

Hughie Jones - December 2014

Scotch Heather (*Calluna vulgaris*) - Plants in Poetry
Ericaceae

*I never saw a Moor-
I never saw the Sea-
Yet I know how the heather looks
And what a Billow be.*

*I never spoke with God
Nor visited in Heaven-
Yet certain am I of the spot
As if the Checks were given-*

Emily Dickinson (1839-1886) - Emily believed the poet was the prophet of the soul.

Although Emily was a recluse who isolated herself in her 'dear home', the heather mentioned in her poem is widespread. It grows in western Europe and Asia, North America and Greenland. Heather was despised until the 19th century because of its associations with the most rugged rural poverty. I am sure Emily would not have approved of that. In her poetry she had the trick of enhancing the small or more often diminishing the large.

And there is a bit of both in the family *Calluna vulgaris* belongs to. *Ericaceae* is a large family of 124 genera and 4,050 species with many ornamental plants both big and small - from arbutus and rhododendron size to heather and gaultheria. Heather (*C. vulgaris*) has only one species in its genus, whereas heath (*Erica*) has over 500 species, mostly from South Africa.

In the past Emily Dickinson was dismissed as a poet. In 1915 Fred Lewis Pattee called her poems 'mere conceits, vague jottings ... They should have been allowed to perish as their author intended.' But now she is seen as one of the great poets of all time.

Today heather honey is a highly valued product in moorland areas with many beehives being moved there in late summer. But it wasn't always valued as it is today. In the past heather honey was dismissed for its characteristic strong taste and unusual texture. It is 'thixotropic', a jelly until stirred. Then it becomes a syrup like other honey but sets again to a jelly.

So we see that poets and plants have their high and low times. Emily Dickinson and *Calluna vulgaris* are both well regarded today.

Besides poetry and honey, how does heather survive and flourish in such barren environments?

It is because of a special mycorrhiza that heather has. Mycorrhiza is a symbiotic interaction between fungi and plant roots that developed very early when plants began to colonize land. Mycorrhizas originated over 450 million years ago. More than 6000 fungi are capable of forming mycorrhizae, and at least 95% of the vascular plants of today have mycorrhizas associated with their roots.

The mycorrhizas of plants of mountain moorland and lowland heath (*Calluna*, *Erica* and *Vaccinium*) are called Ericoid endomycorrhizas. With endomycorrhizas the fungal structure is almost entirely within the host root. The root looks normal.

The Ericoid endomycorrhizas improve nitrogen and phosphorus uptake by the plant - the nitrogen being derived from the fungus breaking down polypeptides (chains of amino acids) in the soil. In extremely harsh conditions the mycorrhiza may support the host with carbon nutrients (again from polypeptide digestion). Normally though the fungus takes photosynthetically produced carbohydrates from the plant host.

But the natural world doesn't need to think about poetry and mycorrhiza. As a native plant, heather is an important food source for various sheep and deer which graze the tips of the plants when snow covers low-growing vegetation. Grouse feed on the young shoots and seeds and the larvae of the small emperor moth too.



Scotch heather (*Calluna vulgaris*)

Sources: American Poetry and Prose - Foerster; Flowering Plant Families of the World - Heywood, Brummitt, Culham, Seberg; <http://en.m.wikipedia.org/wiki/Calluna>; 21st Century Guidebook to Fungi - Moore, Robson and Trinci: Cambridge University Press