



Bulbous buttercup

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Cross the field looking for bulbous buttercups with their turned back sepals in spring. In summer, look for burnet moths emerging from cocoons on grass stalks. Darwin recorded them pollinating pyramidal orchids.



Burnet Moth on Pyramidal Orchid

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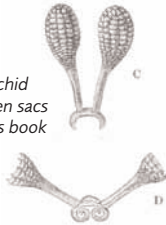
Look back to the Sandwalk hedge which Darwin planted with hawthorn in the 1840s. In 1880 he observed an extra 19 plant species growing here including cherry, yew and hornbeam, 'presumably the seeds having been brought by birds (which) alighting on clipped hedge will cause more seed in dung to be dropped than those in the open field.' He also noted how the thorn trees escaped being browsed by cattle and protected other young plants which eventually outgrew and out-competed them



Cherry



Drawings: Pyramidal Orchid showing pollen sacs from Darwin's book on orchids



Yew



Hornbeam

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Pass through a gap in the hedge where holly grows. Darwin demonstrated how pollen from flowers on male holly trees was moved by bees to flowers on female trees, so that bad weather in spring was responsible for a lack of berries the following Christmas. On your right you can see Down House through the hedge. When Darwin moved to Downe he wrote, 'larks abound here & their songs sound most agreeably on all sides'. You can still hear them in nearby fields during summer.



Holly: male flowers



Skylark

Follow the footpath as shown.

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Cross the road to Great House Meadow, so-called because it belonged to the 'Great House' built on the site of Down House by Thomas Know in the 1650s. The meadow was part of the estate sold to Darwin so he could graze a few cows, 2 horses and make hay for winter. In 1842 Darwin spread a layer of chalk and cinders over part of the field; 29 years later he dug trenches to discover that this layer was now buried 7 inches (18cm) below the surface, due to the action of earthworms.

Cross the stile, descend 8 steps, turn L

14

Spindle: Look for all 3 flower types here. The nectar they produce attracts many small flies and beetles.



Soldier Beetle on Spindle flower lying in wait to catch small flies

As you continue, look R

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The thin, dry soil and warm, sunny slope means that plants have to be well adapted to take in water and not lose it too fast in dry weather. The difficult conditions encourage a great variety of plants with different ways of surviving. For example, some have deep roots, others have leaves close to the ground, are covered in fine hairs or flower and fruit before the driest months. They demonstrate the truth of Darwin's statement in 'The Origin of Species', that 'the greatest amount of life can be supported by great diversification of structure'. The plants provide food for many different plant eaters and the minibeasts and bigger animals which eat them, including lizards by day and slow-worms at night.



Salad Burnet leaves & flowers

Go through the gate and over the stile into Great Pucklands Meadow

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This was the site of the first count of plant diversity, when in 1855 Darwin and his childrens' governess, Miss Thorley, counted how many different species of plants grew here. At first Darwin found grasses very hard to identify and asked Joseph Hooker, the Director of Kew and a good friend, to check his identifications. He wrote to Hooker, 'I have just made out my first grass...it was the easy Anthoxanthum odoratum [sweet vernal grass] ...I never expected to make out a grass in all my life'. Look for this, and at the bottom of the field, where nutrients draining downhill have made the soil more fertile, for species such as hogweed.



Sweet Vernal Grass



Common Lizard

Slow worms

'When you reach road, turn L. At the T-junction turn R past Luxted Farm Cottages, then R again. Cross stile.

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Follow the hedge on your left for 500m; it was once woodland. Look for wild plum, field maple and old oak trees.



Wild Plum



Field Maple



English Oak



Hogweed



Please turn the page