

# Sward management in an arboretum and the basics of pruning trees and shrubs

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A FULL HOUSE OF 40 IDS MEMBERS gathered in the Arboretum mess room at Kew on 7 June 2006 on what was a glorious day to be spent in any garden and the morning began with a walk around the arboretum, looking at the different types of sward found under the established tree collections.

We can have the best specimens of trees in any garden, but if we don't set them off with spectacular under planting, trees planted in taxonomic groupings, as at Kew, can be quite dull and boring for the everyday visitor.

We broke the sward types down into the following bulb plantings:

- *Scilla siberica* 300K
- *Crocus vernus* 600K
- *Crocus tommasinianus* 'Whitewell Purple' 600K
- *Narcissus obvallaris* 140K
- *Fritillaria meleagris* 250K
- *Colchicum speciosum* with *Eranthis hyemalis* 250K
- *Camassia leichtlinii* 6K

All the above except for the *Colchicum* give a continuing flowering show from early February to late May (dependent on the weather patterns, as the start of flowering can vary by at least four weeks either way) and can be naturalised into most grass types, however there would be differing needs for the treatment and cutting regimes of the various swards.

*Colchicum speciosum* and *Eranthis hyemalis* were naturalised in open beds under mulch among the *Ilex* species collection along Holly Walk to provide more interest during the seasons along what can be a dull, dark walk, especially when the hollies have finished fruiting.

The planting of just over 2 million bulbs was led by and carried out in early autumn 2003 by Tony Hall, Manager of the Arboretum, the arboretum staff and volunteers, over a three week period, the numbers adjacent to the names reflecting the numbers of bulbs that were planted.

The crocus were planted by first stripping the turf from the area, rotovating the soil to a good tilth, hand broadcasting the bulbs, in order that a natural appearance is sought and finally running over the area with the tractor mounted rotovator to turn in the bulbs. Only one pass over is needed otherwise the bulbs are brought back to the surface, any bulbs left showing are pushed in by hand, before the area is treaded, raked and seeded with a grass seed.

The 140,000 *Narcissus* and 6,000 *Camassia* were planted using a specially designed attachment on the end of a 360° digger. The bulbs were planted in ribbons of small groups to take on naturally established clumps, winding through the trees at approximately twice their depth.

Probably the most difficult bulb to plant was *Fritillaria meleagris*, as this had

to be hand planted due to the small, delicate nature of the bulb. A pedestrian spiking machine fitted with hollow tines was used to spike the area and the bulbs hand inserted into the holes and later top dressed with compost to fill in the holes and flooded to settle the bulbs in.

The maintenance of these areas is fairly low, and once the bulbs have finished flowering and died back, the grass that they are naturalised in can be cut and brought in to a short grass-mowing regime if required. The mowing can be good to allow the summer heat to ripen the bulbs and prepare them for flowering the following year. Once the grass is cut it should be collected and taken off the ground to prevent thatch build up and to impoverish the soil. Over the years the bulbs have increased in numbers and continued to naturalise.

At the end of the walk before lunch we looked at an area where we have established yellow rattle, a semi parasite of grass. This has been introduced by seeding into the sward in spring as a natural means of weakening the strong, aggressive grasses to reduce the competition prior to introducing wild flowers and more bulbs, such as the small *Narcissus cyclamineus*.

The second half of the day, after a wonderful lunch by Linda was spent looking at the pruning of trees and shrubs in the arboretum.

A fine specimen in the woodland of *Pterocarya insignis*, a wingnut, wild collected from China was in full fruit and was the visual aid for a discussion on the principles of target pruning.

This was a good example to demonstrate the need to identify the branch bark ridge and the branch collar before attempting pruning and use this as a target for the final cut, hence the term "target pruning". Formative pruning should begin as soon as possible in the life of a tree by identifying where the permanent scaffolds should start on the main trunk and removal of the lower feathers back to the branch bark ridge with good, sharp secateurs. This will be far better than having to remove these branches later in life with a hand saw or even later with a chainsaw, ultimately leaving larger wounds for the tree to heal.

A golden rule is to prune back to the parent branch where possible, leaving a natural shape, rather than pruning back to a stump or a dead end branch which will never develop into a useful part of the tree's structure.

Tree paints are no longer used, providing that good "target" pruning is achieved and the branch bark ridge is not cut into, the tree will heal the pruning wounds without the aid of paints. Good callus will develop all around the wound in the shape of a "doughnut" with no dead spots at the top and bottom. The old practice of "flush cutting" broke down the tree's natural defensive barrier and encouraged dead spots at the top and bottom of the cuts, which potentially allowed infection from wood decaying organisms and ultimately decay.

When thinning a tree, the pruner must never remove more than 25% of the tree's leafing ability otherwise this will weaken the tree and place it under stress.

As we walked the arboretum we stopped at the occasional tree and discussed how we would carry out formative pruning, remembering that these are wild

collected trees grown from seed and never seem to grow into “text book” shapes as would cloned nursery stock.

The day finished by the Pagoda, with a demonstration of Philadelphus summer pruning before wandering back to the mess room in the Stable Yard for tea and a final word from our chairman Carol Gurney and Giles Coode-Adams, chairman of the Scientific and Education Committee, responsible for setting up these workshops.

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