

# AGENT ORANGE: WHAT ISN'T SETTLED

The Agent Orange settlement, announced last week, promises to leave more issues unsettled than it actually resolves

By JANET RALOFF



In January 1962, President John F. Kennedy gave his approval to begin Operation Ranch Hand in Vietnam — an Air Force program to defoliate ground cover protecting enemy troops. In nine years of aerial spraying, Ranch Hand rained an estimated 19 million gallons of chemical herbicides over between 10 and 20 percent of the South Vietnamese landscape. Of several herbicides deployed, Agent Orange proved to be the Air Force favorite: U.S. planes doused the Asian country with 11 million gallons of it.

Today, thousands of U.S., Australian and New Zealand troops who served in Vietnam during the period of aerial spraying are claiming that exposure to these herbicides has harmed them, and in some cases their children as well. Prevented by the Supreme Court's *Feres* decision from suing the U.S. government, the veterans and their families brought suit instead against the seven chemical firms that manufactured under military contract Agent Orange and its dioxin-tainted cousins — Agents Pink, Green, Purple and Orange II.

But in a surprise development last week, a tentative settlement was reached between the veterans and the chemical manufacturers. Coming on the eve of final

jury selection in the five-year-old suit, it averted what many had been predicting would have been the most complex case ever brought before a U.S. jury.

Though the compromise agreement promises to settle some of the litigants' long-standing complaints, it also promises to leave unresolved quite a few more. Interestingly, those issues left unsettled are precisely the ones in which the legal and scientific community are most interested, because they would have clarified legal prospects facing a host of other equally nightmarish cases involving "toxic torts" — civil suits asking remedies for injury from toxic substances.

In fact, although it is unlikely, the case could still go to trial. Many details of the proposed settlement are still to be ironed out, such as how a claimant establishes he or she deserves compensation; how much will be paid out for any particular problem; whether there's a ceiling on how much an individual may be compensated; and if there is not enough money to go around, who gets priority in receiving funds. Once these and other pertinent details are agreed to, all parties of the suit will have an opportunity to voice objections in a hearing expected to occur within the next 60 to 90 days. If their objections are not

satisfied, class members may pull out of the settlement. And among the conditions that prompted the chemical companies to initially agree to the accord was a proviso permitting them to pull out if the number of plaintiffs who choose to opt out "is substantial."

The chemical companies only agreed to the arrangement because they expected it would indeed *settle* any legal claims by the more than 15,000 known class-action members. Veterans who had chosen not to become a party to the class action — and prior to the settlement, several had — retained the right to sue separately over their alleged injuries. If the number of individuals ultimately expected to bring independent suit against the defendant chemical companies became too large, the value of the settlement — in limiting the defendants' litigation costs — would diminish substantially.

But why would the veterans opt out? As it now stands, the defendants have agreed to set up a "trust fund" with a starting kitty of \$180 million. Accruing interest at a rate of roughly \$60,000 daily, the fund is expected to eventually amass almost \$250 million in disburseable funds. The number of claimants, however, is expected to number in the tens of thousands. If 20,000



U.S. Air Force

it," he said.

Rothstein was referring to the fact that the significance of the Agent Orange suit was expected to go far beyond the question of whether veterans deserved to be compensated for injuries they claim had been caused by herbicides. Had it gone to trial, the case stood not only to be a catalyst in the resolution of several important legal ambiguities, but also in the creation of new law.

Specifically, the case was expected to redefine the type of litigation for which class action is deemed appropriate. Second, it would have tested the reach of the *Feres* doctrine in cloaking the government and its contractors from litigation over personal injuries. Manufacturers were watching the case for the creation of precedents affecting product liability law. And finally, the entire science community was watching to see how the judicial system made use of the confusing scientific record amassed on dioxin toxicology. If the requirements for establishing injury causation (SN: 11/19/83, p. 330) had been substantially relaxed, and all parties to the case knew this was a possibility, it would have had a direct bearing on how subsequent toxic torts were resolved—from those involving asbestos to leaking toxic waste dumps.

Why did the plaintiffs choose to settle, especially after asking for a trust fund involving 10 or more times the amount to which they ultimately agreed? According to Washington attorney and product liability expert Victor Schwartz, they probably realized "that there was very little predictability as regards how this case would come out. I see this case as one where the plaintiffs could have walked away with absolutely nothing because of the very difficult causation problem: A fundamental of tort law—one no court has moved away from—requires tying the product to injury."

He is not alone in believing the veterans would have a tough time establishing that exposure to dioxin caused their injury. In fact, of the many questions in this case, this would likely have proven the hardest to answer because the scientific record on dioxin toxicology is so equivocal.

