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(563) 652-2824  
FAX: (563) 652-3552  
E-MAIL: houston@willinet.net

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## An Inside Look

THOSE OF US who lived through much of the 20th century witnessed an incredible flood of chemicals and products introduced to make life easier for us all. As we now know, with the wisdom of hindsight, many of what were at the time considered “wonder chemicals” have proven to be harmful to the environment and to our health. As the 20th century ended, we faced the specter of frighteningly long lists of banned compounds that may still be present in our bodies or in the water and soil that surround us.

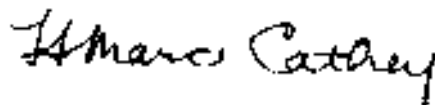
The 21st century will, hopefully, be remembered as a time when we learned how to efficiently remove from our environment many of the toxins we put there in the first place. Among the most dangerous to human health are inorganic elements such as arsenic, lead, uranium, and mercury, which were—and in some cases still are—principal ingredients in products as diverse as fungicides, medical supplies, paint, and fireworks. Unlike organic compounds, which often break down over time into harmless components such as carbon dioxide and water, these inorganic elements are fundamental chemical building blocks that retain their unique characteristics. Trace amounts of certain inorganic compounds—metals such as iron, zinc, copper, and molybdenum, for example—are essential to the life processes of plants and animals but can become toxic in higher concentrations. Other elements are toxic even in extremely small doses.

Arsenic is a truly deadly chemical with a toxicity rate of only 0.65 milligrams per person. It is a prime candidate for removal from old orchards—where it entered the soil as residue from fungicidal sprays—and from sites where pesticides, munitions, and other chemicals were dumped. There has also been concern about possible leaching of arsenic from pressure-treated lumber that is often used in gardens and playgrounds. Until recently, the only way to clean up sites polluted with arsenic was to dig up the entire mass and ship it to a hazardous waste dump.

But plant researchers have been focusing on a promising new field known as phytoremediation—literally using plants to remove pollutants from the earth. In one of the most exciting developments to date, a researcher at the University of Florida discovered a tropical fern that assimilates arsenic and stores it in its fronds. As described in greater detail on page 8, AHS and the National Capital Area Federation of Garden Clubs are cooperating with Edenspace Systems Corporation of Virginia on a pilot project to investigate how effective the fern is at removing arsenic from the soil in home gardens.

We may eventually have the ability to select plants that will not only beautify our gardens, but help cleanse our soil, water, and air. As I was constantly taught during my undergraduate and graduate studies, the green of plants is our hope for survival.

As always, yours in green,



—H. Marc Cathey, *AHS President Emeritus*

