




THE PLANT THAT ATE BRITAIN

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**MATT RUDD ON THE UNSTOPPABLE
RISE OF JAPANESE KNOTWEED**

INVASION OF THE KILLER WEED



It's eating our gardens, destroying our houses and ruining our lives. Can anything free us from the insidious grip of Japanese knotweed?

By Matt Rudd. Illustrations by Joe Wilson

IN April, the Black Country coroner ruled that Dr Kenneth McRae had bludgeoned his 55-year-old wife, Jane, to death with a bottle of perfume before killing himself. McRae had convinced himself that their home was being invaded by Japanese knotweed. In his suicide note, the lab technician wrote: “I believe I was not an evil man, until the balance of my mind was disturbed by the fact there is a patch of Japanese Knotweed which has been growing over our boundary fence on the Rowley Regis Golf Course.”

“Jane and I were a very private couple, we chose to have no real friends, just enjoying each other,” he continued. “But the despair has got so bad that today I have killed her, as I did not want her to be alone without an income when I killed myself.”

Of all the reasons to bludgeon a spouse, you would think that a weed in your back garden was pretty low down the list. McRae's is the most extreme example of thousands of lives blighted by this invasive plant. An estimated 220,000 homes now have it and that figure is growing exponentially.

In a single Tuesday morning at the headquarters of Environet, a firm specialising in the eradication of Japanese knotweed, the phone rings 20 times. The calls come in varying stages of hysteria. No one is about to bludgeon a spouse, but some callers haven't been sleeping. Some are in tears. Others haven't got knotweed at all; they just have something similar and an overactive imagination. “Our first job is to calm them down and do an identification,” says Environet's Mark Thompson. “If it is knotweed, we put a plan of action in place.”

In 2011, a Hertfordshire couple came close to demolishing their £300,000 new-build home after knotweed from adjoining derelict land started coming up through their floorboards. In 2004, the plight of Boscastle residents — already struggling after half their village was swept away in the floods — was exacerbated by a plague of knotweed washed downstream from an allotment.

As of 2012, mortgage lenders started rejecting loans outright if knotweed was found on a property. Even an infestation on neighbouring property can now be enough to put them off. In the post-sub-prime age, when too many haircuts or too many takeaways can be enough to ruin a mortgage application, a weed that eats asphalt for breakfast, pushes through paving slabs by lunch and will be settling into your conservatory by dinner is a deal-breaker.

Officially, the banks claim they will examine each application on “a case-by-case basis”, but you don't have to look hard to find property owners trapped and unable to move because knotweed has made their homes unsellable. Take Marie, for example, who had been planning to move from west London to Kent until an eagle-eyed surveyor spotted just one knotweed stalk growing at the back of her garden. “I was on the cusp of

selling, the paperwork was ready to go,” she says. “I knew it was quite bad, but I didn't understand how bad until I investigated it further.”

To cut a stressful story short, Marie's sale fell through. Instead of moving, she found herself in a terse exchange of legal letters with a neighbouring care home. Two years after experts came in to remove the weed at a cost to the neighbour of £20,000, she managed to find a new buyer. “The house was worth £400,000 but I had to sell for £355,000,” she says. “Even though the knotweed was gone, the sale was still blighted. At the same time, I had to pay £60,000 more for the home in Kent. I lost a fortune because of that one stalk. It's a very frightening issue.”

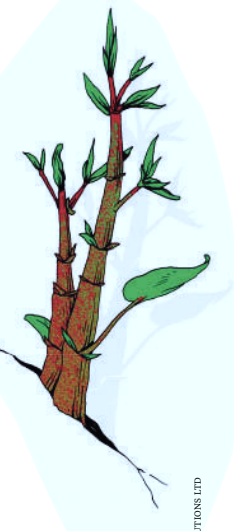
At least she's through it. Sarah managed to move, even though her neighbour's garden in Bromley has a stand of knotweed. But the house she moved to had it as well. “Our first mortgage company turned us down outright when the surveyor saw it,” she says. “The second one approved the application but only if we promised to get it removed professionally. The problem is our neighbour: her whole garden is covered in it but she's not moving and she doesn't want to pay up. It's pointless getting rid of the stuff on our side. It will just grow back.” Sarah now faces a legal battle with the neighbour or she will lose her mortgage. “I wish we'd never moved here,” she says.