The litigants are claiming a wide spectrum of health effects from their exposure to the herbicides—including cancer, liver damage, peripheral nerve problems, chloracne, and birth defects. In a 46-page "complaint" filed with the U.S. District Court in New York City, the litigants alleged that the chemical companies that manufactured Agent Orange and related phenoxy herbicides for use in Vietnam breached their contract with the military by supplying a defective product—specifically, that the chemicals were adulterated with an unauthorized toxic contaminant, 2,3,7,8-tetrachlorodibenzoparadioxin (TCDD). They also contended that the chemical companies never warned the military of the contaminant nor its poten-

tial for human harm—even though the manufacturers "knew or should have known" about the contaminant's presence and toxicity.

The defendants were charged with criminal negligence, with fraud, with breach of both implied and expressed warranties and with a legal tenet known as "strict liability." And because they allowed their products to be distributed in containers that did not identify the manufacturer, the defendants were asked to share responsibility for health effects suffered by TCDD-poisoned servicemen in proportion to the market share that each firm's products represented.

For their part, the chemical companies—Dow Chemical, Monsanto Co., Diamond Shamrock Corp., Uniroyal Inc., T. H. Agricultural and Nutrition Co., Thompson Chemical and Hercules Inc.—claim that scientific data do not support the contention that these herbicides are causally related to the health effects that have been cataloged thus far among the veterans and their families.

TCDD is now universally regarded as the most toxic of the chlorinated dioxin family's 75 members. In fact, TCDD is frequently termed the most toxic chemical made by man. But is it? TCDD has been demonstrated to kill 50 percent of those guinea pigs to which it has been administered at doses as small as 0.6 to 2 micrograms ( $\mu\text{g}$ ) per kilogram of body weight. (A microgram is a millionth of a gram.) However, for the monkey the minimum dose required to kill 50 percent of the animals tested is closer to 70  $\mu\text{g}$ . And in industrial accidents where humans have been exposed to proportionately equal or greater doses, there have been no deaths immediately traceable to the exposures, and little sign of disease beyond chloracne, a potentially disfiguring disease marked by acne-like eruptions that can persist, despite medical treatment, for 15 years or more.

James Saunders, a physician and toxicologist who directs biomedical research in Dow Chemical's health and environmental sciences division, tells of one 1964 accident at the company's Midland, Mich., facilities where TCDD exposures in some of the 61 affected workers are now roughly estimated to have been "some considerable number of micrograms—500  $\mu\text{g}$  or so." If true, those doses are roughly equivalent to five times the lethal dose for guinea pigs.

Though they were put through a battery of medical tests at the time, the workers appeared to have suffered no adverse health effects other than chloracne; 49 workers developed the disease. Because animal studies had suggested the liver might be a target organ for TCDD, a liver biopsy was performed on the worker most exposed in the accident; it was negative. "There were no objective medical findings in any of these individuals with the exception of chloracne," Saunders says, "which

veterans or family members with derivative claims (for miscarriages or birth defects allegedly deriving from a veteran's exposure) established justifiable claims, there would be only an average of \$12,500 available for each—not much considering today's health costs. If 50,000 awards were made, there would be a mere \$5,000 for each. So a veteran or group of veterans believing they could win higher claims by suing individually may choose to opt out. If enough do, the still fragile settlement agreement could fall apart.

Yet even if the settlement holds up, it will have left a number of the most important legal questions unanswered. And it may have been the intention of doing just that which most motivated the defendants' decision to settle.

Explains trial law authority Paul Rothstein of the Georgetown University Law Center in Washington, D.C., "one of our frustrations in cases like this is that you seldom get a decision" because the parties decide to settle out of court. In an interview with *SCIENCE NEWS* weeks before the settlement was announced, Rothstein predicted the Agent Orange accord. Why? "The industry may not want to push some of the questions here to a decision because it could [risk getting] bad law out of

leads us to believe that man is less sensitive to dioxin than other animal species."

Moreover, Saunders points out, the waste chemicals to which workers were exposed in the Dow accident contained TCDD levels tens of thousands of times higher than those found in Agent Orange. That, taken together with data from other industrial accidents, he says, suggests the comparatively small exposures that undoubtedly occurred in Vietnam are unlikely to have produced the type of long-term health effects that have been reported by the litigants in this suit.

