerant of various soil conditions. USDA zone 4

## 2.0 Caulophytes – the strongly rhizomatous species

A valuable and complex group, with much inter-species hybridisation. Rhizomes are just underground unless otherwise mentioned, notable lateral spread by rhizomatous growth.

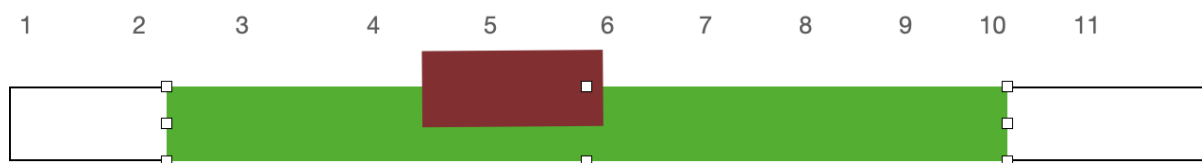
Divided here into sub-groups:

- 2.1 *G. phaeum* and hybrids,
- 2.2 *G. endressii* group,
- 2.3 Blue group,
- 2.4 *G. macrorrhizum* and hybrids,
- 2.5 *G. psilostemon* and hybrids,
- 2.6 *G. sanguineum* and hybrids

### 2.1 *G. phaeum* and hybrids

#### *G. phaeum*

Central Europe; meadows, woodland edge,



<b>Height</b>	0.3-0.8m
<b>Spread</b>	0.5-0.8m
<b>Foliage</b>	Lobed into five divisions.
<b>Architecture</b>	B6. Flexible
<b>Flowers</b>	Very variable: dark maroon, purple, pink
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte-Phalanx
<b>Underground</b>	Thick rhizomes, moderate branching
<b>Spread Rate</b>	Moderate/Rapid
<b>Persistence</b>	Highly persistent, except in conditions of high competition
<b>Clump Density</b>	Average
<b>Standing</b>	Lax-obligate
<b>Seeding</b>	Occasional/Moderate
<b>Soil</b>	No special tolerances or demands, any reasonable soil
<b>Moisture</b>	Average
<b>Light</b>	Sun, light shade
<b>Hardiness</b>	USDA zone 5

Most cultivars have been chosen on the basis of flower colour.

'Album' is pure white,

'Chocolate Chip' is exceptionally dark,

'Joan Baker' is soft mauve-pink,

'Rose Madder' has blotched leaves and pink-red flowers (like "meat on the turn" according to one commentator),

'Samobor' has very strongly blotched foliage, and maroon flowers.

'Lily Lovell' is deep dark purple-blue and notably taller than most, and vigorous.

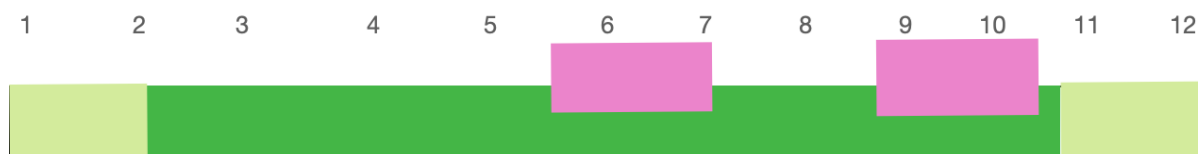
Only 'Our Pat' has an AGM (2006), also taller than average with well-displayed very dark purple flowers.

**G. x monacense**, a hybrid with *G. reflexum*, is almost identical in form, with dark red flowers, slightly reflexed petals and strongly marked foliage, much appreciated in early spring before flowering.

## 2.2 *G. endressii* group

### *G. endressii*

Western Pyrenees in northern Spain; woodland edge



<b>Height</b>	0.3-0.8m
<b>Spread</b>	0.5-0.8m
<b>Foliage</b>	Lobed into five divisions
<b>Architecture</b>	B6. Flexible
<b>Flowers</b>	Mid-pink
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte-Phalanx
<b>Underground</b>	Rhizomes, much branched, building up into multi-layer mats
<b>Spread Rate</b>	Moderate
<b>Persistence</b>	Highly persistent, except in conditions of high competition
<b>Clump Density</b>	High
<b>Standing</b>	Lax
<b>Seeding</b>	Can vary enormously between cultivars, but usually occasional/moderate
<b>Soil</b>	No special tolerances or demands, any reasonable soil
<b>Moisture</b>	Average
<b>Light</b>	Sun, light shade.
<b>Hardiness</b>	USDA zone 5

***G. endressii*** and ***G. versicolor*** (Italy and the southern Balkans) are two very similar species whose hybrids are known as ***G. x oxonianum***. All are notable for their ability to grow at low temperatures, making them functionally evergreen in mild winters. All can repeat flower through the autumn, though with less intensity than in early summer. The multi-layer rhizomatous mats formed are noted as being efficient weed-suppressors, as is the habit of flowering stems collapsing after flowering, taking surrounding vegetation around them down, allowing space for new stems in mid to late summer.