TO understand how Japanese knotweed spread its evil tendrils across Britain, we must go back to the very beginning. It lurked undisturbed on the high-altitude slopes of Japanese volcanoes. And then, one possibly sunny afternoon in the 19th century, a European explorer turned up in starched shorts and a deerstalker, saw the superficially attractive plant and promptly bottled it for his collection.

The explorer, the man who would cost Europe hundreds of millions doing battle with knotweed, was Philipp von Siebold. Appointed expedition doctor to the Dutch trading settlement in Japan, he had full access to

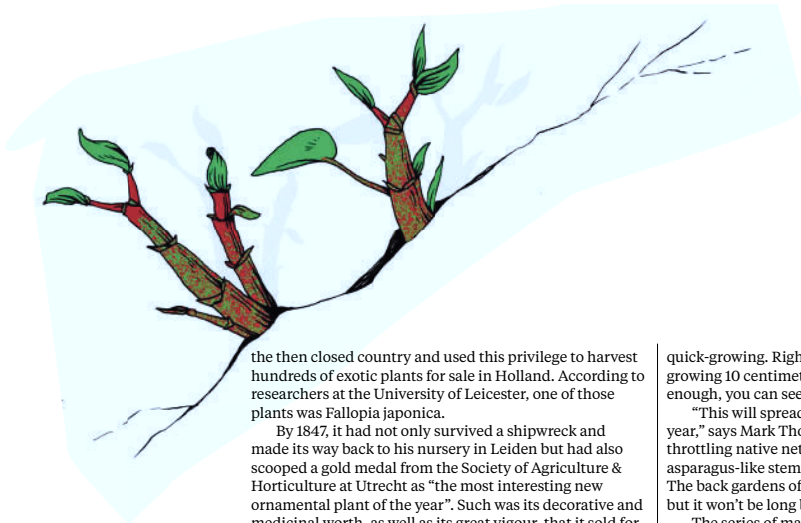


SITTING PRETTY
Domesticated knotweed can be deceptively easy on the eye — it was once used in bouquets



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ILLUSTRATIONS BY JOE WILSON FOR THE SUNDAY TIMES MAGAZINE



the then closed country and used this privilege to harvest hundreds of exotic plants for sale in Holland. According to researchers at the University of Leicester, one of those plants was *Fallopia japonica*.

By 1847, it had not only survived a shipwreck and made its way back to his nursery in Leiden but had also scooped a gold medal from the Society of Agriculture & Horticulture at Utrecht as “the most interesting new ornamental plant of the year”. Such was its decorative and medicinal worth, as well as its great vigour, that it sold for 10 times the price of Japanese hydrangea. Over the next decade, it was marketed as cattle forage, a stabiliser of sand dunes and a beautiful flower for bouquets. Gardeners couldn't get enough of this “inextirpable” piece of Far Eastern exotica.

On August 9, 1850, knotweed crossed the Channel. The post room at the Royal Botanic Gardens, Kew, received a specimen of the plant from Siebold and, rather than burn it and send an angry letter back, they added it to their collection. And that was it. The trifids had arrived. Not long afterwards, British nurseries began selling it with as much enthusiasm as the Europeans. William Robinson, the Victorian era's Monty Don, advocated its use in informal bedding in his bestselling book *The Wild Garden*, while Gertrude Jekyll, the original Carol Klein, thought it was excellent flanking material for a woodland walk. “We ought not to forget the quick growing ways of the great Japan Knotweeds growing fast and tall,” she wrote in the 1900 edition of *Home and Garden*. None of them had worked out that it was uncontainable.

Standing next to a golf course on the outskirts of Cobham, I can see why they were excited, and why we should be afraid. Before me towers a full stand of knotweed, more than two metres high and a good 20 metres across. It is certainly informal. And tall. And

quick-growing. Right now, in early summer, it will be growing 10 centimetres per day. If you watch it closely enough, you can see it grow.

“This will spread several feet in every direction each year,” says Mark Thompson. Around its edges, tendrils are throttling native nettle and bramble. Further out, asparagus-like stems are sprouting through fresh earth. The back gardens of a leafy cul-de-sac are still a way off, but it won't be long before the weed reaches their fences.

