



GENTIANELLA

Gentianella causes problems for four main reasons (Pritchard 1959):-

- i. Extensive hybridisation occurs between some of the species which may result in introgression.
- ii. Any one population of some species may contain both annuals and biennials, which frequently differ in such characters as habit and leaf shape.
- iii. Local populations show great variability in morphology which is partly related to (1) and (2).
- iv. There is considerable variation between separate populations in small geographical areas.

1. *Gentianella anglica* / *G. amarella* / *G. × davidiana*

A morphological investigation of variation in *Gentianella anglica* (Pugsley) E. F. Warb. has shown that subsp. *cornubiensis* N. M. Pritch. is *G. anglica* × *G. amarella* = *G. × davidiana* T. C. G. Rich. The hybrid has been recorded from the southern English V.cc. 1, 4, 9, 10, 14 and 16, and may also occur elsewhere (Rich *et al.* 1997). The taxa may be distinguished as below; population means of at least 15 plants should be measured in the field but not collected as *G. anglica* is a protected species.

	<i>G. amarella</i>	<i>G. × davidiana</i>	<i>G. anglica</i>
Number of internodes	5-11	3-5	0-3
% of stem height contributed by terminal internode	1-20%	10%-40%	40-100%
Main flowering time	July-October	May-July (-August)	March-July
Terminal pedicel length	Short	Intermediate	Long

There is considerable interest in conservation of the endemic *G. anglica*. Populations vary enormously in size from year to year, related to its biennial habit and climate, and also the proportions of hybrids in them varies. Please document all localities carefully, and record on a regular basis for a series of years.

2. *Gentianella × pamplinii* (*G. amarella* × *G. germanica*)

G. amarella (L.) Börner subsp. *amarella* and *G. germanica* (Willd.) Börner are usually easily distinguished, but they hybridise freely and in some hybrid populations there is extensive introgression (Pritchard 1960; McVeigh *et al.* 2005).

Occasionally slender annual forms of *G. germanica* may be found which may be misidentified as *G. anglica* when flowering early or *G. amarella* or the hybrid, hence examine populations carefully.

Plant Crib

G. × pamplinii (Druce) E. F. Warb. is usually intermediate but is variable, and has generally lower pollen fertility (c. 50-60% as opposed to over 90% in the parents). The main problem will be separating *G. germanica* from its hybrid with *G. amarella*: *G. × pamplinii* has narrower stem leaves and shorter corollas with the tube intermediate in shape between the parents.

	<i>G. germanica</i>	<i>G. × pamplinii</i>	<i>G. amarella</i>
Height	Robust, (3.5-)12-36(-54) cm, often branched above only	Robust, (7.3-)13-35(-44) cm tall, often branched above and below	Smaller, (2-)3-15(-24) cm tall, often branched above and below
No. of internodes above rosette	(5-)8-13(-16), usually long	(5-)8-11(-12), usually long	(3-)5-9(-11), usually short
Middle stem leaves	(6-)14-32(-43) mm long × (2.5-)7-17(-22) mm wide, ovate-lanceolate to triangular-ovate	(13-)20-38(-49) mm long × (5-)8-14(-18) mm wide, ovate-lanceolate	(6-)9-26(-40) mm long × (2-)3-10(-18) mm wide, lanceolate to ovate-lanceolate
Leaf length:width ratio	(1.0-)1.6-2.0(-3.8)	(1.7-)2.2-3.0(-3.7)	(1.5-)2.2-3.6(-5.0)
Corolla length	(11.5-)25-32(-37) mm, tube narrowly funnel-shaped	(15-)18-21(-23) mm, tube intermediate	(10-)13-19(-21) mm, tube cylindrical
Calyx length	(5-)12-20(-24) mm	(9-)11-16(-18) mm	(5.5-)7-12(-14) mm
Corolla:calyx ratio	(1.2-)1.5-2.2(-3.2)	(1.0-)1.2-1.7(-1.8)	(1.2-)1.5-2.3(-2.9)

3. *Gentianella uliginosa*

Gentianella uliginosa (Willd.) Börner is another rare species which has been reported from Devon and Derbyshire (Rich 1996) in addition to its south Wales sites. Records from Scotland are errors for small *G. amarella* (Rich & Lavery, unpublished).

Key features are the annual growth habit, 0-2 pairs of stem leaves and unequal often spreading sepals.



Plant Crib

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