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Chemical

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Drug Administration (F.D.A.) investigated the toxicity of hexachlorophene for the first time only when manufacturers applied for a pesticide food residue tolerance.

The "Status Report on the Toxicity of Hexachlorophene" was presented for internal circulation within the F.D.A. on May 28, 1970. A review of the scientific literature mentions the cases of accidental poisonings, burn encephalopathy and central nervous system poisonings. As well, Kimbrough reported that there is a skin disease known as "Chloasma" which is apparently associated with contact with hexachlorophene. She also reported cases of scrotal irritation resulting from application of hexachlorophene. More significantly, the Report contains the results of experiments done by Dr. Renate D. Kimbrough, and by Dr. R.J. Feldman and Dr. H.I. Maibach.

Kimbrough's chronic toxicity studies with rats fed sublethal doses of hexachlorophene daily for weeks or months revealed that they developed a "weakness" in their hindquarters that progressed to paralysis and that they exhibited signs of nervousness. Autopsy of rats fed 500 ppm hexachlorophene revealed that the brains were very soft in consistency and had occasional small holes. Animals fed much lower doses of the chemical also demonstrated this "spongy degeneration of the white matter". The spongy degeneration of white matter seems to explain the curious display of central nervous system involvement in humans poisoned with hexachlorophene.

Feldman and Maibach investigated absorption of various chemical compounds through the healthy human skin. They found that hexachlorophene was absorbed at a relatively constant rate, and when a dose of radioactive hexachlorophene was applied to the surface of the forearm of a volunteer, 3 percent of the applied dose was absorbed. Therefore, for 30 years, people's circulatory systems have been subjected to insult by the absorption of a substance never intended for inclusion in the circulatory system by either man or nature.

On August 14, 1971, two F.D.A. scientists, Robert E. Hawk and August Curley produced another report with the results of their research into hexachlorophene. This paper contained some alarming information. Firstly, exposure to hexachlorophene in the diet resulted in a linear relationship - the more hexachlorophene to which an individual is exposed, the higher the levels of it found in his blood. Secondly, people who were exposed to very low amounts of hexachlorophene in consumer products had significant amounts circulating in their blood streams, apparently derived through skin absorption. Thirdly, brain lesions were detected in animals which received one tenth the dose of that reported by Kimbrough.

Hexachlorophene is made from a compound called 2, 4, 5-T, a herbicide that has been used to defoliate much of Southeast Asia and which caused birth defects at astonishingly small doses. Compounds called chlorodoxins, are contained in 2, 4, 5-T, and some of these are among the most toxic substances known, causing birth defects at infinitesimally small doses. There is a good possibility that these dangerous dioxin contaminants of 2, 4, 5-T could end up in the finished hexachlorophene product. Preliminary results of Dr. Jackie Verrett's research indicated that there might be some cause for worry in hexachlorophene as a cause of birth defects. When she was unable to continue her research, hexachlorophene manufacturers undertook to determine if there was chlorodoxin impurities in hexachlorophene. So far they have been unable to discover any compounds that might cause birth defects.

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