There is much confusion over whether cultivars are properly derived from the species or are hybrids. All will be dealt with here together. The main differences are in flower colour and vigour.

'Claridge Druce' is worth noting, partly for historical reasons – it is the oldest named hybrid, named for a prominent Oxford pharmacist, famous for his hangover cures, but also because it is an example of a hybrid which has appeared to have become a species in its own right, as it can seed vigorously, with seedlings being true to type. Its size (to 80cms) indicates it possibly being a tetraploid.

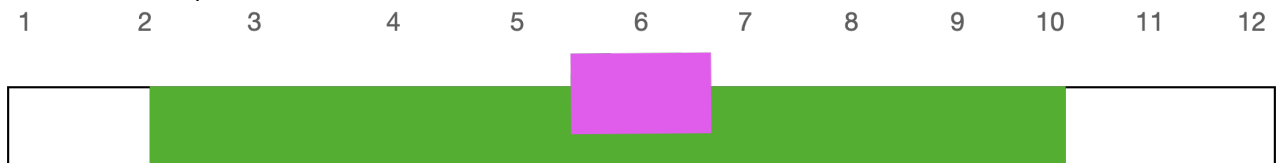
*G. x oxonianum* cultivars – a selection

	Height	Vigour	Colour	Other
A.T. Johnson AGM	very short	compact	salmon	
Ankum's White	medium		white	
'Beholder's Eye' AGM	medium	compact		
Katherine Adele'	short		small, mauve-pink, veined	
Lace Time'	short		almost white, ageing to	
Rebecca Moss'	medium		pink	
Rose Clair'	short	compact	glistening pink	
Rosenlicht'	short		salmon, some veining	
f. thurstonianum	tall		deep magenta	many variations
Wageningen' AGM	short	upright	very narrow petals	
Walter's Gift'	short		rich pink, bleaching	leaves blotched
Wargrave Pink'	medium	vigorous	very pale pink, deepening	

very short – 0.3m  
short – 0.4m  
medium – 0.5m  
tall - >0.5m

***G. nodosum***

*Southern Europe; woodland edges*



Height	0.3-0.4m
Spread	0.5-0.8m
Foliage	Lobed into five divisions, each distinctly pointed
Architecture	B6. Flexible
Flowers	Bright, shiny-pink
Post-flowering	Minimal
Longevity	Long-lived
Spread mode	Caulophyte-Phalanx
Underground	Rhizomes
Spread Rate	Moderate
Persistence	High
Clump Density	Average
Standing	Lax-obligate
Seeding	Frequently moderate, or high; can be extensive
Soil	Average
Moisture	Average
Light	Light shade, shade, noted tolerance of dry shade
Hardiness	USDA zone 4

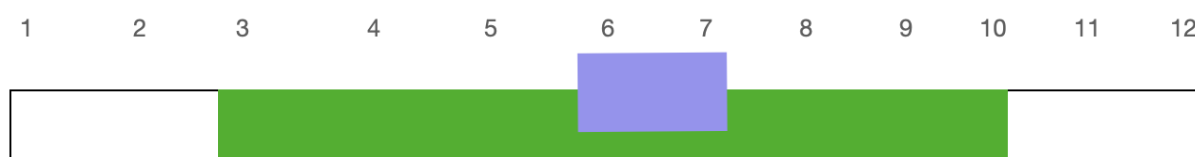
A species noted primarily for its seeding ability, which can make it useful for ground cover or the underplanting of shrubs.

### 2.3 Blue Group

Rhizomatous, but weaker than others in this group. The 'spreading ability' and 'ground cover' referred to in many reference sources may have more to do with profuse foliage and a sprawling habit than a real ability to dominate ground. This weaker habit may have advantages – as not-too-competitive underplanting for roses for example. The cultivars seem to have longer flowering stems than the species, and therefore to flop particularly badly after flowering – or alternatively be especially good as scramblers through other vegetation.

