

What Are Meconopsis Made Of? David Rankin

The talk was shorter than intended.

David started his talk by the question: - How are meconopsis related to one another?

It is possible to find the answer to this by comparing their DNA.

DNA analysis is now much cheaper than ten years ago, For instance in 2001 it would have cost thousands of pounds per million letters, in 2017 this had been reduced to pennies per million letters. In 2018 the analysis is being done for free for The Meconopsis Group.

Diversity Array Technology sequencing (DArTseq) will be used to compare the DNA of different Meconopsis.

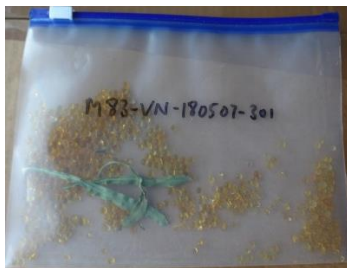
The procedure will be carried out by Jason Carling, in Canberra, Australia.

He needs leaf samples from us in order to compare them.

The procedure to prepare the leaf samples is as follows:

1. Collect samples (10 sq cm) of leaves
2. Dry with silica gel
3. Take photographs of each specimen plant
4. Label, keep records
5. Send samples to Australia

The samples must not be contaminated with other DNA so the person collecting them uses gloves and places them into a labelled bag.



The photographs taken of the specimen plant help to link it to the numbered sample. Records are kept of all the leaf samples and photographs.



What does Diversity Array Technology sequencing (DArTseq) do?

1. It targets the most significant part of genome (about 1.5 %) avoiding repetitive DNA fragments
2. 'Next Generation Sequencing' gives the letter sequence
3. Each individual studied can be compared with all others

So far five people have collected 130 samples from 65 plants.

What do we hope to discover?

Sections

- a) How different is the DNA between the different sections of Meconopsis?
- b) Are species within the sections consistent?

So far 11 sections/ series (out of 19) have been sampled.

Species

- a) How different is the DNA of different species?

So far samples have been taken from 18 species comprising 23 taxa.

Hybrids

- a) Can we work out their parents?

So far samples have been taken from four hybrids.

Varieties

- a) Can we distinguish varieties from their DNA?
- b) Can we work out their parents?

Samples have been taken from four named clones.

What next?

So far only a few people have been involved. The Group hope to include more members collecting samples especially those that grow unusual species.