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#318 - The Year In Review: Toxics, Part 1
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Continuing the review of 1992 highlights we began last week:

Non-Cancer Health Effects

For two decades, the chemical industry and the federal government kept the American people focused narrowly on cancer risks from chemical exposures. Meanwhile, largely unnoticed by science or medicine, many chemicals have been affecting the human immune system, reproductive system, and nervous system.

Only a handful of chemicals have been proven to cause cancer in humans. Many more have been shown to cause cancer in laboratory animals, but an army of scientists now makes a good living by arguing that animal tests don't tell us much about humans. While this debate rages, thunderous quantities of industrial poisons continue to spew into the environment. The environmental movement and the public have allowed the chemical industry and their friends in government to define the terms of the discussion. The result has been two decades of focus on cancer and not much else. Cancer is important, of course, but so are other health problems caused by chemicals.

During 1992, non-cancer threats from chemicals began to get the attention they deserve. For example, SCIENCE magazine, official voice of the American Association for the Advancement of Science, said April 3 (pg. 28),

IN THE 1980S, HUMAN IMMUNE SYSTEMS WERE FIRST FACED WITH THE BLATANT DESTRUCTIVE POWER OF AIDS. NOW IN THE 1990S, HUMANS--AND IMMUNOLOGISTS- -ARE ENCOUNTERING DRAMATIC INCREASES IN YET ANOTHER DISTURBING, THOUGH FAR MORE SUBTLE PROBLEM: ENVIRONMENTAL POLLUTANTS ARE HAVING A DELETERIOUS EFFECT ON IMMUNE SYSTEMS INDEED, EVERYWHERE THESE DAYS DOCTORS ARE SEEING INCREASINGLY SEVERE CASES OF IMMUNE-RELATED DISEASES

A 1992 report by the National Research Council (NRC), titled, ENVIRONMENTAL NEUROTOXICITY, said, "There is convincing evidence that chemicals in the environment can alter the function of the nervous system." The report suggested that chemical exposures may be responsible for some degenerative brain disorders such as Parkinson's disease, Alzheimer's disease, and Lou Gehrig's disease (amyotrophic lateral sclerosis).

NRC said there are 70,000 chemicals now in commercial use and less than 10% of these have ever been tested at all for toxic effects on the nervous system and "only a handful have been evaluated thoroughly."[1]

Risk Assessment

As the focus of concern shifted away from cancer, critics of risk assessment became more vocal. Risk assessment is a technique that first came into use during the Carter administration, then was promoted with a vengeance during the Reagan/Bush years. Risk assessment is now the main intellectual prop that allows industries to continue dumping billions of pounds of industrial poisons into public air and water supplies. When anyone objects, the poisoners trot out a risk assessment produced by some high-priced consultant, showing that the risk of giving anyone cancer is less than one-in-a-million. EPA has blessed this as the official technique for showing that industrial poisons rarely, if ever, cause significant harm. In the desperate latter days of the Bush administration, William Reilly, chief of EPA, even went so far as to suggest that ALL EPA policy should be based on risk assessment.

To expose the swindle inherent in all risk assessments, one merely needs to point out that little or nothing is known about the effects of chemicals on the immune system, the reproductive system, and the nervous system. When little or nothing is known, it is obviously impossible to show that any particular chemical exposure is safe. Under such circumstances, the only dose known to be safe is zero. Since there will never be enough research to discover the ill effects of all INDIVIDUAL chemicals now in use, much less COMBINATIONS of all chemicals now in use, risk assessment is, AND ALWAYS WILL BE, a sham and a deception. Scientists like Tom Webster at Queens College in New York and Mary O'Brien at University of Montana in Billings, and lawyer Paul Merrell of Alder-Hill Associates in Tidewater, Oregon, have published devastating critiques of risk assessment.

The National Research Council's study of neurotoxins jolted the political system into a new awareness of risk assessment. Senator Edward M. Kennedy (D-Mass.), sponsor of a bill called the "Safety of Pesticides and Food Act," greeted the NRC report saying, "This report makes clear how little we know about the health consequences of the thousands of toxic chemicals that permeate our high-tech society. The most ominous finding is that current risk assessment methods are not sensitive enough to detect real and avoidable risks lurking in our environment."

If 1992 is any indication, risk assessors in 1993 will find themselves on the defensive.

Incineration

Throughout the 1970s and 1980s, evidence accumulated that all landfills leak and that there is no affordable way to build a safe landfill. (You might build a long-lived landfill inside a huge 12"-thick titanium box welded shut, but no one could afford it.)

