THE HOGWEED CONFUSION

Giant hogweed

In the British Isles and Ireland there are two species of plant in the genus *Heracleum* which are commonly confused and about which frightening stories have been published.

The first is our native Hogweed *Heracleum sphondylium* which begins to flower on roadside verges and almost anywhere in the countryside around late May and June. It begins to flower when the Cow Parsley *Anthriscus sylvestris* has almost finished and is in fruit.

The second is Giant Hogweed *Heracleum mantegazzianum*, a plant from the Caucasus, introduced for the use of gardeners in the 19th century. It has escaped into the countryside and can be invasive locally. It flowers in mid-summer.

The main problem though is not that either crowds out other plants wherever they flourish, like so many invasive plants, but that both have an irritant sap. In the case of Giant Hogweed the sap can, on exposure to ultraviolet light, cause skin blistering and even severe burns requiring hospital treatment. Horrific images can be found easily on the internet giving the impression of a deadly plant which must be avoided at all costs. Tales of young children making peashooters from the stems and receiving bad blisters or burns around the mouth are examples.

The Giant Hogweed sap like nearly all members of the *Heracleum* genus, contains furocoumarins such as psoralen. These are chemicals which readily absorb ultraviolet light and cause it to form permanent, irreversible bonds with RNA and DNA in human skin cells. This leads to the death of those cells and a very real possibility of bacterial infection of the affected area making the whole injury a lot worse. The serious phytophotodermatitis, as it is called, does need the sap, and therefore the furocoumarins, to be activated by certain frequencies of light in the ultraviolet spectrum. If the cloud cover is such that those frequencies of light are absent or severely reduced then the severity of the skin irritation is much less. If the skin is blistered, it will eventually heal but because the furocoumarins are fat soluble, they penetrate the skin during initial contact and may cause a reddening of the area after healing which can last for a long time, sometimes years.

It is understandable therefore that local government, landowners, park authorities and farmers are keen to get rid of Giant Hogweed. Even that isn't simple though. The usual tool for levelling rough areas is the strimmer which has a rotating flail and in theory cuts through even the toughest plant stems. In this case, it does so while scattering the dangerous sap and plant remnants in all directions so full body protective gear must be worn and thoroughly cleaned afterwards. Strimming or hacking at this plant without protection is a sure way to become affected by the sap.

Our native plant, Hogweed also contains some of these furocoumarins but the concentration in the sap is far less, leading to irritation rather than deep burns needing hospital treatment.
The result is that many of our native Hogweed plants, upon which many native invertebrates depend, are hacked down because they are mistaken for Giant Hogweed. So is there a way of distinguishing the two species?
It isn't easy to the untrained eye, but here are some pointers:

1 **Inflorescence Size**: A healthy Giant Hogweed can have white flower heads the size of a small umbrella with many smaller flower heads surrounding it. Hogweed tends to have large but flatter dull white flower heads, many with a pinkish tinge.

2 **Stem**: both are bristly but Giant Hogweed tends to have many small purple spots.

3 **Leaves**: there is quite a variation in leaf shape of ordinary Hogweed but generally the lobes of the leaves are more rounded. If you find a Hogweed with rounded leaves it isn't Giant Hogweed which has very large and quite pointed leaf lobes.

4 **Plant size**: Healthy Giant Hogweed can easily be as much as 5 metres (over 15 feet) tall and the strongest healthiest ordinary Hogweed can't grow this big - just over 2 metres at most.
If you find a clump of Giant Hogweed can you notify someone in authority so that it is removed?

Logically, considering the danger particularly to children, the answer should be "yes" but it isn't necessarily. You will have to look at the legislation covering invasive plants in the country where you found the plant.

Purple spots and bristles on stem of Giant Hogweed

Leaves of native Hogweed

Leaves of Giant Hogweed

In the United Kingdom the current (effective in 2020) legislation allows the appropriate minister to take action if s/he is so minded but a few clumps of Giant Hogweed will not elicit a positive response. In fact The Countryside and Wildlife Act 1981 actually forbids us from uprooting wild plants without the permission of the landowner.

The positive side of this is that the landowner owns both the land and the plants growing on it. Unless they are under a special protection order they can be removed with the landowner's permission. If the land is owned by the local authority then they should be contacted. If you don't know who owns the land or the landowner doesn't care, then there isn't anything you or anyone can legally do about it.

We are actually allowed to grow invasive plants in our gardens (example: Garden Yellow Archangel *Lamiastrum galeobdolon* ssp. *argentatum*) but must not allow them to escape into the wild. Similarly there is nothing to stop someone growing Giant Hogweed as a garden plant which is exactly why it was introduced in the first place.

Giant Hogweed is an introduction from the Caucasus where they have similar plants such as *Heracleum lescovii* which have the same irritant sap. You can sometimes find a hillside covered in this species.
So how do the Caucasus locals cope with forests of such dangerous plants? They ignore them and walk straight through the middle if they want to. There is no strimming or removing of these species which are just accepted as part of the natural environment. Contrary to what some people post on social media, there is no irritant effect from just touching or brushing against these plants.

Scientists think that the chemicals in the sap which produce these irritant effects in humans are a way of the plant protecting itself against both insect attack and pathogenic or fungal infection. Perhaps we should remember that all species have evolved in such a way that they can survive the various threats they face in their usual habitat. This kind of evolution has happened in other genera including

other well-known and useful members of the Apiaceae and many more than you might think (for a list see the WFS website).

Hogweed itself has more positive than negative attributes. It has been used as a herbal treatment for many maladies in the past and has since been investigated by scientists. Modern pharmacological studies have demonstrated that *Heracleum* species and their active compounds have extensive biological activity. They have anticonvulsant, anti-inflammatory, antifungal, anticancer, antipsoriatic, anti-vitiligo and antioxidant activities. They have successfully been utilised to treat psoriasis, as pain killers and as anticonvulsants.

Giant Hogweed is not doing nasty things to us on purpose and Britain isn't its usual habitat. We brought it here to enhance our gardens.

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