The series of maps below, recording how knotweed first took root and then rampaged across the country, paint a gruesome picture. On the 1900 map there is but a harmless sprinkling of dots. The dots thicken out through 1940 and 1970, despite the fact that gardeners had long since clocked just how invasive the species could be. (In 1981, it became one of the first plants to make it onto a list of prohibited species in the Wildlife and Countryside Act, but by then it was too late.)

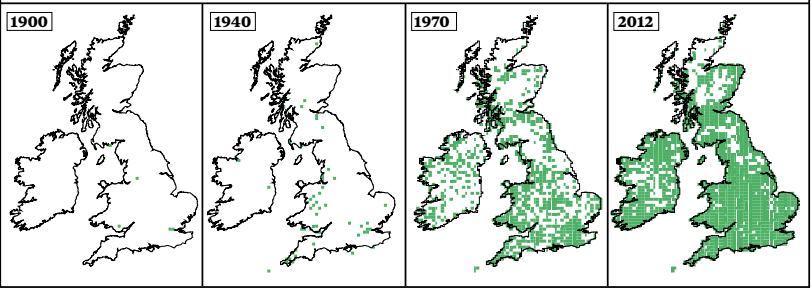
When the 2014 map is compiled, it will be a solid block of colour. Apart from a couple of patches in the very remotest parts of Scotland, the map will be all dots. Even the Shetlands are infested. Experts agree that, as of 2014, it is now... everywhere. It is the Year of the Trifids.

Remarkably, knotweed has never spread by pollination in Britain — no seeds carried on the wind have germinated on these shores. All male plants but one (which probably should be kept in maximum security, but in fact sits unfettered in a botanist's garden) are sterile. Every single plant in the country shares the same DNA as that first plant Siebold bottled. It spreads purely by regeneration, from small pieces growing into whole new plants; how easily is the key to its domination.

James MacFarlane, a vegetation adviser for Cornwall, a county which has found itself on the front line of the knotweed battle, set out to establish just how small a ➤➔

Red alert — the rise of knotweed

This series of maps shows how knotweed has taken root in Britain over the past century



A sight to strike terror into the hearts of homeowners — knotweed infestations can render houses unsaleable



piece could regrow itself. Previous studies had concluded a 0.7g snippet of subterranean stem or rhizome, roughly the size of a big toenail clipping, was enough to spawn a viable plant, but MacFarlane proved that a 0.06g fragment, the littlest of little fingernail clippings, could still take root.

Every time a gardener attempts to dig it up and dump it, or strim it, or Flymo it, or compost it, or take it down to the dump, it spreads. It relishes disturbance.

Although it is now classified as controlled waste, it still finds its way into local council composting plants, and then into your gardens. Buying compost from the local dump is, I'm warned, "like buying your very own knotweed starter kit".

Areas with particular epidemics can become depressed. "It's like having boarded-up shops and burnt-out cars," says one estate agent. "Developers aren't interested. Why would you pay 10% on your development costs when you can go half a mile down the road and find a site without knotweed?"

To make matters worse, knotweed is very hard to kill. This, after all, is a monster that prospered where no other plant could, in the inhospitable lava fields of Japan. You can't just use Weedol. You can't just dig it out with a spade. The root system is three metres deep.

Environet has an industrial digging and sieving system to remove every last little fingernail. It's quick but it's expensive. Many gardening websites suggest you can kill it with herbicide, but, according to Thompson, this is a far from straightforward solution best left to the professionals. He would say that, but a botched attempt at eradication can drive your enemy underground where it can remain dormant for up to a decade. Once the coast is clear, once you've built your nice, new conservatory, up it pops again. The trick is to poison it slowly, subtly, so it won't notice, like an Agatha Christie nun slipping drops of arsenic into the vicar's nightly bowl of soup. The process can take up to five years.

Given that, by conservative estimates, knotweed costs the country £165m a year, should we not have a more

unified approach to the problem? Devon and Cornwall have knotweed task forces. Swansea has the knotweed equivalent of a Swat team (his name is Sean Hathaway, knotweed officer in the planning department). But call up most other councils (we tried six) and the best they'll do is refer you to the Defra website.

The European Parliament recently agreed tougher action against a list of around 100 invasive species, but we won't know until next year if knotweed has made the list. Legislators may conclude that it is simply too expensive to deal with. It is the elephant in the garden.

