

Painful Plants

by Sharon Oosthoek



Giant hogweed

What plant is so menacing it's an outlaw in the United Kingdom? If you move it across state borders in the United States without a permit, you're in trouble? The answer is giant hogweed. The rock band Genesis even wrote a song about it threatening the human race in a plant-o-pocalypse scenario. (Yes, you can download the ringtone.)

"Everybody knows about yellow jacket wasp and bee stings," says Jeff Muzzi, Manager of Forestry Services for Ontario's Renfrew County, "but where things get a little more dangerous out there is with giant hogweed and [its relative] wild parsnip."

The Burn That Lasts

Both plants can burn your skin, giving you blisters, and maybe leaving scars. Their sap contains chemicals called furocoumarins, which are phototoxic. That means the chemicals become active in the sun.

"After a day or two, your skin turns red and starts to blister. It's ugly and can take up to a month to clear up," says Muzzi. "But the photosensitivity (sensitivity to sunlight) will last for years. You won't have any protection against the sun — you'll get instant sunburns every time you're exposed." If you're unlucky enough to get the sap in your eyes, you can go temporarily, or even permanently, blind.

Settlers to North America brought wild parsnip with them from Europe over 100 years ago as a food source. Boil the roots and you have a nice starchy meal. Of course, the settlers knew enough to wear protective clothing at harvest time. Wild parsnip grows a bit taller than a mailbox and is topped with small clusters of yellow flowers.

Today, wild parsnip is everywhere, especially in roadside ditches and meadows. Giant hogweed, thankfully, has spread more slowly. Originally from the Caucasus region between Southwestern Asia and Europe, people brought them to North America because they thought they were pretty and liked to have them in their gardens. Giant hogweed stems reach up to five meters — that's taller than a one-storey building — and are crowned with large umbrella-shaped clusters of small white flowers.

Mechanical and Chemical Defenses

Plants can also cause you pain in more obvious ways — with sharp thorns and barbs for example. Botanists (scientists who study plants) call this a mechanical defense.

Roses and cacti have mechanical defenses. While their thorns can puncture your skin and make you bleed, you'll easily recover unless your wound gets infected.

A more sneaky strategy is something botanists call a chemical defense. In this case, the liquid on a plant's leaves or stems contains toxic chemicals that react with your skin, whether or not you expose it to the sun. Poison ivy, oak, and sumac all use a chemical defense by spreading an oily liquid called urushiol. (Well, it's probably an accidental defense against humans since deer, goats, horses, and birds eat parts of the plant.)

Urushiol is very sticky and doesn't dry, so it



Why Urushiol?

Plants around the world contain the chemical urushiol. Its purpose might have less to do with defense and more to do with protecting a plant's wounds.

clings to anything that touches it — skin, clothing, and pet fur. Even breathing in the smoke of a burning poison ivy, oak, or sumac can make your eyes and nasal passages red and tender. But if you touch poison ivy, you may not realize it until the next day, says environmental chemist William Schlesinger, president of the Cary Institute of Ecosystem Studies in New York.

"You will wake up with a mild case of fluid-filled blisters, which are extremely itchy and you can't help but scratch," he says. "That breaks the blisters and spreads the fluid across your body. If it's bad, the blisters will coalesce (come together) and the entire surface of your skin will fall off and you're left with one big, open, oozing sore." Eewww.

Unfortunately for the 80 percent of us who develop rashes from poison ivy, Dr. Schlesinger and other scientists have figured out the plant will get better at causing harm as we pump more carbon dioxide (CO₂) into the air. CO₂ is released by power stations that make electricity and comes out of the tailpipes of our cars, and it is causing the climate around the world to change.

Dr. Schlesinger and his team figured out the effect on poison ivy by buying CO₂ from a fertilizer factory and pumping it into a patch of forest in North Carolina until it reached levels scientists expect by 2050. They studied the forest from 1997 to 2004 and found the poison ivy grew faster and bigger, and its urushiol was more powerful. Ouch! 🗑️

Ow! Factor Outrageous Plants

The **manchineel tree's** sap, bark, and leaves are all highly toxic. It produces a sweet-smelling fruit that looks like a crab apple, but don't touch, and absolutely don't eat. It contains a chemical that causes terrible pain and swelling. Merely standing under the tree while it's raining will cause your skin to swell and blister painfully. It grows in the Caribbean, Central and South America, and in parts of Florida.

The **giant stinging tree** and the **gimpie-gimpie** are related trees that grow in Australian rainforests and have large soft leaves covered in little hairs. The hairs contain a neurotoxin (a poison that affects nerve cells), and they can slide into your skin, delivering a sting that some people say is as painful as being scalded with boiling water and can last for months. You can even get sneezing fits just by standing next to a gimpie-gimpie.

CAUTION
THE FRUITS OF THIS
MANCHINEEL TREE
ARE POISONOUS.
DO NOT STAND BENEATH
TREE WHEN IT IS RAINING.