Working at Bedgebury

A report on an autumn of volunteering in the Pinetum

From October to mid-December, I had the privilege of working at one of the world's most complete collections of temperate conifers at Bedgebury, with the aim of gaining experience working with, learning about, and contributing to the conservation of conifers - one of my main interests.

During October and much of November, I helped with the planting of trees in various parts of the Pinetum. Many were grown from seed in the nursery while others were from a range of botanical gardens, including the 'Nezahat Gokyigit Botanik Bahcesi' in Turkey and Sir Harold Hillier Gardens in Hampshire, as part of the international co-operation to conserve these species. Many are threatened; for instance one tree we planted, guaitecas cypress (*Pilgerodendron uviferum*) from southern South America has experienced a range decline of more than 30% since the start of the 20th century due to extensive logging, and was collected in the wild and grown at Bedgebury to conserve its genetic diversity.

A new addition to the Pinetum

The trees are grown in airpots™ which contain regular perforations which 'air prune' the roots as they grow outwards, the result being a denser root system with no spiralling roots thus enabling better and more rapid establishment when planted. The trees are mound planted, with base of the stem about 5cm above the ground to prevent pooling of water around the root collar. They are then surrounded by a circle of mulch to aid in weed suppression, around which is constructed a cage to prevent browsing (see above). This is a significant cause of damage and mortality to young plants in the collection. During these months we planted around 130 trees in this way.

A frosty morning in the Leyland Cypress collection

I was also tasked with helping Liz Randall (the database coordinator) with the Pinetum's database. This digital record of the 11,000 or so specimens in the collection is vital for storing information regarding the location, health, and origin of each individual tree and underpins the conservation objective of the Pinetum. One task was to identify, label and record several pine specimens which were not on the database. Each tree is given both a black, engraved plastic label with details such as the conservation number (indicating the management section in which it is planted and its unique number within it), scientific and common names and origin, as well as a small aluminium silver label with the conservation number only. This is because the varied fauna of Bedgebury enjoy gnawing both the black and silver labels to oblivion, so two labels help to ensure that the tree maintains at least one.

Also connected to the database was the

measurement of the trees in the Pinetum. The Royal Botanic Gardens Edinburgh had requested that the 600 or so trees it had donated to the Pinetum since 1996 be measured to assess their success in various growing conditions. This involved measuring DBH (diameter at breast height), overall height using a vertex™ (an expensive device which uses ultrasound to measure heights) and general condition.

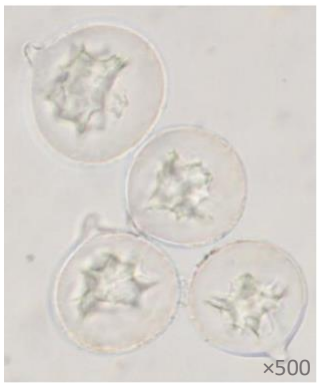
Several times near the end of my stay I completed checks of the unestablished trees in Churchill's Wood, which comprises assessing the status and condition of each specimen, loosening tree ties and removing cages to ensure that each tree can successfully become established. It was great to see that despite the collection having more than 11,000 trees, care is taken to ensure the wellbeing of each individual plant.

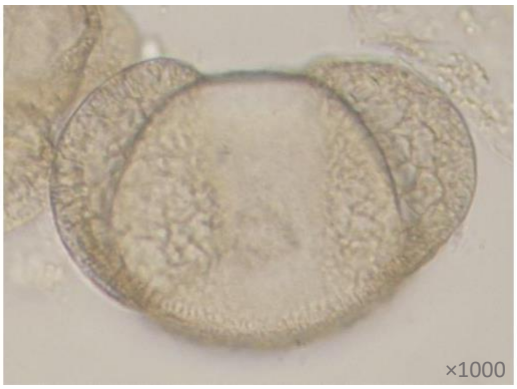
During my stay I was also asked to collect specimens of silver fir (*Abies*) for use in the research of a Chinese academic. It was then necessary to verify the specimens, many of which were unfamiliar to me, such as véjar fir (*Abies vejarii*), so I learned a lot. It was also great to be involved in the Pinetum's wider role as a scientific resource.

Abies vejarii, a distinctive grey-needled fir

During the time I volunteered at Bedgebury I made use of the extensive collection to study certain genera I am most interested in. For instance, Chinese fir (*Cunninghamia*) and Douglas fir (*Pseudotsuga*) focussing on identification and macromorphology (characteristics visible with the naked eye), but on returning home, also the micromorphology (using a microscope) of these species.

Clockwise from top left; Cone of Chinese Douglas fir (*Pseudotsuga sinensis*), a normal cone of *Cunninghamia lanceolata*, an unusual cone of the same species in which the basal scales are replaced by pollen cones, a pollen grain of cedar of Lebanon (*Cedrus libani*) showing the two air sacs that help keep it airborne, pollen grains of coast redwood (*Sequoia sempervirens*) showing prominent germination papilla.





The months spent working within Bedgebury's irreplaceable conifer collection has been a great learning experience which has both given me first-hand understanding of how the collection is maintained and taught me the skills of tree measuring, planting and identification. It was hugely exciting to have an active role in the conservation of such ecologically and economically important trees; exposure to such a diverse collection has motivated me to study further in the field of dendrology.

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