

DDT, DDE, and population increase

by Thomas H. Jukes, Ph.D.

The latest DDT scare story, that its metabolite, DDE, causes emasculation, is ridiculous and unsubstantiated. The author is a professor of biophysics in the Department of Integrative Biology at the University of California at Berkeley.

By prevention of tropical diseases, especially malaria, DDT is considered to have made a major contribution to population increase. For example, Alexander King, a founder of the Club of Rome, stated: "In Guyana, within two years, [DDT] had almost eliminated malaria, but at the same time the birth rate had doubled. So my chief quarrel with DDT in hindsight is that it has greatly increased the population problem."¹

S.W. Simmons noted in 1959: "The sociological changes brought about by DDT are only beginning to be apparent. In some countries, Madagascar for example, the population has doubled since 1947, although it had been practically stationary for years previously. A DDT malaria campaign was initiated in Madagascar in 1949 and is largely credited with the population increase. This is no isolated phenomenon."²

In Afghanistan, "in the town of Pulikhanuri, where the total population had been 5,000, improvement in health conditions resulted in an increase in the population to 20,000."³

The records show that in country after country, mortality decreased greatly when DDT was used for controlling malaria, and nowhere are there reports of demasculinization as a result. We are now told that DDT, through its metabolite DDE, may be a demasculinizing agent^{3,4} and that "its ubiquity in human fat may be responsible for falling sperm counts and other reported abnormalities of male reproduction." Also, testicular cancer is mentioned as possibly "linked with" DDE. Our old friend "the tip of the iceberg" is invoked. (Probably we shall soon hear of the opening of Pandora's box.)

The effects of high levels of DDT in human beings were reported by the U.S. Public Health Service.^{5,6} Laws et al. found that workers in a DDT factory had a daily average intake of DDT about 440 times as high as that of the general population in 1965.⁵ The clinical findings did "not differ significantly from those one might expect in a group of similar age and economic status with no occupational exposure to DDT." The married male workers had an average of 4 children per family. The largest families had as many as 13 children, and the (male) supervisor had 8.

Inhabitants of Triana, Alabama ingested fish containing levels of DDT plus DDE up to 627,000 parts per million

(ppm), because residues of DDT were present in a local river. The main measurable effect was an increase in gamma glutamyl transpeptidase (GT) in the blood. A report by the U.S. Public Health Service said, "The effect on GT is small and probably does not affect well-being."^{6,7}

R. Pal reported that the average lifespan in India was 47 years, as compared with an average of 32 years before the malaria eradication campaign, in which 147 million pounds of DDT were used.⁸

Ottoboni et al. found that DDT improved reproductive performance in multigenerational studies with rats and dogs.^{9,10} The DDT used by Ottoboni contained 2% DDE. She commented that the reproductive performance of 52-week-old rats indicated that "DDT may also exert a protective effect against age decrement of the reproductive process."⁹ The rats received up to 200 ppm of DDT, including 4 ppm of DDE, in the diet. Her studies with beagle dogs were through 3 generations which produced 650 pups.¹⁰ "There was no effect of DDT (1 to 10 mg/kg body weight/day) on morbidity, mortality, gross or histologic findings in any of the dogs."¹⁰

No regard for evidence

Despite the abundant evidence to the contrary, *Nature* magazine published an editorial titled "Masculinity at Risk" with a subhead stating, "The discovery that the major metabolite of DDT may damage male reproduction deserves attention." The editorial states that there is a possibility that the ubiquity of DDT in human fat "may be responsible for falling

Tired of scientific hoaxes?

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"The Lies of Rachel Carson," by Dr. J. Gordon Edwards, Summer 1992.

"Malaria: The Killer That Could Have Been Conquered," by Dr. J. Gordon Edwards, Summer 1993.

"DDT, The *New York Times*, and Judge Irving Kaufman," by Dr. Thomas H. Jukes, Spring 1992.

Also, see "Save the Planet's Humans—Lift the Ban on DDT," *EIR*, June 19, 1992.

The Gender Benders

Are environmental "hormones" emasculating wildlife?

By JANET RALOFF

Over the past 50 years, researchers have discovered a host of "environmental hormones"—chemicals and pollutants that disrupt biological processes, often by mimicking the effects of naturally occurring hormones. In the past few years, the discovery of these "environmental hormones" has led to a new branch of environmental science: endocrinology. This new field is concerned with the effects of these "environmental hormones" on the reproductive systems of animals, including humans. Some of the most dramatic examples of this phenomenon are the "feminization" of male fish and the "masculinization" of female fish.

SEXES: Animal Reproduction Trouble

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That Feminine Touch

Are men suffering from prenatal or childhood exposures to "hormonal" toxicants?

