CHEMISTRY-BOTANY

The Big Itch Bites the Dust

Deadly sprays are the weapons in an all-out attack against the terrible trio of poison ivy, oak and sumac. "Leaves of three, let it be" is still sound advice.

By SAM MATTHEWS

➤ DEADLY chemicals armed an all-out attack this summer against an innocent-looking green leaf whose unmistakable trademark is an intolerable itch.

The leaf belongs to the clan *Toxicodendron*—the terrible trio known as poison ivy, poison oak and poison sumac. In round figures, these three plants blistered half a million Americans this vacation season.

Their profusion in fields and woods, along fence rows, rock walls and hedges, in country lawns and city gardens, seems almost in outright defiance of the human race. For generations, men could do little about the pests but scratch in angry impotence. Now revengeful victims have weapons with which to fight back.

Three new chemicals have joined man's battle in the last decade: ammonium sulfamate, 2,4-D, 2,4,5-T. There are older killer compounds: ammonium thiocyanate, powdered borax, carbon disulfide, coal-tar and petroleum oils, sodium chlorate and sodium arsenate.

Sulfamate Most Effective

Ammonium sulfamate, widely marketed by du Pont under the trade name Ammate, is perhaps the most effective weapon yet developed against poison ivy. It begins to wilt the leaves within 24 hours, will kill the entire rootstock if properly applied. The U. S. Department of Agriculture recommends ammonium sulfamate as the best poison ivy killer to use in frequented areas such as school yards, playgrounds and picnic areas.

Originally developed as a wartime biological warfare agent, 2,4-D is one of the so-called "plant hormones." It is not a quick killer, nor is its similarly numbered cousin, 2,4,5-T.

Sprayed on poison ivy, at first these compounds seem to have little effect. The shiny green leaves take from three weeks to a month to completely die. These inexpensive chemicals are excellent killers, however, and are best for use in places where contact by humans or dogs is not normally expected.

Be careful with both ammonium sulfamate and 2,4-D. Ammate kills any plant it actually touches; 2,4-D, although it will not harm grassy growth, will ruin broad-leaved plants such as tomatoes, potatoes and many flowers if the wind carries the chemical into your garden—or your neighbor's. Be careful to wash out your sprayer thoroughly after using these weed killers.

Spray in the morning of a windless, hot and humid day. Life processes in plants will be moving at top speed then. The chemicals will be absorbed quickly and will be carried to all parts of the plant, even though they originally hit only a few leaves of the vine.

Several Sprayings Needed

Some new growth must be expected after the first spraying. Two to three additional treatments will be required the first year, followed next spring by a mop-up campaign.

There is still no substitute, however, for quick recognition of the poison plants to keep your skin clear of Toxicodendron's trademark. Pay heed to the old adage, "Leaves of three, let it be."

Poison ivy and poison oak grow as long, twisting root-vines, sometimes running just under the surface of the ground, sometimes climbing tree trunks, walls, even the sides of houses. If beneath the ground, the shoots appear as low, erect shrubs.

These two plants flourish everywhere—in deep woods where the soil moisture is plentiful or on dry, exposed hillsides. The compound leaves always grow in sets of three from the same point on the vine, appearing glossy green on top, lighter underneath. When the rootstock climbs above ground, it sprouts hundreds of tiny aerial tendrils. In fall and winter, poison ivy and poison oak carry dull white berries.

Poison sumac is a coarse woody shrub or small tree. Like ordinary sumac, it touches the woods in fall with brilliant red-orange or russet. Poison sumac, however, grows only in wet, acid soil around swamps and bogs. Unless you spend your summer near such a place, there is little likelihood of running into it.

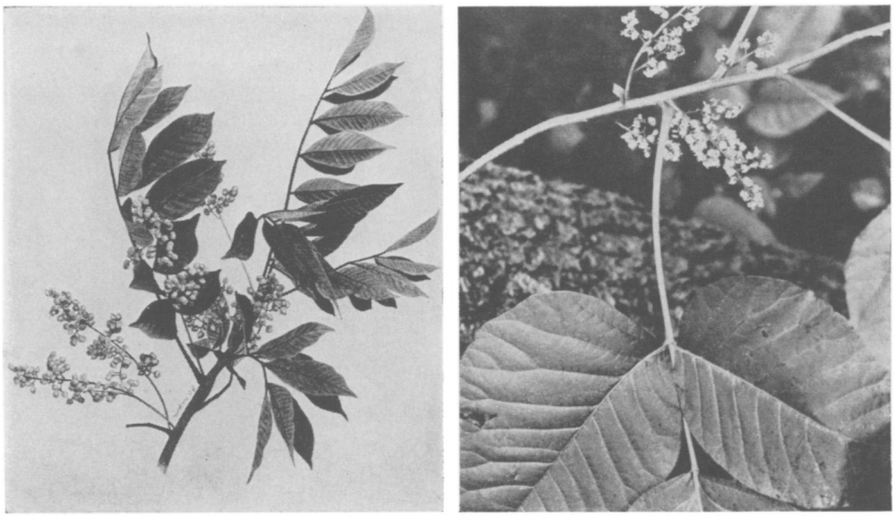
Once poisoned by these plants, there is no quick cure known. There are dozens of remedies offered. Most of them offer relief from itching, although individual sufferers react differently to different preparations. In all but the most severe cases, blisters will dry up and disappear by themselves in 10 days to two weeks.

