Japanese Knotweed: curse of the alien species

Importing tiny insects to tackle Britain's Japanese knotweed problem could easily backfire on us, warns Michael Leapman.

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Japanese knotweed in Cornwall: Victorian gardeners loved the tall, leafy newcomer but now it is recognised as the most invasive and damaging weed in the country Photo: Alamy

Meddling with nature is always controversial. In the early 18th century, when the London nurseryman Thomas Fairchild produced the first known hybrid between two flowers (a carnation and a sweet william), he was denounced for interfering with God's great plan for the universe, and as penance was persuaded to bequeath a hefty endowment to his local church.

The same reluctance to see man's will imposed on the rightful province of the Creator lies behind the widespread suspicion of genetically modified crops, as articulated by the Prince of Wales. Yet such theological considerations have never deterred adventurous plant-hunters from travelling the world and bringing home exotic specimens to furnish their gardens and impress visitors.

It is not always a good idea. For one thing, many of the imported plants fail to adjust to conditions very different from their native habitat. But the real problems arise when they adjust only too readily.

We do not know exactly who brought the first Japanese knotweed to Britain from Japan in the second quarter of the 19th century, but he has a great deal to answer for. *Fallopia japonica* is now recognised as the most invasive and damaging weed in the country, even forcing its way through cracks in walls and pavements. It can grow to 13ft and has proved almost impossible to control.

Now the Department for the Environment, Food and Rural Affairs (Defra) believes it has found a solution. Great news – but wait. The downside is that it involves introducing another alien species from Japan, this time a tiny brown bug, just 2mm long, called the psyllid *Aphalara itadori*. And who knows whether, in the long term, this might turn out not to be such a good idea either. For bringing in fauna from overseas has historically proved at least as hazardous as the importation of foreign flora.

The psyllids are a very large family of insects known collectively as "jumping plant lice". Their peculiarity is that each individual species feeds on only one kind of plant. Most psyllids are classified as pests, attacking crops of pistachios in California, eucalyptus in Chile, potatoes in Colorado, olives in Spain, pears in France and carrots almost everywhere.

A bug is a pest only if it eats something you want to cultivate. When its preferred diet is in itself pestilential – such as Japanese knotweed – it becomes the farmer's and gardener's friend and ally. And it is due to their specialised taste that future generations of hungry *Aphalara itadori* will find a welcome and a square meal in our green and pleasant land.

What if, though, once they arrive, the wind carries them to places where no knotweed grows? Will they develop a taste for pears or carrots, like their cousins? The Commonwealth Agricultural Bureau International, which is managing the introduction, assures us that this will not happen. Its experts say they have tried breeding the mites on 90 other plants, but they survive and feed only on the knotweed. When they are fully grown, they devour it hungrily – although given the respective sizes of the bug and the weed, one plant must be good for several meals.

Yet the history of importing exotic life forms to our shores suggests we should be cautious in welcoming the psyllid. For many creatures are adept at changing habits to fit in with a new environment.

Take the parakeet, until recently regarded as a native of far warmer climes than our own, yet now flourishing here, especially in south-west London. Some say the dazzling green birds began to settle around Kew Gardens in the 1950s, after a lorry hit a low bridge while taking a cage full of them to the film set of *The African Queen*.

Others blame Jimi Hendrix, who released a male and female in Carnaby Street as a stunt in the Sixties. Whatever the truth, they have learnt to adopt a new diet by stripping hundreds of decorative trees of all their leaves. They are fast outstaying their welcome.

Then there is the mink, first brought from America to Britain for its fur in 1929 and kept in captivity until some escaped 20 years later and established themselves in the wild. Today they thrive, preying on fish and on much-loved native mammals such as the water vole.

The most notorious incomer of all is the grey squirrel. It also came from America towards the end of the 19th century, brought in by animal-lovers seduced by its winsome charm. Yet when it arrived it turned aggressor, competing successfully with the smaller native red squirrel for food and habitats, until today the reds are being driven ever farther north. Very few survive in the south.

Not only Britain falls victim to such ill-advised introductions: sometimes we have exported rather than imported trouble. In 1859, the first rabbits sailed from here to Australia, where today they are among the most serious and prolific pests, wreaking costly damage on crops and horticulture.

The Japanese knotweed itself provides evidence that plants are just as likely as animals and birds to conceal a sting in their superficially attractive tails. When it was introduced, Victorian gardeners took to it instantly: they loved tall, leafy architectural plants, especially those with heart-shaped leaves.
William Robinson, the most influential garden writer of his day, recommended planting it in clumps of two or three.

Richard Mabey, in his classic work *Flora Britannica*, describes what happened when the knotweed's invasive habit became all too apparent: "When their formidable powers of colonisation were realised, they were thrown over the garden wall on to railway embankments and rubbish tips. From these strongholds they advanced even further, able to sprout from the smallest fragments of root as well as by the remorseless extension of their whole root systems."

The knotweed, although the most virulent plant to have betrayed the well-meaning folk who introduced it, is not the only one. In the late 18th century the *Rhododendron ponticum*, with its spectacular large pink flowers, came to Europe from the Caucusus, and soon became the must-have shrub for Georgian gentry building their large houses in extensive grounds.

At first it did not matter that the shrubs seeded themselves uncontrollably, quickly spreading into vacant ground. Before long, more colourful and less prolific varieties had been imported from

the Far East; but the ponticum had by then established a foothold in the British countryside that it would not surrender. Today, in parts of Wales and the West Country it is regarded as a menace, cutting swathes through lesser plants as it marches onwards.

Another Victorian favourite that turned sour was the giant hogweed, or cow parsnip. It can grow just as high as the Japanese knotweed and was brought to Britain at about the same time. Again, its "bold foliage" was lauded by William Robinson, and it was even planted in the grounds of Buckingham Palace. Once it escaped beyond the beds and perimeter fences into woods where walkers would inadvertently brush against its leaves and flowers, it was recognised that it contains a toxic sap that irritates the skin and forms weals. By that time it had spread too far to eradicate.

On a smaller scale, the fate of the British bluebell hangs in the balance after the fairly recent introduction of the tougher, paler Spanish variety. They can easily be told apart: the Spaniard stands erect, with bells on all sides of the stalk, whereas the Brit, with bells on only one side, bows its head with charming modesty. There are fears that the coy native flower could be overwhelmed by the more assertive newcomer.

For all these reasons, introducing one alien species, the psyllid, to control another, the knotweed, could be a risky enterprise. Biological control sometimes works but is at its most effective and manageable in confined spaces. For instance, in greenhouses where the red spider mite thrives, its natural predator, the mite *Phytoseiulus persimilis*, can make short work of it. And nematodes – tiny invasive grubs – can eat their way through pesky slugs and snails over a limited area of the vegetable garden, without escaping elsewhere.

But letting flocks of tiny insects loose to blow in the wind seems altogether more reckless. Let us hope the experts have got it right, and that the jumping lice will stick rigorously to their Japanese knotweed diet. I know I shall be keeping a particularly close eye this summer on my potatoes and carrots, looking out for tiny brown creatures on the leaves.