

BOTANY

M. Birtchnell from Deakin University treated the September meeting of the Botany group to an informative talk on the Flowering Patterns in melliferous (nectar producing) eucalypts. Because of their dominance and long life span the flowering patterns (flowering frequency, intensity, timing, duration and nectar production) of Eucalyptus are very important to ecology. Melanie has documented the spatial and temporal flowering patterns and nectar production of many Eucalyptus species. Her results so far have provided knowledge of flowering patterns that may be useful in the sustainable management of resources in our forests and woodlands.

In the 1920's Victorian Foresters began to document flowering /budding data with the help of local apiarists. Apiarists hold a wealth of knowledge, derived from several generations' observation, as their livelihood depends on their understanding of Eucalyptus flowering cycles and nectar production.

To statistically identify significant relationships between rainfall and flowering patterns Melanie conducted personal interviews with 25 apiarists each having over 30 years experience and working over 350 hives. She visited their local reserves to ensure she understood the vegetation they were referring to. Their intimate knowledge of flowering provided area specific information the flowering patterns and nectar production of 28 species although each apiarist used an average of only 10 target species.

Notable wheel like graphs illustrated the flowering pattern of each species so that the length and colour of the spoke represented each interviewee's knowledge of its flowering characteristics in their area. Many interesting flowering patterns were noticed and may be explored in further work. Some examples are; *E. macrorhyncha* (Red Stringybark) flowers well 1 in 7 year, *E. melliodora* (Yellow Box) has a long flowering duration, some species flower better bi-annually, flowering timing is dependant on latitude, altitude and flooding regime, dry sites flowered less frequently and *E. microcarpa* (Grey Box) flowers more frequently in logging areas.

We learnt how the life of an apiarist is not easy. They reconnoiter, to find good sites 18mth ahead, using binoculars to look for good growth in tree-tops. Their activities are based on a few principles; general budding is proportional to flower intensity, mature trees have greater bud volume than young trees, buds less than 10cm don't flower but flowering is not necessarily related to nectar production. From years of observations they know that some species have a shorter lead-time eg. Mallee species take 6 weeks to bud after rainfall while *E. camaldulensis* takes from 12 to 18 months. Many other factors, like insect activity or hot north winds can cause buds to drop and reduce the potential production. Using information from the Bureau of Meteorology and networking with apiarists in Victoria and beyond they build up a mental picture of what budding to expect, where and when. Generally they believe that if over 70% of the trees have good budding it is worth transporting their hives to the site.

In her future work Melanie will seek to study, understand and predict when Grey Box will produce the toxic nectar that kills many hives. To this end she would like any one who notices "drunk" bees that soon die from diarrhea to contact her at melanie.birtchnell@deakin.edu.au.

Melanie's work and the cooperation of the apiarists have documented a great deal of valuable information for this and future generations. Thanks Melanie I now appreciate that the poor germination of *E. macrorhyncha* this year might not have been preventable. I hope this information can be used to manage our forests sustainably.

Jenny Porter