

So many flowers, so little time



From March onwards we have been seeing queens of the Common carder bumblebee, *Bombus pascuorum*. Like the rest of her family, she has a black head, chestnut thorax, and a brown abdomen and tail. This is now the commonest of UK species, perhaps because they feed on a wide range of plants, including White dead nettle that has deep tubular flowers. The long tongue gives this species an important advantage over other bees. Unusually, Carders nest above ground in tussocky grass and under hedges, but their nests are small, and colonies may only produce one hundred individuals. Typically, they collect food from within one kilometre of their nest and this is made possible by their catholic choice of plants.

Adult bees must collect pollen to feed their young which are unable to feed themselves in the way that butterfly larvae do. They also need to gather nectar to provide energy. This is labour intensive and puts bees at risk from predators and so drifts of flowers are much more valuable than collections of isolated flowers.

Whether bees collect pollen or nectar depends on the needs of the colony but also on the weather conditions. Pollen cannot be collected and carried when wet because it does not stick together properly and so in the dewy mornings and evenings, it will be less than 90% of the load whereas it makes up 50% during the middle of the day.

Worker bees learn that members of the pea family (Beans, Clovers, Gorse, Broom) have much greater rewards than most other plant families. They also learn that some species like Comfrey, which replace their nectar supply in 20 minutes, are worth frequent visits while others like Birds foot trefoil, take 24 hours. Pollen quality also varies from species to species, the best being chemically as valuable as prime steak. However, Dandelion pollen is extremely poor and colonies of *B. pascuorum* fed only pollen from this plant, failed to produce any sexually mature individuals.

A recent study found that perennial flowers (Knapweed, Bugloss, Hawkbit) in wildflower meadows produce twenty times more nectar and six times more pollen than annual meadows (Cornflower, Cosmos, Marigold), results that should guide us when acting to support our pollinators.

Many garden plants are good for bees if they are open-flowered like the **Dog rose** or single Dahlia but double varieties with complex shapes (like that of the Cactus dahlia) prevent bees reaching any nectar. There are even plant varieties that have been bred to produce no pollen because flower arrangers would rather cut down on the dusting! Be aware when buying plants for pollinators.