Tannic Acid Treatment

The U. S. Public Health Service recommends a 10% alcoholic solution of tannic acid. Rub vigorously with gauze soaked in the solution until the tops of the blisters rub off. Repeat three or four times at six-hour intervals. This treatment will sting.

In any severe case of poisoning, self-treatment is not a good idea. The safest procedure always is to see your doctor.

The poisonous agent in the sap of poison ivy, oak and sumac is a substance known as urushiol. Its action on the skin is now recognized as a form of allergy. Individuals vary widely in reaction to it; but doctors believe there is no such thing as a completely immune person. You may never have been affected by poison ivy, and suddenly come down with a severe attack.



ITCH PRODUCERS—Leaves of poison sumac (left) are divided into odd-numbered series of leaflets, from seven to 13 in a group. Bright orange in spring, they turn dark green in summer, then red-orange or russet in the fall. Most poison ivy vines (right) develop tiny white blossoms in the spring.

DESTROYING PEST—Poison ivy should be sprayed three or four times during the summer.

Urushiol is so potent that as little as 1/60,000 of a grain of it (about .00000004 of an ounce), when dissolved in olive oil and rubbed on the skin, will cause mild poisoning.

Plants which carry this evil substance are not known in Europe. There are Asiatic sumacs, however, whose sap is highly poisonous. This sap has been used as a shellac.

A story is told of a zealous customs inspector who opened a heavy can brought in by a Chinese importer. The importer said the stuff was shellac, but the inspector said to himself, "A-ha, opium!" He took the sticky black substance to the laboratory, spread it over himself liberally while analyzing it, and for the next month was laid up with one of the worst cases of sumac poisoning on record.

Science News Letter, September 2, 1950

MEDICINE

Resentment Causes Hives

➤ RESENTMENT is a cause of hives, it appears from studies of 30 patients reported by Drs. David T. Graham and Stewart Wolf of the New York Hospital and Cornell University Medical College (JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Aug. 19).

The patients got attacks of hives when they felt they were being unjustly treated and could not fight back nor avoid the unfair situation.

"Taking a beating" (unjustly) is the way they described it, and their blood vessels behaved as they would if the patients had actually been receiving blows.

The doctors' studies showed that the hives resulted from extreme dilation of the small blood vessels in the skin which occurred as part of the patient's reactions to the situation.

Although these patients sometimes felt hatred of others or anxiety about various situations, it was always resentment that brought on the attack of hives. In some cases of flushing of the skin in embarrassing social situations, questioning revealed that there was some resentment mixed in with the embarrassment.

The resentment was usually felt toward a wife, husband, parent or other close relative. The patient felt "There was nothing I could do," although the doctors often could see how the patient could have fought back or avoided the unjust treatment.

Science News Letter, September 2, 1950

PHYSICS

Arrangement Irregularities Govern Material Strength

➤ THE strength of materials may depend upon the irregularities in atomic arrangement in solids, it is believed in New Brunswick, N. J., by scientists of Rutgers University.

In research work seeking new basic information dealing with the irregularities of atomic arrangement, they are using X-rays to produce more accurate and complete pictures of the irregularities than ever produced before, it is claimed.

The work is sponsored by the Office of Naval Research. The scientists on the project are Dr. Alfred J. Reis and Sigmund Weissman. Their work is based on long-known knowledge that the physical properties of metals, ceramics and other industrial materials must be intimately connected with the arrangement of atoms.

Science News Letter, August 19, 1950

On This Week's Cover

➤ TAILORS spend not only winter days but sweltering summer days cutting and fitting sleek, tailored overcoats—thick, asbestos-lined "overcoats" for steam turbines. For the turbines need overcoats no matter how hot the weather, to prevent loss of heat from the temperature steam that makes most of the nation's electrical power.

No drape shape will do for a turbine. Even the curve of the cross-over pipe of the turbine must be smoothly jacketed as shown on this week's cover of SCIENCE NEWS LETTER. The "interlining" of the turbine's overcoat is a thick blanket of asbestos and glass fiber. Like a satin bedcover, the sections of "blanket" under the canvas are quilted and tufted to keep the stuffing from bunching or shifting. But turbine tailors sew with steel wire and tuft with steel washers.

In making some of the world's largest clothing, the Steam Division annually uses some 60 miles of wire "thread"; 7,500 square yards of asbestos cloth; and more than 64,000 pounds of glass fiber.

Science News Letter, September 2, 1950