The world's most variable flower

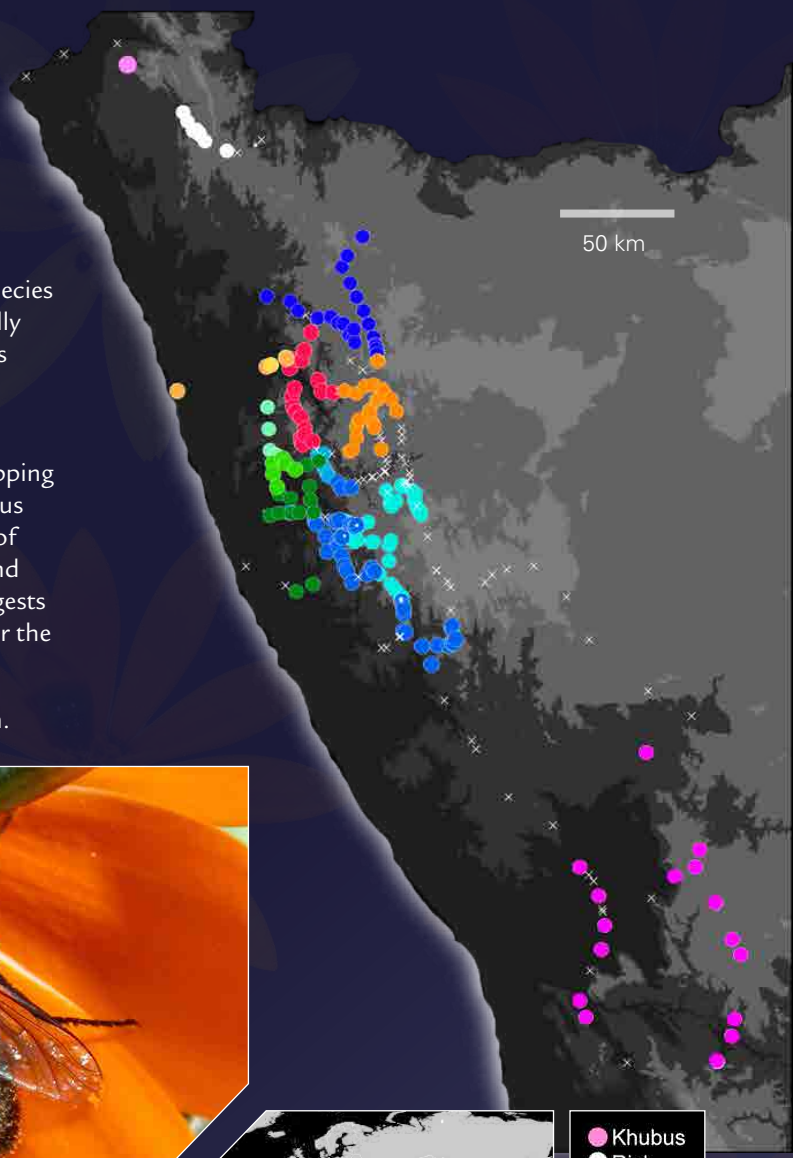
The picture (left) shows variation in Gorteria diffusa, *the South African annual daisy. The flowers attract male bee flies of the species* Megapalpus capensis. *The flies are thought to be attracted to the marks and spots at the base of the petals. Here, they attempt to mate with the spots which they appear to recognise as females. In doing so, the males become covered in pollen. This makes* Gorteria diffusa *the only non-orchid to exhibit sexual deceit pollination.*

Scientists from the University of KwaZulu-Natal used the species to test the pollinator-shift model, which attempts to partially explain the huge variety of flower types. This model suggests that flower types differ because they are evolving to attract different pollinating insect species.

They found 13 separate flower types which had non-overlapping distributions in the Namaqualand region of South Africa plus one other in a region called the Little Karoo (see map). 11 of these variants were studied and in every case they were found to be visited by the fly *Megapalpus capensis*. This strongly suggests that the pollinator-shift model is not a good explanation for the existence of these many types.

Studies continue into the cause of this remarkable variation.

A male bee fly hopes to mate with a female; instead, it becomes covered in pollen.



Main illustration and map from The evolution of floral variation without pollinator shifts in *Gorteria diffusa,* Allan G. Ellis and Steven D. Johnson, American Journal of Botany 96(4): 793–801. 2009.