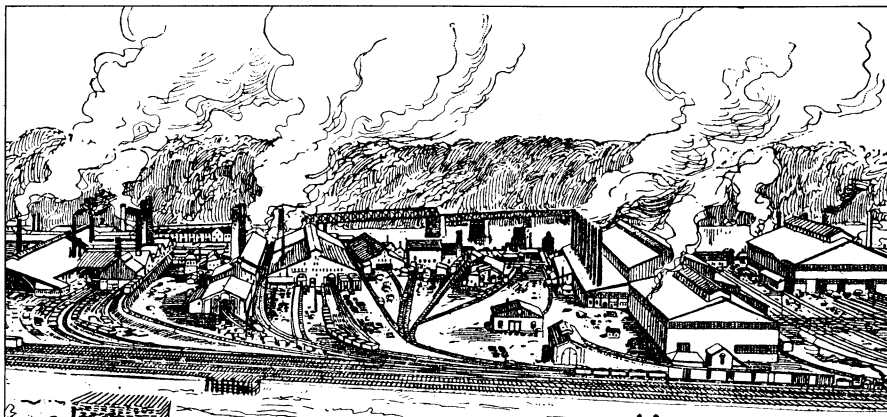


Arsenic and Old Waste



Nineteenth-century industries were not subjected to the kind of environmental, health and safety regulations enforced today. They freely spewed their wastes into running water, which was presumed to clean itself quickly, or into dumps on available vacant land. In addition, some of the materials often used in consumer products and in construction are now known to be hazardous. These wastes and materials may survive in items that are still used or collected, in old buildings, in refuse piles and in sediments. Now, a growing number of scientists are warning that these century-old pollutants are potential sources of present-day environmental problems or threats to public health.

"In some areas, particularly the sites of intensive nineteenth-century manufacturing and mining, they may well represent a serious — and largely unrecognized — problem," concludes a report compiled for the Environmental Protection Agency. The recurring discovery of old waste dumps of hazardous materials, during excavations, is one example. The arsenic, lead and mercury compounds used in many Victorian products also may pose a threat to the health of restorers and users of these items.

Arsenic residues may survive in old factories, equipment and onsite waste dumps. Especially at risk, the authors say, may be workers excavating or reclaiming

old mine or industrial sites, workers renovating or demolishing industrial buildings, those remodeling or refurbishing old residences or antique furnishings, and hobbyists who collect, repair and frequently handle nineteenth-century artifacts. Because the symptoms of arsenic poisoning can be subtle and cumulative, they can easily go unrecognized or not be associated with the source of poisoning.

A summary of the report, produced by Vary T. Coates, Thecla Fabian and Margaret McDonald of Dames & Moore, a firm of consulting engineers in Washington, D.C., was presented last week at the winter annual meeting of the American Society of Mechanical Engineers. "This is a largely unexplored subject, even though there are known episodes of such risks coming to light," the authors note.

The researchers examined prominent nineteenth-century industries and processes to find potential modern hazards involving possibly widespread risk to health or the environment, portability and transport of the materials over time, historical unawareness and lack of current understanding of the threat. They identified several topics of particular concern: the substances arsenic, lead, mercury and cyanides; the electroplating, iron and steel, tanning and coal industries; and waste-containing canals and sediments behind dams.

Arsenic and its compounds received greater attention in the study because they exemplified toxic substances widely used in a variety of industries. One common use was as the source of pigments, primarily for the color green. Arsenic pigments appeared often in stuffed animals, toys, house paints, wallpaper, lampshades, pastry ornaments, carpeting and articles of clothing such as bearskin robes in which they were used both as a dye and to discourage bugs.

Arsenic is one of many toxic substances that could be present in sediments in rivers, reservoirs and lakes as a result of water disposal of industrial wastes or runoff from agricultural lands on which arsenic pesticides were used. When old dams are breached or repaired and sediments dredged, trapped toxic wastes could reemerge as health problems. There appears to be no systematic analysis of sediments to study the extent of the problem, the authors note.

The researchers say problems remaining from nineteenth-century activities are neither as severe nor as widespread as the byproducts of twentieth-century technology, but they are not insignificant. Further assessments in selected areas are needed to better define the situation.

—I. Peterson

Black-footed ferret found; pupfish extinct

The good news and the bad news for animal lovers came in quick succession this month from the Department of the Interior's Fish and Wildlife Service. First came the word from FWS biologists that at least one black-footed ferret — a scrappy, masked member of the weasel family, for three years feared extinct — is alive and well and preying on prairie dogs in Wyoming. But champagne corks barely had time to pop before sobering news arrived: The Tecopa pupfish, once a resilient resident of hot, briny waterways in Death Valley, Calif., but not seen since 1970, has gained notori-

ety as the first creature removed from the endangered species list by reason of extinction. A move three years ago to drop the fish from the list (SN: 7/15/78, p. 39) was postponed while researchers made a final, unsuccessful search of its last known home in the Amargosa River system. In hopes of protecting the ferret from a similar fate, biologists collared the creature with a small radio transmitter and released him. Signals from the collar should permit researchers to study the nocturnal wanderer's range, feeding habits and seasonal activities for four to six months. □



U.S. Fish & Wildlife Service