

Close to 100 testify on EPA proposal to increase gasoline lead

Nearly 100 people — including representatives of the environmental, consumer and public health communities, labor unions, oil companies and makers of lead gasoline additives — turned out to testify at public hearings last week on an Environmental Protection Agency proposal to relax or rescind regulations restricting the amount of lead allowed in gasoline. The proposal was announced in the February 22 *FEDERAL REGISTER* (SN: 2/27/82, p. 132). While EPA does not dispute the health hazards of lead, officials suggest that existing plans to “phase down” gasoline lead levels may no longer be necessary because the increasing use of unleaded gas will result in a “natural” phasedown.

In last week's hearings several physicians and other scientists summarized the case to date against lead. Among them was Herbert Needleman of the University of Pittsburgh, author of a study (SN: 4/7/79, p. 230) showing that even very low blood lead levels — once considered innocuous — resulted in learning and behavior problems in children. While gasoline is not the only source of lead in the environment, auto emissions are believed to be responsible for 90 percent of all airborne lead.

EPA's phasedown program — which began in 1975 and today restricts large refiners to adding no more than 0.5 grams per gallon of lead to gasoline, averaged across all grades — has had a beneficial impact on human blood lead levels, testified Vernon Houk, acting director of the Center for Environmental Health of the Centers for Disease Control in Atlanta. He cited a recent CDC report (SN: 3/27/82, p. 212) that showed a correlation between the 36.7 percent decrease in average blood lead levels nationwide between 1976 and 1980 and the decreased use of lead in gasoline during this same period.

Only one scientist — Claire Ernhart of the Case Western Reserve University School of Medicine — out of more than 10 who testified, disputed the effects of low level lead exposure on the intelligence and behavior of children. In an analysis prepared for the Lead Industries Association, Ernhart found several “methodological problems” in the studies that have explored this question, the most important being “confounding variables,” such as parental intelligence, that could also be responsible for children's behavior and learning problems.

“But those other variables have always been taken into account,” responded Edward Groth of Consumers Union. Groth was a member of the National Academy of Sciences committee that published a 1980 report, “Lead in the Human Environment.” In particular, he said, Needleman's experiment was designed to minimize those other variables. “It was the judgment of the NAS committee that he did a very good

job.”

“Every molecule of lead has the potential to disrupt the chemical basis of normal cellular function,” said Ellen Silbergeld, Chief Toxics Scientist for the Environmental Defense Fund. Before joining EDF, Silbergeld studied the effects of lead on the human nervous system. “Scientifically, the only appropriate level of lead absorption is no lead absorption,” she said.

Surprisingly, spokesmen for the major oil companies did not come out strongly in favor of relaxing lead standards. A few even opposed it. For example, Charles Head of the Cities Service Co. testified that “economic equity justifies continuing the 0.5 gpg standard.” The reason, he said, is that his company and others already have made the capital investments necessary to comply with regulations as they now stand. The major concern they expressed was that EPA apply that standard to their competitors as well — the small refiners, “blenders” (companies that do not process crude oil but mix low grade gasoline with octane-boosting additives) and importers of gasoline. These groups have been allowed to put up to 2.65 gpg lead in their gas, an exemption that was due to expire this October.

On the other hand, companies that have

not made investments necessary to comply with the 0.5 gpg rule, as well as blenders and the chemical companies that make lead additives, strongly supported changes in the regulations. Their arguments focused on saving energy.

Although the majority of those who testified last week opposed changing the 0.5 gpg standard, there are indications that EPA chief Anne Gorsuch has already made up her mind. In hearings before the House Environment, Energy and Natural Resources Subcommittee on April 13, Chairman Toby Moffett (D-Conn.) released an EPA Office of the Inspector General's report on an allegation that Gorsuch promised not to prosecute a small refiner that had violated lead standards. A reason given by witnesses to the alleged promise, says the report, was that EPA was deciding whether or not to keep the lead standards at all. But “the agency has made no decision yet,” EPA's Martha Casey told *SCIENCE NEWS*. “Nor will we until all of the materials submitted have been analyzed.” That could take some time. According to Casey, the agency has received over 100 written comments in addition to those presented orally. No decision is expected until the middle of the summer, she says.

—L. Tangley

Better snake bite treatment is studied

What do you do when you're bitten by a poisonous snake, hours from the nearest medical clinic? “There really is a void in emergency treatment,” says Richard Straight of the federal Venom Research Laboratory in Salt Lake City. “We've never been satisfied with what is recommended,” he explains — namely lancing the wound, attempting to suck out the poison, and perhaps applying a tourniquet to the bitten limb between the wound and the heart. But a technique has been tested in Australia that is so stunningly simple its efficacy begs belief. One merely splints the unwashed bitten limb and then wraps an elastic bandage as tightly as possible about a wide area encompassing the wound.

Successful use of the technique lends support to previous suggestions from animal research that venom molecules are so large that they prefer to travel in the lymph vessels instead of in the bloodstream.

Australian herpetologist John Pearn is believed to have conducted the first human trial, on himself, according to the January *SCIENTIFIC AUSTRALIAN*. Having followed reports of its success in five years of monkey trials at the Commonwealth Serum Laboratories in Melbourne, Pearn was prepared to use it on himself when an Australian brown snake bit him a year ago February. “Just how effective this new

treatment [first suggested 40 years ago] is was demonstrated by the fact that there were no symptoms of envenomation two hours after the bite,” Pearn says in the Australian magazine. Medical tests confirmed the absence of venom in his blood at that time.

Within 10 minutes of carefully removing the bandage, however, signs of poisoning appeared. Venom was detected in his blood 5 minutes later. Following treatment with the appropriate anti-venom, Pearn recovered completely.

Straight notes that an Australian medical journal has reported another incident where the technique was used for a tiger-snake bite. That individual survived a six-hour trek to the hospital, again without venom movement.

The elastic bandage sufficiently compresses lymph vessels so that the flow of lymph and tissue fluids is halted. Straight still considers the concept that venom might selectively choose the lymph system “unproven” but an “exciting idea.” So intrigued are researchers at his Utah laboratory that studies have already begun there to explore the physiology of venom transport and action during compression. If the technique proves as effective in his controlled animal studies as the human anecdotal accounts would suggest, it could become the preferred treatment for snake-bite emergencies. —J. Raloff