There is a plan, though, an attempt to fight fire with fire, or, more specifically, weed with bug. At the Centre for Agricultural Bioscience International (Cabi) near Windsor, Dr Richard Shaw is standing in a greenhouse surrounded by knotweed plants. Each plant is covered in a white shroud. The shrouds shiver in the breeze, which is, frankly, the stuff of plant-based horror movies. But Dr Shaw and his greenhouse full of ghoulish weeds is our best and only hope for tackling Britain's most invasive weed.

"Every plant has its niche, its area and its geographical barrier and that's the way it should be," he says, unruffled by the plants shuffling around behind him. "Specific insects adapt to specific plants, and you end up with a suite of natural enemies. There are 186 species of insect which feed on Japanese knotweed in Japan. There are zero here."

Over the past decade, Dr Shaw and his colleagues have been whittling the 186 knotweed-eating bugs down to one that might work as an effective biocontrol here in Britain. The winner is a psyllid which, to the point of starvation, only eats knotweed. This is important. The last thing you want when you release an exotic bug to combat an exotic plant is for the exotic bug to start attacking everything else as well.

None of our native insects likes the taste of our monophagous psyllid. This is also important because if your exotic bug becomes the lunch of choice for any native insects, the ecosystem is upset. You might end up with a plague of ladybirds, the sort that repelled people from the beaches in Norfolk in 1976.

So here we have this one super-specialist bug that eats nothing else and is eaten by nothing else. Four years ago, after extensive tests in quarantine, it was released at eight top-secret sites around the country. Next year is the final year of this field trial, after which Dr Shaw must make his case for a wider release. Can he be certain there will be no unintended consequences?

"We are introducing an organism that wasn't present before and there will be some interaction," he says, "but you've got to look at the do-nothing option. If we do nothing, the knotweed will continue to do what it's doing, which is displacing everything and reducing biodiversity. Doing nothing is not a safe option."



Know your enemy — how to spot knotweed



Spring
Watch out for thin, bamboo-like stems that start to sprout in early spring and can grow up to 7ft long. The early shoots have a dark, reddish-purple colour before developing into light green stalks



Summer
The stalks become speckled with purple spots over the summer months. The plant produces beguilingly delicate white flowers that hang in clusters from the stalks. The large shovel-shaped leaves are a lighter shade of green underneath. They grow from the stem at staggered intervals



Autumn
By early autumn, the canes start to lose their colour and turn into woody stalks that take years to decompose. These stems then die back to ground level in winter. New stalks will spring up between the dead ones early the following spring

Knotweed is no shrinking violet — even an asphalt road surface can't stop it rearing its head



Will it be successful? "It's too soon to say. It took six years to establish the grey squirrel. It took 10 for a rust that controlled black myrtle in South Africa to have any effect. This sort of thing is a long-term project."

If Cabi's secret weapon passes muster, knotweed will have its first natural enemy in Britain, after 160 years of free rein. It won't kill it but it will keep it under control. If it doesn't, we are back to square one.

"If you can stop something arriving, you've saved millions," he says. "Creeping water primrose, another highly invasive plant, was a very good target for early intervention, because we had it in only six localities at a time when France was already spending €60m a year on its control." Cabi demonstrated to the government that you could spend £70,000 now and kill it, or wait and end up spending £700m. The government took the £70,000 option.

With knotweed, the early intervention option has long gone. Outright elimination is not financially viable either. If the psyllid works, Fallopia japonica will finally have a natural control, as it does in Japan. If it doesn't, we're back to square one.

A post on a gardening internet forum reads: "Japanese knotweed wanted. I know this plant is an invasive weed, but I really want to grow it in a flowerpot in my home. Can anybody find where I can get live plant, rhizome, or seed? Smiley face."

The first person to respond suggests the advertiser move to Asia. The second warns her not, under any circumstance, to risk planting it, pot or otherwise. Knotweed, after all, is the Houdini of the plant world. It can escape anything.

The request was posted several months ago and nothing has been heard of the knotweed enthusiast since. We have no way of knowing if she managed to procure the illicit plant. If your neighbour has gone awfully quiet recently, and all you can see through the net curtains are leaves, perhaps she did ■

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