

Peril of Chemicals Is Growing

Senate Panel Will Study Toxic Substances Act

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Americans have surrounded themselves with chemicals that may endanger their lives.

Arsenic, cadmium, DDT, PCBs, nitrosamines, heptachlorophene, pentachlorophenol, plasticizers, mercury, selenium. The list is growing, and the peril almost certainly is growing, too — overshadowing the environmental danger of an Alaska pipeline or SST.

This has been given alarming emphasis in the past two weeks at two meetings of scientists.

The subject, and what critics call "the government's inadequate response," are about to be investigated by a government operations subcommittee headed by Sen. Abraham Ribicoff (D-Conn.). Its hearings start Tuesday.

A draft of a proposed administration "Toxic Substances Act" is called "a small step forward, but far too weak, giving the illusion of progress" by one of the subcommittee's scheduled witnesses, Dr. Samuel S. Epstein, for advance testing.

But Environmental Protection Agency Director William D. Buckelhaus, who sent the act to Congress, promises "to test in advance, so far as we are able, every new compound or element or technological innovation."

He pledges to determine every new chemical's effect

"on human health and the environment" before it can be introduced.

Epstein, the doubter, spoke in an interview at a meeting of the Environmental Mutagen Society in Washington. Director of Environmental Laboratories at Boston's Children's Cancer Research Foundation, he helped organize that society two years ago. It includes many leading toxicologists and geneticists.

Both at its meeting and in Los Angeles all last week, at the most environmentally oriented meeting ever held of the 100,000-member American Chemical Society there was item after item of bad news about chemicals.

Among them:

• DDT apparently has caused genetic changes in chromosomes of wild fruit flies throughout the West. Prof. Theodosius Dobzhansky of Rockefeller University observed the chromosome changes. Dr. Lawrence Cory and others at California's St. Mary's College have correlated them with DDT spraying patterns over the years. Cory called this dangerous tinkering with life-support systems.

• PCB, industrial plasticizer and insecticide ingredient, has appeared in human fatty tissue. So has pentachlorophenol, common wood preservative. PCB's levels are higher in hu-

man fat than DDT's. A recent report said every U.S. child "begins life in utero" (the womb) today "with chlorinated hydrocarbon insecticides in its body tissues" DDT, DDE, heptachlor, dieldrin and others.

• In a American Chemical Society meeting in Baltimore heard that phthalates also used in plastics are contaminating medical blood. They are used in blood storage bags (from which they migrate) in tubing for intravenous feeding and fluids and in much of the country's vast supply of food wrappings and containers. Phthalate kills chick heart embryo cells in laboratory cultures. Animal tests suggest, (but do not prove) that they may be implicated in mysteriously growing a sometimes fatal condition called "lung shock," where tiny clots in the lungs impede circulation.

• Dr. Robert Rubin of Johns Hopkins found "significant quantities" of phthalates not only in hospital blood supplies but also in urine specimens from three graduate students who had never had a blood transfusion. This helps make another scientist think they vaporize into the air—off vinyl seat covers, for example to gum up auto windshields; off the new "wet look" raincoats and other products.

• Hexachlorophene—a pow-

erful bacteria-killer in many soaps, anti-scene products and surgeons' hand sanitizers—is present in its users' blood streams. It is toxic to rats. In an alarming Texas episode, its use preceded eczema in six children treated for burns. It is also used in hospitals and by many new mothers to wash their babies. Some federal officials think the Food and Drug Administration should act on at least this use, while continuing new monkey studies on general safety.

• Large amounts of selenium, called "mercuric than mercury," have appeared in zooplankton (microscopic animal life) in Lake Michigan, downwind from Chicago. It probably comes from burning coal and oil, which release it to the atmosphere.

• The U.S. Geological Survey has found that cadmium or arsenic exceeds health standards in 12 urban areas' water supplies. Dr. Henry Schrodder at Dartmouth Medical School says: "There is a good correlation of certain qualities of municipal water supplies and deaths from congenital abnormalities." He believes much cadmium, too, comes from industrial air contamination. Some scientist think more studies may reveal it as "as another mercury."

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• The FDA—which is also worrying about cadmium—has found that the tranquilizer triflupromazine (commercially, Vesprin) has a lethal effect on rats' unborn offspring. It is now screening other widely used promazine tranquilizers. It has so far pronounced no

• Chemicals called nitrosamines are produced in some foods and probably in the body by nitrate and nitrite preservatives in ham, sausage, smoked fish and other food products. These preservatives are under attack because nitrosamines are known cancer producers in animals. Oakridge National Laboratory biologists have now found that a nitrosamine causes mutations

in mouse liver cell preparations.

So go some of the gloomy reports from the world of chemistry.

There are some hopeful ones, too. There are new tests for mutagens, chemicals that cause mutations. More are badly needed.

The FDA is seeking funds to establish a National Center for Toxicological Research at the Army's former Pine Bluff Arsenal, Ark., biological labs. FDA is also struggling with a review of more than 600 long-used food additives on what it loosely calls its "generally recognized as safe" or GRAS list.

The average American's annual food additive consumption is expected to increase

from five to six pounds in the 1970s. Production of all chemicals is expected to increase by 73 per cent.

The administration's proposed Toxic Substances Act would authorize the head of EPA to restrict or ban chemicals and prescribe standards for tests of new ones. "The act," states Ruckelshaus, would establish as a national policy that new chemical substances should be adequately tested."

Boston's Dr. Epstein says of the administration proposal:

• It relies too much on expert boards named by the National Academy of Sciences—boards he calls "biased" in several instances—with "no opportunity for early input by scientific and legal representatives of consumer viewpoints."

• It excludes pesticides and food additives as covered by other acts "which we know are grossly deficient."

• "There is no requirement for efficacy"—for putting the onus on the producer to show that the chemical is needed and can do what it purports to do. White House conferees on nutrition last year made such an "efficacy" recommendation.

A pesticide control bill introduced by Sen. Gaylord Nelson (D-Wis.) with Sen. Hubert H. Humphrey (D-Minn.) would require it. It would weigh benefits as shown by specific data against possible hazards, known and unknown.

Many hazards will inevitably remain unknown until new chemicals are put to wide use. But much of the rush to questionable new ones could be

halted, Dr. Epstein maintains, if a chemical—like a drug—since the Kefauver reforms—had to "serve a socially useful purpose."

"If not," Epstein wrote recently in the British journal, *Nature*, "why introduce it and accept potential hazards without general matching benefits?"