#### *G. himalayense*

Northwestern Himalayan foothills



<b>Height</b>	0.3-0.4m
<b>Spread</b>	0.5-0.8m
<b>Foliage</b>	Lobed into five divisions, elegantly cut
<b>Architecture</b>	B6. Flexible
<b>Flowers</b>	Purple-blue, notably large
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte-Phalanx
<b>Underground</b>	Rhizomes
<b>Spread Rate</b>	Moderate
<b>Persistence</b>	High
<b>Clump Density</b>	Low to average
<b>Standing</b>	Lax
<b>Seeding</b>	Occasional
<b>Soil</b>	Average
<b>Moisture</b>	Average
<b>Light</b>	Sun, light shade
<b>Hardiness</b>	USDA zone 3

A variable species, from which various selections have been made.

'**Birch Double**' and '**Plenum**' are regarded as the same – with double flowers.

'**Gravetye**' is an old cultivar name which appears to be applied to several different clones, notably for some autumn repeat flowering.

'**Irish Blue**' has particularly large and particularly blue flowers.

#### *G. clarkei*

Kashmir

As *G. himalayense*, but with distinctly more deeply lobed, and rather elegant, leaves. Flowers well-displayed above foliage. USDA zone 4?

'**Kashmir Pink**' is soft pink,

'**Kashmir White**' is white but with distinct dark veins, possibly less vigorous,

'**Kashmir Purple**', more purple but highly variable, often particularly vigorous.

'**Kashmir Blue**' is actually a hybrid with a form of *G. pratense*, large soft blue flowers.

**G. 'Blue Cloud'** AGM 2007

As *G. himalayense*, but with soft blue flowers, up to 4 cms across produced over a longer period. Tall – to 90cms,

**'Brookside'** AGM 2004

As *G. himalayense*, but with lavender-blue flowers produced until mid-summer. Height to 60cms.

**G. ibericum**

As *G. himalayense*, but shorter flowering season. USDA Zone 6

**G. 'Johnson's Blue'**

As *G. himalayense*, and very similar. A hybrid of *G. himalayense* with *G. pratense*. Once very popular but now outshone by newer cultivars with a tendency to a longer flowering season. USDA zone 4

**G. x magnificum** AGM 1993

As *G. himalayense*, but a little taller, with notably hairy foliage. Robust habit. Purple-blue flowers. An old hybrid between *G. ibericum* and *G. platypetalum*, with several forms in circulation. USDA zone 5

**G. 'Nimbus'** AGM 2004

As *G. himalayense*, but to 90cms, and continuing to flower until August.

**G. 'Orion'** AGM 2004

As *G. himalayense*, with deeply lobed leaves and large lavender-blue flowers, until August. To 80cms

**G. 'Sirak'** AGM 2004

As *G. himalayense*, but with profuse shiny mauve-pink flowers. To 60cms. A hybrid of *G. gracile* and *G. ibericum*.

**2.4 G. macrorrhizum, hybrids and related species**

Rhizomatous, with above-ground, thick, quite woody rhizomes. Notably aromatic with a strong cloying scent; this may possibly be related to allelopathic qualities (pure speculation) as these are particularly effective as weed suppressors, and possible a cat deterrent too.

**G. macrorrhizum** – Bigroot Geranium

Southern central Europe, Balkans; woodland, calcareous warm slopes

1 2 3 4 5 6 7 8 9 10 11 12



<b>Height</b>	0.3-0.4m
<b>Spread</b>	0.4-0.6m
<b>Foliage</b>	Lobed into five divisions, fresh green, hairy, strong scent
<b>Architecture</b>	B1. Clump forming, GC1. Creeping, rooting from rhizomes
<b>Flowers</b>	Pink, variable, relatively small, in dense cluster
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte-Phalanx
<b>Underground</b>	Rhizomes at soil surface or above
<b>Spread Rate</b>	Moderate
<b>Persistence</b>	High

<b>Clump Density</b>	High
<b>Standing</b>	Firm
<b>Seeding</b>	Occasional
<b>Soil</b>	Average
<b>Moisture</b>	Average, dry
<b>Light</b>	Sun, light to full shade, dry shade
<b>Hardiness</b>	USDA zone 4

An immensely useful species for low maintenance ground cover in a variety of situations.

- 'Album' is pure white,
- 'Bevan's Variety' a strong magenta,
- 'Czakov' magenta on reddish stema,
- 'Ingwersen's Variety' AGM 1993 has pale pink flowers,
- 'White-Ness' AGM 2006 is white, lower than average.

### ***G. x cantabrigiense***

is a low-growing hybrid (to 25cms) between *G. macrorrhizum* and *G. dalmaticum*. Soft pink flowers.