Other assessments of TCDD, however, emphasize its potential danger. Last month the National Institute for Occupational Safety and Health (NIOSH) reported in the

North Vietnamese children whose fathers had fought in South Vietnam (SN: 9/3/83, p. 156)—and presumably were exposed to the TCDD-contaminated defoliants. (It should be noted, however, that the toxicology community is somewhat skeptical of this study based on its methodological design.) Finally, a Jan. 27 report in *MORBIDITY AND MORTALITY WEEKLY REPORT* by CDC announced that the agency had decided to consider TCDD greater than 100 parts per billion in residential soil to be "a level of concern."

Though exact levels of TCDD in Vietnamese soil were never quantified, estimates made by the Air Force suggest a single dose of Agent Orange might have resulted in concentrations roughly 100 times

seven derivative cases that were to have been presented in this class action. The cases chosen were supposed to be not only representative of the thousands of cases not highlighted, but also the best cases the lawyers could identify linking Agent Orange and illness.

The chemical companies had intended to play on the absence of Ranch Handers in their defense. If the most exposed are not the most injured, then maybe something else is responsible for the veterans' problems, the defendants were going to argue.

Donald Frayer, claims manager for Dow Chemical's legal department, notes for example that there were 100,000 cases of malaria among the Vietnam troops. Not only has malaria been implicated in a form of cancer—Burkitt's lymphoma—but also Dapsone, the medicine initially used to treat the particularly resistant form of malaria encountered in Vietnam, appears to have caused a disease of the blood marrow in at least 16 men, he says. (Eight of them died.) Another 70,000 troops in Vietnam were hospitalized for skin conditions. And, says Frayer, "that was estimated to be about one percent of the dermatological problems that they [the troops] had." He also points out that "about 20,000 men were hospitalized for hepatitis, which today is considered a possible factor in liver cancer."

Frayer says Dow had planned to argue that if Vietnam veterans have special medical problems, "these are all candidates for consideration"—along with Agent Orange—as possible predisposing factors.

Explains one lawyer representing veterans who had chosen to opt out and have their cases tried independent of the class action, "This is probably one of the few very strange cases where delay benefits the plaintiffs. Normally, in this situation, delay benefits the defendant." There are at least eight major epidemiological studies looking at Vietnam veterans exposed to TCDD and Agent Orange that are expected to release new findings within the next five years. Realizing how shaky their case would be today trying to link TCDD with disease causation in the veterans, several lawyers advised their clients to sit back and await results of these upcoming studies rather than risk all by going to court too early as part of the class action.

If the jury had decided that none of the representative cases in the class action had proven their illness was attributable to the herbicides, all other members of the class would have lost their case too. Owing to the equivocal scientific record on which their proof of disease causation would have to have been made, the plaintiffs may have decided to accept a smaller sum than they considered ideal as a hedge against going home without anything to show for their efforts.

As Schwartz puts it: "Juries are not, in my experience, as plaintiff-oriented as lay people think." He points out that this case



Wide World

Centers for Disease Control (CDC) publication *MORBIDITY AND MORTALITY WEEKLY REPORT* that it was recommending "TCDD be regarded as a potential occupational carcinogen... based on studies that demonstrate the carcinogenicity of TCDD in rats and mice." The report also mentioned animal studies that had shown the chemical to be a teratogen, threat to immune-system functioning and source of blood problems.

An Air Force study of Ranch Hand participants recently reported indications of suspicious symptoms among the men it studied (SN: 3/3/84, p. 132). What's more, a study reported last year at the International Symposium on Herbicides and Defoliants in War, in Ho Chi Minh City, Vietnam, cited elevated numbers of birth defects among

lower than those the CDC described as being "of concern."

In its newer epidemiological study, however, the Air Force admitted that "the average Ranch Hand was substantially exposed to the herbicides and dioxin (relative to other military personnel in the Republic of Vietnam) on almost a daily occupational basis. Exposure calculations have estimated that an average Ranch Hand, in his tour received at a minimum, 1,000 times more exposure to Agent Orange than would an average unclothed man in an open field directly beneath [the] spraying aircraft."

If Ranch Handers were most exposed to Agent Orange, were they also — of all Vietnam veterans — the most injured by it? Evidentially not. Surprisingly, there were no Ranch Handers among the five veterans and

## DIOXIN-TAINTED HERBICIDES USED IN VIETNAM

Name	Chemicals	Used	Amount used (gallons)	TCDD level (parts per million)
Agent Orange	50/50 mix of n-butyl esters of 2,4-D and 2,4,5-T (2,4,5-trichlorophenoxyacetic acid)	1965-70	10,646,000	2
Agent Orange II	50/50 mix of n-butyl ester of 2,4-D and isooctyl ester of 2,4,5-T	1965-70	*	2
Agent Purple	50/30/20 mix (by wt.) of n-butyl ester of 2,4-D, n-butyl ester of 2,4,5-T, and isobutyl ester of 2,4,5-T	1962-65	145,000	33
Agent Pink	60/40 mix (by wt.) of n-butyl ester of 2,4,5-T and isobutyl esters of 2,4,5-T	1962-65	123,000	66
Agent Green	100% n-butyl ester of 2,4,5-T	1962-65	8,200	66