By JANET RALOFF

Are men suffering from prenatal or childhood exposures to "hormonal" toxicants? The discovery that the major metabolite of DDT may damage male reproductive systems is a cause for concern. It would be too much to ask that the chemical industry should have paid attention to the fact that the chemicals it produces are also being used as pesticides. The fact that the chemicals it produces are also being used as pesticides is a cause for concern. It would be too much to ask that the chemical industry should have paid attention to the fact that the chemicals it produces are also being used as pesticides.



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"My fear is that we will find more and more instances of this as we learn what to look for, it doesn't look like few beautiful incidents. The problem keeps accumulating and getting worse and worse."

NEWS AND VIEWS

Another DDT connection

Richard M. Sharpe

As we approach the half-century of the end of the Second World War in Europe, it is worth reflecting on the many ways in which the war has shaped our world. One of the most significant of these is the widespread use of DDT as a pesticide. DDT was first synthesized in 1872, but it was not until the 1940s that it was widely used as a pesticide. It was used to control the spread of malaria and typhus, and it was also used to control the spread of insects that carried diseases. DDT was so effective that it was used in many other ways, including as a preservative for wood and as a disinfectant. However, it was not until the 1960s that the dangers of DDT were discovered. In 1962, Rachel Carson's book *Silent Spring* exposed the dangers of DDT to the general public. Since then, DDT has been banned in many countries, and its use has been severely restricted in others.

PROBLEMS IN BIOLOGY

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The latest big lie against DDT is that DDE, one of DDT's breakdown products, damages male reproduction. The evidence? Shrunk alligator penises! (Whatever happened to "small is beautiful"?) The lack of evidence of a connection between DDT and emasculation in wildlife did not stop the propaganda aimed at males among the hoax-prone human population. In the United States, the National Public Radio news broadcast on the subject included the warning to men not to eat imported fruit from countries such as Mexico that might still use DDT.

sperm counts and other reported abnormalities of male reproduction. . . . The plain truth [sic] is that it would be more alarming if the recent increase in the rate of testicular cancer (which Denmark is taking seriously), were linked with p,p'-DDE and were the tip of a larger iceberg."

In the same issue, there is a comment by R.M. Sharpe, embellished by a photograph of a plane spraying DDT over Athens in 1946, saying that "only 20 or so years [after World War II] was it realized that DDT was environmentally disastrous, as portrayed in Rachel Carson's *Silent Spring*."

Portrayal does not necessarily mean proof. Sharpe continues to expound on the increase in testicular cancer, the introduction of estrogenic chemicals, including o,p'-DDT, an isomer of DDT, and "some modern pesticides" (unnamed) which "could have exerted effects then," in the period from the 1940s to the 1960s, "on developing males which have only become apparent in more recent years."

But why were no effects found earlier under conditions of high exposure to DDT?

Sharpe continues by citing the case of male alligators in Lake Apopka in Florida which "contain high levels of p,p'DDE and have abnormally small penises, amongst other reproductive changes." He says that "perhaps the most remarkable aspect of the findings of Kelce, et al. (*Nature* 375: 581-585, 1985) is that it has taken 50 years to discover that the main metabolite of DDT is an anti-androgen."

Sharpe, however, fails to list the dosage of DDE employed by Kelce, et al.¹² This dosage (on rats) was 100 milligrams (mg) of DDE per kilo of body weight per day, administered by gavage during gestation or in weaning (21-day-old) male rats until 57 days of age.

Twice this dosage was used for 120-day-old adult male rats.

A level of 100 mg of DDE per kilo of body weight per day is 7 grams per day for a 70 kg human being—about 170,000 times the 1965 intake of DDT in the general population. The levels of DDE, according to Wolff, et al.,¹³ are 10 nanograms per milliliter of blood in recent studies with human beings—far below the levels studied by Kelce et al., who seem to have forgotten that "the dose alone makes the poison."

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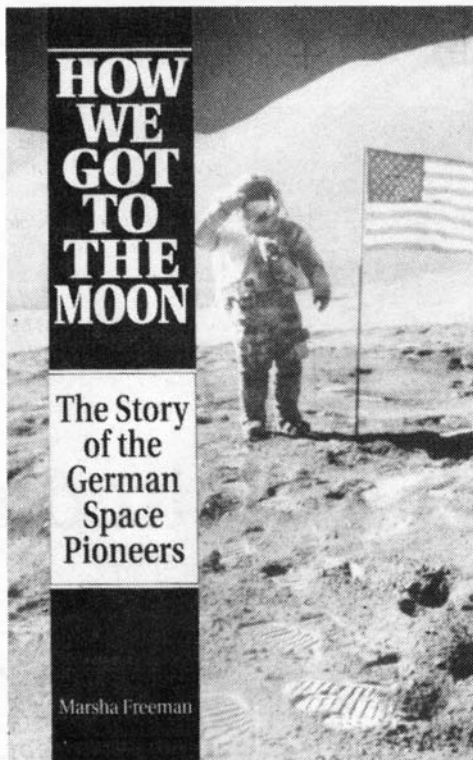
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