

Protecting our plants

The Garden's conservation botanist **Dr Natasha de Vere**, reports on the progress of The Rare Welsh Plants Project in safeguarding endangered species

The Rare Welsh Plants Project (RWPP) at the National Botanic Garden of Wales aims to conserve some of Wales's most threatened plant species by providing a firm scientific basis for their conservation.

For each species we identify what is needed most in order to maximise our conservation impact.

The RWPP is in collaboration with the National Museum Wales along with a number of organisations that we work with on individual species.

At the moment, this includes the Countryside Council for Wales, Plantlife, Botanical Society of the British Isles, Whitley Wildlife Conservation Trust, Chester Zoo and Exeter University.

We are currently involved with projects on wild cotoneaster, wild asparagus, spreading bellflower, meadow thistle, endemic whitebeams and endemic

hawkweeds. Here is an update on some of these projects:

Wild cotoneaster - *Cotoneaster cambricus*

The only site in the world for this plant is the Great Orme, Caernarvonshire, where there are only six original plants left in the wild. One of these plants had been propagated and used to re-introduce some individuals but the remaining five plants had not been cultivated. With so few plants in the wild it was felt that having representatives of all six individuals in cultivation was important. During April, horticulture teams from NBGW and Chester Zoo met on the Great Orme to propagate the wild cotoneaster using air-layering. This involved making a cut in the stem that is packed with moist moss and covered with waterproof plastic. Over the coming months hopefully new roots will develop



Air-layering the wild cotoneaster on the Great Orme

from the cut stem and we can remove the 'new' plants.

We also have some research to carry out on this species. At the moment few of the plants produce berries in the wild and no natural regeneration has been observed. We need to find out more about the ecology of this species to see why it is not reproducing successfully.

There is also some doubt about the taxonomic status of the wild cotoneaster. Opinions differ; some people consider it to be *Cotoneaster cambricus*, a native species, endemic to the Great Orme. Some suggest it is native *Cotoneaster integerrimus*, a species that is widespread in Europe, although the Great Orme is the only UK site. Finally, some consider that the wild cotoneaster has been introduced by humans; if this is the case then the need to conserve it is put into doubt. We plan to look at the DNA of *Cotoneaster cambricus* and *Cotoneaster integerrimus* to see if we can help to unravel this mystery.

Wild asparagus - *Asparagus prostratus*

This endangered plant is found in coastal areas of South Wales and SW England. It has been threatened by collecting, trampling and scrub encroachment.

Wild asparagus has separate males and females, and some populations are now only composed of one sex, so cannot reproduce. The UK Biodiversity Action Plan steering group for this species has used tissue culture to propagate some of the most threatened wild individuals.

We are beginning to pot on some of these plants at NBGW and hopefully these will form the basis of a future re-introduction programme.

Spreading bellflower - *Campanula patula*

This rare plant is found in the wild on the edges of woodlands in the Welsh borders. It is endangered in the UK and critically endangered in Wales, but very little is known about its ecology, and without this information we cannot conserve it. Along with Plantlife and the Botanical Society of the British Isles we will be starting to help fill in some of the gaps in our knowledge of this species.

Meadow thistle - *Cirsium dissectum*

The meadow thistle is not an inherently rare plant; instead it is an example of a species that has declined substantially throughout its range as its habitat has been lost. It is a key species of rhos

pasture, a wet grassland habitat that is of particular conservation importance in Wales. Meadow thistle frequently hybridises with the much more common marsh thistle, *Cirsium palustre*, but the implications of this hybridisation have never been studied. This project will begin to investigate the effect of hybridisation on these species. Does it have a negative effect on the meadow thistle as it becomes swamped by

the commoner marsh thistle's genes? Alternatively, does hybridisation have a positive effect leading to greater genetic diversity in meadow thistle populations? Or is hybridisation so rare that it makes no difference? In order to answer these questions we will be studying meadow and marsh thistles in the wild and also carrying out experiments here at NBGW.



Meadow thistle (*Cirsium dissectum*)



The air-layering team: from left, Mark Sparrow (Chester Zoo), Ann Maloney (NBGW), Richard Hewitt (Chester Zoo), Jess Gould (NBGW), Sarah Bird (Chester Zoo)