

GYMNADENIA CONOPSEA

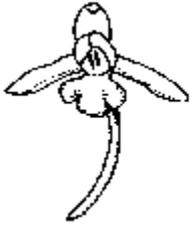
It is now generally accepted that the three subspecies formerly recognised within *G. conopsea* merit specific rank (e.g. Bateman *et al.* 1997, Campbell *et al.* 2007). The best characters are the shape and proportions of the labellum, the side lobes of the labellum (not easy to quantify) and the lateral sepals. There appears to be little or no hybridisation between the species, and they rarely grow in mixed populations. Due to morphological variation, a range of characters must be used.

Gymnadenia conopsea (L.) R. Br. is found in dry lowland calcareous grassland on chalk, Oolite and Magnesian limestone northwards to Durham. *Gymnadenia densiflora* (Wahlenb.) A. Dietr. occurs in calcareous fens (and also north facing chalk grassland) W to Somerset and Devon and N to Anglesey and Westmorland. *Gymnadenia borealis* (Druce) R. M. Bateman, Pridgeon & M. W. Chase is the predominant taxon in the N and W where it grows in relatively lime-poor hill pastures, but it also occurs in the New Forest on marl bogs and in Ashdown Forest. Better information is needed on the distribution of all three taxa.

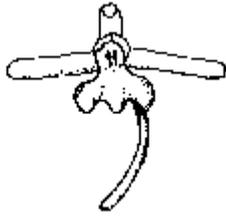
| | <i>G. conopsea</i> | <i>G. densiflora</i> | <i>G. borealis</i> |
|--------------------------|--|---|---|
| Labellum width | (4.5-)5.5-6.5(-7) mm, without shoulders | (5.5-)6.5-7(-8) mm, with distinct shoulders | (3-)3.5-4(-5) mm, narrow |
| Labellum length | (4-)5-6(-6.5) mm | (3-)3.5-4(-4.5) mm | (3.5-)4-4.5(-5) mm |
| Max. width across floret | (7-)10-11(-13) mm | (10-)11-13(-14.5) mm | (7-)8-10(-12) mm |
| Spur length | (11-)12-14(-17) mm | (13-)14-16(-17) mm | (8-)11-14(-15) mm |
| Lateral sepals | Linear, pointed at tip, deflexed at <i>c.</i> 30°, <i>c.</i> 1 mm wide × 5-6 mm long | Linear, truncate at tip, held horizontally, <i>c.</i> 1 mm wide × 6-7 mm long | Oval-lanceolate, pointed, deflexed, <i>c.</i> 2 mm wide × 4-5 mm long |
| Fragrance | Sweet but with an acid “rancid” background | Very sweet (like carnations), no “rancid” background | Very sweet |
| Height | Normally 20-40 cm, can be more | Normally 30-60 cm, but less in dry chalk grassland | Normally 15-25 cm, rarely more |
| Flowering time | Early June - mid July | Early July - August | Late June - late July |

Measurements are ranges (extremes in brackets) normally found in a population. Vegetative characters (height, leaves, etc.) are very plastic and variable, as is the inflorescence density.

Plant Crib 3



a



b



c

Florets of (a) *G. conopsea*, (b) *G. densiflora*, (c) *G. borealis*.

Reference Campbell, V. V., Rowe, G., Beebee, T. & Hutchens, M. J. (2007). *Botanical Journal of the Linnean Society* **155**:349-360
Bateman, R. M., Pridgeon, A. M. & Chase, M. W. (1997). *Lindleyana* **12**:113-141

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