



Poison ivy the unfriendly plant

By Lou Calabrese

If you have ever had a poison ivy rash, you know how unfriendly poison ivy can be. If you haven't, consider yourself lucky. For about 50 percent of the population, contact with any part of the plant results in a rash along with intense itching — a reaction by your body's immune system.

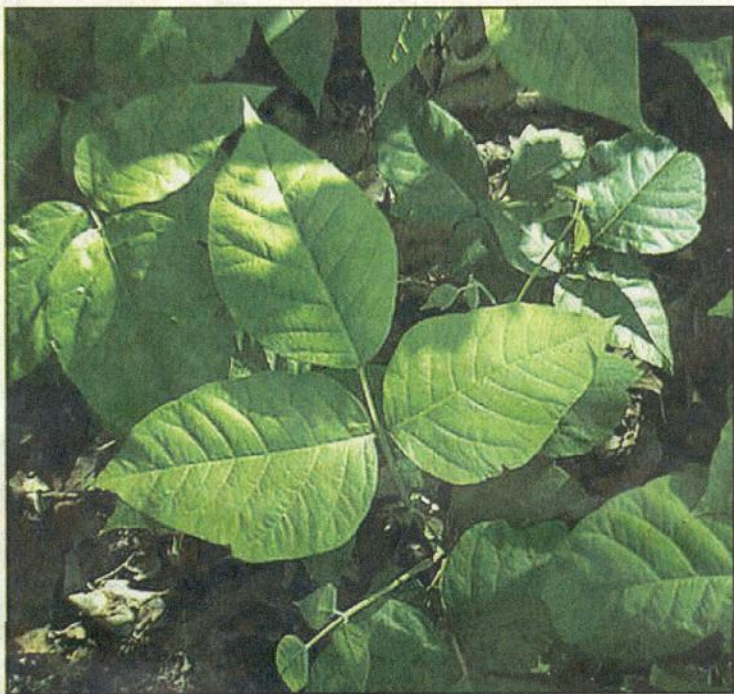
Physiologically, when urushiol (the unfriendly substance of poison ivy) penetrates the skin, it binds with a carrier protein. Acted on by the white-blood cells, it migrates to a lymph node and differentiates into effector cells and memory cells; a person is now sensitized.

Up to this point, one cannot contract poison ivy. The white-blood cells are now prepared to defend against subsequent encounters with the plant.

When urushiol once again comes in contact with the skin, the effector cells release lymphokines, the powerful proteins released by the white-blood cells to assist immunity and which are responsible for the irritating rash.

Botanically, poison ivy is a member of the cashew family (Anacardiaceae); its scientific name is *Toxicodendron radicans*. It grows in various forms and is normally found on the East Coast of the U.S. (also in Eastern Asia) growing on the ground among other ground covers, along the edge of woodlands and/or climbing up a tree. It can also grow as a low shrub.

It's fairly easy to identify due to the three leaves, accompanied sometimes by white berries. The plant is often spread by birds that eat the berries. It is not normally found in areas with very low annual rainfall, at high altitudes, or in the shade of dense forests.



Submitted photo

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In 1940, Dr. Charles Dawson at Columbia University began intensive study of poison ivy, and after 13 years, he announced the toxic agent, urushiol. Urushiol is an oily substance, which quickly forms the chemical bond described above; it is difficult to wash off and strong soap merely removes excess urushiol, but will not remove any that has already reacted with the skin.

The level of sensitivity varies from person to person; however, virtually no one is totally immune. Some people have a higher threshold of sensitivity or have never been sensitized. Studies have shown that redheads are more susceptible than blonde-haired people, who in turn are more sensitive than are brown-

haired people. Once sensitivity develops, it usually remains for life.

In some instances, a severe case will make a person more sensitive to poison ivy, in others it lessens the effect of future encounters. People who feel they are immune to poison ivy are those who have not yet been sensitized; once sensitized, subsequent contact with the plant will result in a rash.

Editor's note: Mr. Calabrese is a volunteer at Delaware State University's Claude E. Phillips Herbarium, Delaware's center for research, education, and outreach about plant identification, location and uses. Call 857-6452 to arrange a tour or for more information about this article.