### ***G. dalmaticum*** AGM 1993

Growing to only 15cms with clear pink flowers, essentially a dwarf version of *macrorrhizum*. USDA zone 3

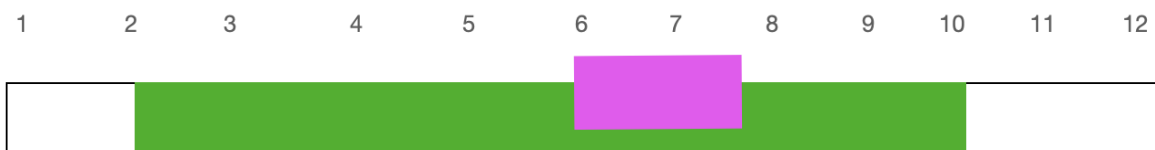
### ***G. renardii*** AGM 1993

*Caucasus*. Grey leaves with a rough sage-like texture are the main feature of this plant, to 35cms, and more modestly spreading than the others in this group. White flowers, often tinged lavender. Tolerant of poor and dry soils. Sun. USDA zone 6

## **2.5 *G. psilostemon* and hybrids,**

### ***G. psilostemon***

*Caucasus*



<b>Height</b>	0.8-1.2m
<b>Spread</b>	0.4-0.6m
<b>Foliage</b>	Lobed into five divisions
<b>Architecture</b>	B1. Clump forming, B6. Flexible
<b>Flowers</b>	Magenta, dark eye
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte-Phalanx
<b>Underground</b>	Short rhizomes
<b>Spread Rate</b>	Slow to moderate
<b>Persistence</b>	High
<b>Clump Density</b>	High
<b>Standing</b>	Firm, becoming lax at or after flowering

**Seeding**  
**Soil**  
**Moisture**  
**Light**  
**Hardiness**

Occasional  
Average  
Average  
Sun, light shade  
USDA zone 5

A spectacular border plant, with the most physical presence of any in the genus. There is remarkably little genetic variation, so very few cultivars, none notably distinct.

**G. 'Ivan'** AGM 2007

A hybrid of the above with *G. endressii*. Essentially a shorter *G. psilostemon*, to 90cms, possibly longer-flowering.

**G. 'Patricia' ('Brempat')** AGM 2005

Another hybrid of the same parentage as above. To 70cms with a more lax habit. Some later flowering.



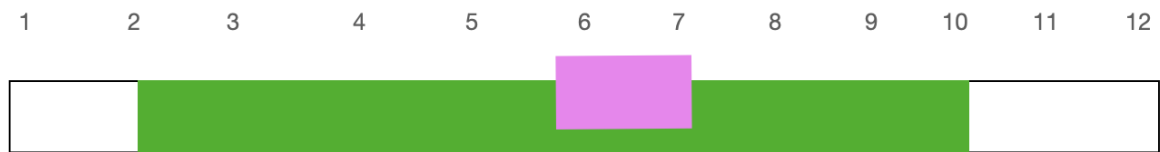
Comparison of three Geranium rhizomes, all of which live for several years. Top *G. phaeum*, showing wide, only weakly branching but quite long rhizomes, middle – *G. psilostemon* by comparison has short rhizomes as part of a long-lived tightly-integrated structure, somewhat resembling those of *G. sylvaticum* and *G. pratense* (see earlier) but more strongly spreading. Bottom left and right - *G. endressii* forms multi-layered mats of extensively-branching rhizomes (see §CSR for an illustration of a single rhizome).



## 2.6 *G. sanguineum* and hybrids

### *G. sanguineum*

Oceanic Europe, southern and central Europe; dry calcareous soils, sand dunes, often coastal



<b>Height</b>	0.3 - 0.4m
<b>Spread</b>	0.4-0.6m
<b>Foliage</b>	Lobed into five pointed divisions, small, dark
<b>Architecture</b>	B6. Flexible
<b>Flowers</b>	Pink, variable, mostly deep shades
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Caulophyte-Phalanx
<b>Underground</b>	Rhizomes, some adventitious shoots from roots
<b>Spread Rate</b>	Moderate
<b>Persistence</b>	High
<b>Clump Density</b>	High
<b>Standing</b>	Firm, becoming lax at or after flowering
<b>Seeding</b>	Occasional
<b>Soil</b>	Average
<b>Moisture</b>	Average, dry
<b>Light</b>	Sun, light shade
<b>Hardiness</b>	USDA zone 3

neat after flowering, a function of its low stature, and the fact that the flowering stems often continue to grow after the flowers have died. The most drought tolerant of the commonly-grown species.

