

CATCHING THE THIEF: NECTAR ROBBING BEHAVIOUR BY BUMBLEBEES ON NATURALISED *FUCHSIA MAGELLANICA* IN IRELAND

by Dara A. Stanley and Emmeline Cosnett

Most bees and other pollinating insects visit flowers to collect nectar and pollen which they use as food. However, not all bees can visit all flowers, and that is because bees differ in size and shape which can determine whether they can access the flower. Tongue length is one character that can vary a lot between bees, and some bees have long tongues that can reach to the bottom of longer flowers to get nectar, whereas other bees have shorter tongues and so can only get to nectar that is in shallower, more accessible flowers. However, some bees have learnt to “cheat” the system, and instead of getting nectar by entering the flower, they bite a small hole in the flower next to where the nectar is found and drink it that way instead. This behaviour is known as “nectar robbing”, and can be especially common where a short-tongued bee can’t access a long-tubed flower the right way.

We carried out detailed observations of a plant originally from South America, *Fuchsia magellanica*, that is now commonly found along Irish roadsides and in other places, mostly in the south and west of the country. In South America, this species is mainly pollinated by hummingbirds who hover to access the flower and have long beaks that can get the nectar which is down a long tube. We found that in Ireland *F. magellanica* is largely visited by bumblebees, and that bumblebee species with shorter tongues can “rob” the flowers by making holes to extract the nectar without entering the flower. Although this robbing behaviour wasn’t common at all sites, it was found most often at the site with the largest number of short-

tongued bees, and this is interesting as other work has showed that bees can learn nectar robbing behaviour from each other. However, size mattered; the longer an individual *F. magellanica* flower was, the more likely it was to be robbed by a bee.



A common carder bee (*Bombus pascuorum*) visiting a *Fuchsia* flower the right way! This species has a medium length tongue that isn’t quite long enough to access nectar at the base of the tube – but if it strains really hard and sticks its head into the flower it can make it work!

As well as showing that hummingbirds are replaced by bumblebees as flower visitors for this south American plant in Ireland, our work suggests that longer flowers are more likely to be nectar robbed by bees, indicating that robbing behaviour is probably driven by size constraints. A next step would be to see whether nectar robbing affects the ability of the flowers to set seed and reproduce.

