

Panel 1: The Wardian Case

Interest in finding 'new' plants soared during the 19th century. People wanted to bring the plants they'd seen on their travels abroad back home – but they faced a challenge. Their plants couldn't survive long voyages across the sea because of the lack of fresh water, low light below deck, and the salt water if they were kept outside.

This changed when amateur botanist Nathaniel Bagshaw Ward stumbled on the idea that would push the boundaries of gardening around the globe – the Wardian case. This air-tight, portable box acted like a miniature greenhouse that protected plants from salt water and maintained moisture, meaning they could survive long voyages. This allowed many plants to be introduced to new regions across the world, including the UK.

Why do you think people wanted to move plants around the world?

Panel 2: Pushing boundaries

The success of the Wardian Case influenced a 'gardening craze' in the 19th century as diverse plants and modern advances made gardening more interesting and easier. Gardening became more popular, and people began to recognize the benefits of plants to our physical and mental health. People that could afford them were eager to grow 'new' plants in their gardens and even in their homes, displayed in decorative Wardian cases.

The gardening craze was intertwined with British imperialism and expanding European empires. Very little thought was given to the impacts on the country of origin, nor to the long-term effects of moving plants to new places. As global boundaries were expanded, this

movement of plants transformed economies and the gardening tastes of people from around the world.

Panel 3: Global connections

Pushing boundaries was not without its consequences. Plants moved from regions including Africa and East Asia have left a lasting legacy. Yet our desire for plants from around the world continues.

Many public and private gardeners today grow a wider range of plants, and though most of these plants do not cause issues, there are a few that have become a problem. Without careful management, some of these plants have been known to escape beyond the boundaries of gardens.

How do you think plants from different climates might behave differently in new places?

Panel 4: Garden Escapers

Plants that can escape garden boundaries and cause harm to nature are known as *invasive species*. They can spread very quickly and be difficult to manage. In fact, they cost the UK £2 billion every year! These invasive species can have other negative impacts too such as:

- Curly waterweed can clog up our rivers and lakes, such as Llyn Padarn in Eryri National Park. This disrupts leisure activities like canoeing and fishing.
- Some cotoneasters are threatening rare plants and animals, as seen on the Great Orme in Llandudno.
- Japanese knotweed can degrade wetlands, damage properties and sewers, and take years of the right treatment to remove effectively. It can be found across North Wales.

Do you think Nathaniel Bagshaw Ward thought about the consequences of his idea?

Panel 5: Climate Change and legislation

Climate change will make the problem of invasive species worse. Changes to temperature, humidity, and rainfall could create favourable conditions for plants – that have so far had no, or very little, impact – to thrive and become a threat as invasive species. This could limit nature's ability to help manage climate change and may worsen the decline of our precious plants and animals.

The effects of invasive species mean it's illegal to grow certain plants or allow them to spread beyond the boundaries of gardens under the Wildlife and Countryside Act (1981). However, not all invasive species are covered under legislation. It's important that we all take responsibility for protecting nature and people.

Panel 6: What can you do to help?

If you have a garden, look after a patch of land in your area, or know somebody who does you can join the **Be Plant Wise** campaign to tackle invasive species.

- Choose the right plants for your garden.
- Keep your plants within your garden boundary.
- Dispose of unwanted plants, roots, seeds, and weeds responsibly.

If you find a plant growing out of control or that is difficult to manage this could be the next invasive species You can report this activity on Plant Alert.

By tackling invasive species, you can support North Wales Wildlife Trust's mission to protect and restore nature in North Wales.