'**Album**' AGM, pure white,

'**Ankum's Pride**' AGM, very large, darker-veined bright pink flowers, particularly good ground-covering habit,

'**Aviemore**' AGM, usual dark pink, neat low growth,

'**Little Bead**' AGM, grows to only 0.15m, flowering sporadically through the summer after main season, deep pink-purple flowers,

'**Max Frei**', low, tidy growth, dark pink flowers, reddish autumn colour,

'**Shepherd's Warning**' AGM, compact, usual dark pink flowers, good autumn colour,

**var. striatum** AGM, lower-growing, to 0.2m, very pale pink, with darker veining

**var. striatum 'Splendens'** AGM, as above, more vigorous,

'**Tiny Monster**', a hybrid with *psilostemon*, same size as the others but particularly striking large magenta flowers.

### 1.3 Rhizocaulophytes, very limited spread, extensive sprawling flower stems

These are essentially scramblers, with long flowering stems which naturally clamber over other perennials or reach into the lower branches of shrubs.

#### ***G. wallichianum***

Himalayan foothills.



<b>Height</b>	0.3-0.5m
<b>Spread</b>	0.5-0.8m
<b>Foliage</b>	Lobed into five divisions
<b>Architecture</b>	B6. Flexible, GC4. Sprawling
<b>Flowers</b>	Blue with a touch of purple
<b>Post-flowering</b>	Minimal
<b>Longevity</b>	Long-lived
<b>Spread mode</b>	Rhizophyte
<b>Underground</b>	Very dense mass short rhizomes
<b>Spread Rate</b>	Slow
<b>Persistence</b>	na
<b>Clump Density</b>	na
<b>Standing</b>	Lax-obligate
<b>Seeding</b>	Occasional
<b>Soil</b>	Average
<b>Moisture</b>	Average, flourishes on moist
<b>Light</b>	Sun, light shade
<b>Hardiness</b>	USDA zone 4

A variable species, in height and vigour. A popular late-summer element in woodland edge planting.

'**Buxton's Blue**' A seed-raised cultivar, pale to mid blue flowers with darker veining and almost white centre.

**G. 'Rozanne' (Gerwat)** AGM 2006 is a vigorous sprawler rapidly forming a mat 1m in diameter. Plentiful blue flowers with white centre. Used as ground cover; that it does not spread by rhizomes may be an advantage in some circumstances, but it does mean the plant is no good as a weed suppressant. Most effective as a scrambler into shrubs.

'**Jolly Bee**' is almost identical.

#### **G. 'Ann Folkard'** AGM 1996

As *G. wallichianum* but:

<b>Spread</b>	to 1.2m
<b>Foliage</b>	Pale yellow-green
<b>Flowers</b>	Magenta, dark-eyed

A vibrantly-colourful plant, most effective as a scrambler into shrubs. A hybrid of *G. procurrens* and *G. psilostemon*.

#### **G 'Anne Thomson'** AGM 2005

Very similar to the above, and of the same parentage, this is less vigorous (90cm spread), has light green leaves; said to be more heat-tolerant.

**G. asphodeloides**

as *G. wallichianum*, but:

**Longevity**

3-5 years

**Seeding**

Moderate

May/June flowering in veined white or soft pink flowers.

**G. 'Dilys'** AGM 2005



As *G. wallichianum*, but magenta flowers over an exceptional period with attractive shiny leaves on reddish stems. A hybrid of *G. procurrens* and *G. sanguineum*.

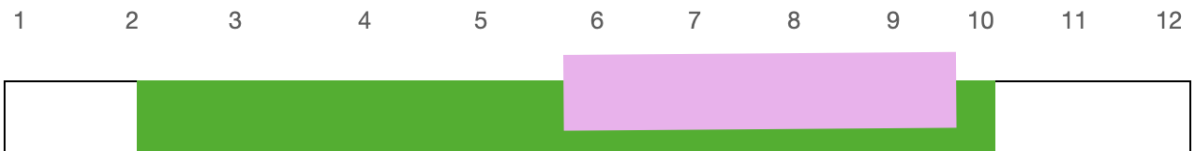
**G. procurrens**

Southern Himalaya foothills.

as *G. wallichianum*, but:

Very vigorous scrambling growth, with (very unusually) the ability to root at the nodes, therefore enabling it to spread very effectively, to 1m across – before rooting, flowers magenta with dark veins, rather scattered. USDA zone

**G. x riversleanum 'Mavis Simpson'** AGM 2004



as *G. wallichianum*, but:

Flowers attractively rounded, soft pink; notably long-flowering.

**'Russell Prichard'** AGM 1993

is very similar, but with greyish foliage and magenta flowers, recurrent through the summer.