

ance of *B. cereus* increases the closer one gets to the deposit. The bacteria are also unusual because they feed on the metal-tolerant fungi, unlike other members of their genus.

Parduhn and Watterson suspect that *B. cereus* may have devised other survival mechanisms at different mineral sites and that it may respond differently to different minerals, but more study is needed. It is possible, says Parduhn, that the microbe is really keyed to an element associated with gold, such as arsenic, and not so much to gold itself. The researchers also think that *B. cereus* is not the only microorganism that prefers metal-rich areas. "We may well find there are others," says Watterson. "We're just looking at the tip of the iceberg."

Because each *B. cereus* seems to be genetically coded to survive in its particular soil, Parduhn believes the microbes may provide a much more sensitive way of searching for mineral deposits than conventional geochemical techniques. The researchers have yet to do extensive testing of their microbe method in areas previously untested for mineral deposits. But Parduhn expects that in a couple of years they will be out of the research phase and into an exploration mode. — *S. Weisburd*

New lead guidelines

The Centers for Disease Control (CDC) in Atlanta has revised its 1978 guidelines for the prevention of lead poisoning in young children. The 1985 standards, which appear in the Feb. 8 MORBIDITY AND MORTALITY WEEKLY REPORT, are much more stringent than those in the former version, particularly regarding dangerous levels of blood-lead concentration. The guidelines state that a concentration of 25 micrograms per deciliter ($\mu\text{g}/\text{dl}$) constitutes "an excessive absorption of lead" (down from 30 $\mu\text{g}/\text{dl}$ in the 1978 report). Lead toxicity has been redefined as 35 $\mu\text{g}/\text{dl}$ (formerly 50 $\mu\text{g}/\text{dl}$).

The CDC also strongly recommends that all children between the ages of 9 months and 6 years be screened, as this group suffers the most detrimental effects of lead toxicity. "To be successful," states the agency, "a screening program ... requires not only an acceptable and cost-effective screening procedure, but also medical follow-up and means of preventing the child from future exposure to lead."

The majority of lead poisoning cases in young children are linked to the lead-based paint used in pre-World War II housing. Although it is no longer used, the agency states that "27 million households in this country remain contaminated by lead paint." Other sources of lead poisoning can be found in lead-soldered food cans and airborne lead from car exhaust (SN: 6/16/84, p. 373). □

Vaccine for cats' number one killer

The first vaccine to prevent feline leukemia — the number one killer in domestic cats — is being distributed to veterinarians this winter. The vaccine, developed by Richard Olsen, professor of veterinary pathobiology at Ohio State University in Columbus and marketed by Norden Laboratories, Inc., in Lincoln, Neb., is the first vaccine against any cancer in mammals. Anticancer vaccines for chickens and other birds are already in use.

The feline leukemia virus (FLV), discovered in the 1950s to cause a fatal leukemia and other cancers in cats, also causes aplastic anemia, reproductive failure, respiratory infections and immune system failure. The virus's suppression of cats' immune systems can render them susceptible to many other infections that ultimately are fatal.

FLV infects about 1.5 million of the United States' 50 million pet cats and kills about 1 million of these each year. Most cats infected by the virus survive for a few years with little noticeable effect. Olsen says, but later die from immune suppression or other complications caused by the virus. Infected cats can spread the virus to other cats through saliva by grooming each other or sharing food dishes, or possibly through urine by sharing litter

pans. Feline leukemia is the first cancer found to be spread by contact, but the virus apparently cannot infect humans or other animals.

The vaccine uses two viral proteins instead of killed or modified live virus to immunize cats. Using protein molecules is safer than using whole virus, Olsen says, because the whole virus risks infecting cats and causing a mild case of the disease, including the virus's suppression of the immune system.

One of the proteins protects cats from viral infection caused by FLV. The other prevents tumors caused by the virus, in case cats have already been infected and the vaccine cannot completely prevent FLV's growth. Thus, although the vaccine cannot totally protect cats already infected with FLV, it won't make the disease any worse, Olsen says, and it may even help cats that are in the early stages of the disease.

Can the feline leukemia vaccine provide clues for developing an AIDS vaccine? It's all conjecture at this point, Olsen says. Both FLV and the purported AIDS virus are retroviruses that cause immune suppression. "Conceivably," Olsen says, "the technique used to develop the FLV vaccine can be used to develop an AIDS vaccine."

—*D. D. Bennett*

Toxic pollutants in 'Chemical Valley'

West Virginia's Kanawha River tumbles through one of the most highly industrialized valleys in the United States. Almost 200 facilities, including several giant chemical plants run by major producers such as Union Carbide Corp., dot this long narrow "Chemical Valley," as it is known locally. Last week, the Environmental Protection Agency (EPA) released a study suggesting that the 220,000 people living in the valley are not adequately protected from toxic pollutants in the air and water.

This study, started in July 1983 and completed a year later, focuses on the chronic release of various hazardous substances from area plants and abandoned waste dumps. Although substantial improvement has occurred since 1977 when the last study was done by EPA's National Enforcement Investigations Center, the report says, "Toxic substances continue to be released to the environment in wastewater discharges and air emissions and are present in large volumes in hazardous waste disposal sites." Furthermore, it states, "Toxic substances in the air pose potential health risks at some locations under adverse meteorological conditions."

The EPA report, however, says nothing about episodic releases of toxic substances, which have also become a major concern in the area. Since last December, a

great deal of attention has focused on the Union Carbide chemical plant in Institute, W. Va., a small town in the Kanawha Valley. This plant is very similar to the one in Bhopal, India, where a leak of methyl isocyanate vapor led to the death of thousands of people (SN: 12/15/84, p. 372).

Last month, a special EPA investigation revealed that Union Carbide employees failed to report, as required by law, at least 28 methyl isocyanate spills at the Institute plant. These spills, mostly small, took place over a five-year period. One spill, however, allegedly involved 840 pounds of methyl isocyanate, but Union Carbide officials later drastically lowered their estimates of how much material had leaked. They admitted making mistakes in compiling the information for EPA.

This and other discrepancies prompted Reps. Henry A. Waxman (D-Calif.) and James J. Florio (D-N.J.) last week to ask the General Accounting Office (GAO) to investigate EPA's data gathering methods. Their letter to GAO says that the discrepancies raise serious questions about the reliability of any data given to EPA, especially because Union Carbide has a reputation for being one of the more safety-conscious chemical companies. This spring, Congress also faces a slew of committee hearings and bills that address issues raised by the Bhopal disaster. —*I. Peterson*