\*Although 900,000 gallons were delivered, the Department of Defense is not sure how much was used; if any, it was "negligible."

was hardly a classic product liability action where someone had injured his foot in a lawnmower. Schwartz maintains that a good defense should have been able to convince the jury that in times of war—as some have likened the Vietnam conflict—the standards of civilian accountability may have to be suspended. “And even if there were fault involved, a good defense could be made to shift responsibility onto somebody else”—like the government, he says.

Which brings up an important point, namely what it would have taken to win the suit. If some or all of the plaintiffs had succeeded in proving to the court that their problems indeed stemmed from herbicide exposures, would the chemical companies be held responsible?

To be guilty of negligence, Rothstein says, it makes a difference whether the chemical companies knew their products were contaminated with a harmful chemical. According to Frayer at Dow (Dow was the military's leading supplier of Agent Orange), the defense was prepared to argue that the levels of TCDD in Agent Orange—when it was made for the military—were below the limits of detection; therefore, the defendants did not knowingly sell a harmful product.

However, to be guilty under “strict liability,” the defendants need not have known their product was dangerous. All that must be proven is that their products caused harm. This was, in fact, expected to be the plaintiffs' strongest argument in the suit.

According to Joseph Page, an authority on product liability at the Georgetown University Law Center, “If you can call [TCDD] an inherent part of the product, something that's unavoidable... then [liability] becomes a question of whether you gave adequate warning” to the buyer or user. “If you knew or should have known

and didn't give adequate warning, you could be liable,” under strict liability, he says. However, he points out, “If you didn't know and couldn't have known—and of course didn't give any warning—and then side effects developed, in most states [those harmed] would not be able to recover” compensation for injury.

Even that is not an iron clad defense, however. Page notes that in the asbestos case *Beshada vs. Johns Manville*, the New Jersey Supreme Court recently held that lack of knowledge was irrelevant: harm alone justified responsibility under strict liability.

Frayer says the defendants could also have pointed to evidence suggesting the government did not use their herbicides properly. If the defendants can prove that, “then they have a defense,” Rothstein says, because “there's a well-known defense to product liability that if the product is not used in accord with the manufacturer's instructions or recommendations, then the manufacturer is not liable.”

However, even if the government did not misuse the product, the manufacturers might still have avoided legal responsibility for any harm their products caused if the court allowed them the “government contractor defense.” This evolving, and not fully tested defense claims that contractors who make a product to government specifications should have a right to the same immunity from prosecution that the government has under *Feres*.

Frayer says that to shore up their claim to immunity from prosecution, the chemical manufacturers could have shown evidence proving that the government was every bit as aware as the manufacturers were of the herbicides' dioxin content, of dioxin's toxicity, and of the inevitability of TCDD trace contamination in these herbicides.

But clinching each side's decision to settle in this case, Schwartz believes, was trial judge Jack Weinstein's announcement that he intended to use this case as a catalyst for developing a *federal* tort law. (Tort law deals with civil remedies for wrongful acts other than breach of contract.) The Erie Doctrine says that a federal court adjudicating a tort case is supposed to use the same state-developed law as would a state court if it were trying the case. But Weinstein—renowned for his courage in charting new legal waters—argued that because no one state's law was clearly most applicable in this obviously national suit, it was probably time to evolve the law.

As both sides knew well, appellate courts frequently overturn innovations such as new laws. And if the case were overturned on appeal because of the law applied, a new trial would be required, effectively doubling the costs of this already enormously expensive litigation. Moreover, since plaintiffs' lawyers are paid a percentage of their clients' awards—and therefore get paid only if they win—the idea of a second trial for no additional pay (and no guaranteed pay at that) was undoubtedly a sobering prospect during the settlement negotiations.

Tackling such a complicated case as this today is like gambling in Vegas, Schwartz says: No one goes into it certain of a win. Seen in that light, the settlement offered everyone the only guarantee for some success. The plaintiffs got a mechanism set up for instituting compensation. The defendants were offered an expedient end to a lawsuit that had already cost them millions and would have cost them many times the settlement amount had they lost. Moreover, the herbicide manufacturers were able to extricate themselves without admitting guilt. □