As an alternative, industry and its acolytes in government decided to build thousands of hazardous waste incinerators. To show that these were safe, EPA developed an elaborate "trial burn" system. Incinerator operators pick representative wastes that are supposedly harder to destroy than the other wastes that would be routinely burned. These harder-to-destroy wastes are called POHCs (principal organic hazardous constituents). During the trial burn, POHCs in nearly pure form are fed into the incinerator and what comes out the smoke stack is compared to what was fed into the furnace. A simple calculation then reveals the "destruction and removal efficiency" (DRE) of the machine. EPA established regulations REQUIRING 99.99% DRE FOR ALL WASTES FED INTO HAZARDOUS WASTE INCINERATORS and they told everyone who would listen that 99.99% DRE of the POHCs proved beyond any doubt that 99.99% DRE would be achieved for all wastes fed into the furnace.

In late 1992, this was all revealed as a fraud and a ruse. Greenpeace chemist Pat Costner unearthed two EPA studies, conducted in 1984 and 1985, showing that no incinerators could meet the established regulations. Any chemical present in the waste stream at a concentration below 1000 parts per million (ppm) cannot be destroyed with 99.99% DRE. Since thousands of incinerators had been sold to the public by industry and by EPA as "safe" specifically to destroy dangerous wastes present in concentrations lower than 1000 ppm, it became clear that this was a public health scandal of considerable proportions.

In response to the public flap, on September 22, 1992, EPA's director of the office of solid waste, Sylvia Lowrance, wrote a memo to all 10 regional EPA offices, suggesting ways to avoid acting upon the discrepancy between the requirements of the law and the actual operating characteristics of hazardous waste incinerators. It seems clear that, according to EPA's regulations, all hazardous waste incinerators should be shut down because the regulations say, "the DRE performance standard applies to each waste feed burned." Since no incinerators can meet the 99.99% requirement for all wastes burned, no incinerator meets EPA regulations. Ms. Lowrance's memo seemed to be aimed at showing EPA staff how to evade the requirements of the law--a kind of guidance EPA officials are not supposed to give.

On December 22, in a letter to the EPA inspector general John Martin, EPA employee William Sanjour formally charged Sylvia Lowrance with violations of law.[2] The inspector general is now required to conduct an investigation.

Our hat is off to Mr. Sanjour for his fortitude and persistence. Let us hope the new administration recognizes what an asset he is to the EPA. Many of the suggestions in his 1992 report, WHY EPA IS LIKE IT IS AND WHAT CAN BE DONE ABOUT IT, could make any government agency work better.[3] Lead in Children

The federal Centers for Disease Control in 1992 officially reduced the amount of lead that is considered "acceptable" in children's blood, from 25 micrograms per deciliter to 10 micrograms per deciliter.

As the year wound down, a spate of studies began appearing in medical journals indicating that even 10 micrograms per deciliter is associated with permanent loss of IQ. The NEW ENGLAND JOURNAL OF MEDICINE reported October 29 (pgs. 1279 and 1308) that low levels of lead in young children don't merely "delay neurobehavioral or motor development" but actually produce "deficits in intelligence." At least three studies of children exposed to lead before the age of 4 have now shown that the damage is measurable during school years, ages seven to 10. One study of well-to-do children in Boston showed that each increase of 10 micrograms of lead per deciliter of blood at age 2 produced a six-point decrease in IQ at age 10. This held true in the range 0 to 25 micrograms per deciliter, which means that a child with 25 micrograms of lead in his or her blood at age 2 would lose 15 IQ points compared to what his or her IQ would otherwise have been. Such a decrease might not debilitate a person who started with a 125 IQ, but it would devastate a person at the lower end of the normal range of intelligence. A person pushed from a 90 to a 75 IQ would face a lifetime of serious learning disabilities and expensive remedial help.

Late in 1992, the Bush administration responded by issuing rules requiring all children on Medicaid to be screened for lead. However, the new rules allowed states to continue using outmoded screening techniques that cannot detect lead below 25 micrograms per deciliter, no doubt intended as a kinder, gentler way of continuing to ignore this menacing problem.[4]

Happy new year!

--Peter Montague

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[1] Philip J. Landrigan, ENVIRONMENTAL NEUROTOXICOLOGY (Washington, D.C.: National Academy Press, 1992), pg. 2.

[2] We covered this story in greater detail in RHWN #280 and #312. William Sanjour's 8-page letter to the inspector general is available from us for $4.00.

[3] William Sanjour, WHY EPA IS LIKE IT IS AND WHAT CAN BE DONE ABOUT IT (Annapolis, Md.: Environmental Research Foundation, 1992); $15 from E.R.F., P.O. Box 5036, Annapolis, MD 21403-7036; phone (410) 263-1584.

[4] N.Y. TIMES September 13, 1992, pg. A1.

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