

Monsanto

MAR 20 1980

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DATE: March 19, 1980

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F.Y.I., enclosed is an approved copy of Monsanto's official position on the "Agent Orange" issue. This material will be the subject of a broad internal/external communications effort over the next several weeks.

I've also enclosed a major three-part feature on Agent Orange from The (Baltimore) Evening Sun. Don't let its length deter you from reading it. It's well worth the effort and easily the most balanced, fair, comprehensive treatment of the subject I've ever seen in the news media.

Indeed, it says things and makes points that I've suspected for a long time to be truly motivating factors, but for obvious reasons couldn't very well say in a Monsanto statement.

I do intend to include this series in packets of information we supply on request to interested parties, including other news media sources.


Dan R. Bishop

DRB:ec

Enclosures

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The Evening Sun

BALTIMORE, MARYLAND

PART 1

WEDNESDAY, FEBRUARY 20, 1980

Vietnam veterans' fear, rage focus on 'deadly fog'

Did Agent Orange, the Vietnam War herbicide, leave a legacy of sick veterans and deformed children? Thousands of angry Vietnam veterans claim it did, and during the last few years their bitter charges have grown into a major national controversy.

The Agent Orange question is highly emotional, but are there facts behind the feelings? In a three-part series beginning today, The Evening Sun examines the issue and the scientific efforts to determine whether the veterans' fears are real or imagined.

By Jon Franklin and Alan Doelp

Three years ago, Maude de Victor sent the first waves of fear rippling through the nation's 2.5 million Vietnam War veterans who may have been exposed to Agent Orange.

Ms. de Victor was a Veterans Administration bureaucrat in Chicago who processed disability claims from Vietnam veterans. She thought she saw a pattern in the veterans' symptoms.

The claims that moved across her desk spoke of cancer, deformed children, numbness and tingling in the hands and feet, skin rashes, liver disease, loss of sex drive, radical mood changes and generalized weakness. She associated those symptoms with poisoning by chlorinated hydrocarbons.

Agent Orange, the defoliant used on the Vietnamese jungle, was contaminated with one of the deadliest of those hydrocarbons, 2,3,7,8-tetrachlorodibenzo-*para*-dioxin or, as it later came to be known, dioxin.

Ms. de Victor took her suspicions to veter-

ans' groups in Chicago, and they talked to a local television newsmen. The result was a CBS network documentary, "Agent Orange: Vietnam's Deadly Fog."

That documentary, and others that followed, hit the veterans' community like a bomb. Many Vietnam veterans were still angry over the handling of the war and the cold welcome they received when they returned home, and the parade of sick and dying veterans across the television screen revived the old bitterness.

Soon veterans with a wide range of illnesses began contacting the Veterans Administration. Government agencies, veterans groups and law firms started compiling lists of men who considered themselves victims of Agent Orange.

By last December the Veterans Administration reported that about 5,000 veterans had appeared at VA hospitals to file Agent Orange claims.

From the first the issue was emotionally charged, and Agent Orange became an outlet for the accumulated frustrations of the ex-servicemen. The controversy grew into a national furor despite an almost total lack of evidence that the herbicide ever posed a danger to American soldiers.

One of the first veterans to seize the issue was Paul Reutersham. A colon cancer patient, he blamed his illness on exposure to Agent Orange. Despite his terminal illness he founded Agent Orange Victims International, the first

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advocacy group to focus on the controversy, and filed a lawsuit against the chemical companies that manufactured the herbicide.

Before he died in 1978 he summed up his dilemma in a declaration that became the veterans' battle cry.

"I'm a living nightmare that won't go away," he said. "I died in Vietnam and didn't even know it."

The publicity, coupled with active organizing efforts launched by Mr. Reutersham and others, attracted many veterans with tragic stories.

In 1967, for instance, John Woods returned from Vietnam with a severe rash that wouldn't go away. A Veterans Administration doctor diagnosed it as "jungle rot" and placed him on 60 percent disability.

After returning to the United States, Mr. Woods steadily lost weight. In 1973 his wife, Mildred, had a miscarriage and discovered that the aborted fetus was missing half its face.

She soon became pregnant again, and this time carried the child to term. It was born with a noncancerous tumor of the face.

Mr. Woods blames Agent Orange for the rash, the miscarriage and the tumor.

Another ex-serviceman, Ron DeBoer, 31, returned from Vietnam, married, and fathered a normal child before his right testicle began to swell.

A doctor diagnosed testicular cancer. Surgeons removed a highly malignant

6... I'm a living nightmare that won't go away. I died in Vietnam and didn't even know it... 7

—Paul Reutersham

tumor and treated Mr. DeBoer with cobalt therapy.

Mr. DeBoer believes Agent Orange caused the cancer.

Sidney Norris, 34, came back with a rash that never disappeared.

He fathered two children, both of whom developed weak leg and arm muscles that keep them wobbly and off balance. Now the oldest is losing his eyesight and the family's doctors, puzzled, say nothing can be done.

The family blames Agent Orange.

Though the growing roster of alleged Agent Orange victims lists a number of cancer cases and birth defects, most complaints focus on less dramatic ailments.

Jerry Wilson, for instance, isn't dying and doesn't have deformed children. But the 30-year-old ex-serviceman says his persistent back pain is so bad that he can't sit up straight in a chair. Periodically, skin lesions flare up and cover his body, leaving scars larger than a quarter.

In 1978 he spent nine weeks in the Lakeside VA hospital, undergoing 133 blood tests and 66 X-rays. The doctors say he has an unknown virus.

He says he was poisoned by Agent Orange.

Other veterans hold the herbicide responsible for ailments including numbness in the extremities, psychological problems and rashes, and at least one believes Agent Orange causes him to abuse his wife and children.

Science lent at least an initial credence to the claims. In animals, chlorinated hydrocarbons can cause cancer and birth defects, and human victims of poisonous hydrocarbons, such as kepone, often develop nerve damage, skin rashes and less easily documentable problems like nervousness and impotency.

The Agent Orange issue became even more credible when preliminary scientific studies began to indicate that dioxin, the hydrocarbon that contaminated the wartime herbicide, was in fact extremely dangerous—perhaps the most deadly chemical ever manufactured by man.

Dr. James R. Allen, a primate researcher at the University of Wisconsin, fed a diet containing half a part per billion of dioxin to eight monkeys. Though half a part per billion is an incredibly tiny quantity, five of Dr. Allen's eight monkeys were dead in nine months.

Preliminary studies by another scientist, Dr. Jeanne Stellman, raised the spectre of a cancer epidemic among Vietnam veterans.

Working under the auspices of the National Health Foundation, a private group in New York, Dr. Stellman sent forms to a number of veterans. Of the 570 respondents, 35 had cancer.

The malignancies included one of the lung, three of the kidney and several cases of testicular cancer.

Chlorinated hydrocarbons tend to collect in fat tissue, so another group of scientists took biopsies of fat tissue from 33 men, 22 of whom had served in Vietnam. Of the samples so far analyzed, about half are thought to contain dioxin.

As such information circulated among sick and worried Vietnam veterans, it was augmented by rumors that the Veterans Administration was giving the claimants short shrift. There were charges that VA doctors were diagnosing liver-damaged men as alcoholics, refusing to examine the deformed children of Vietnam veterans and generally denying claims and services related to Agent Orange.

The rumors, the television and the newspapers united the veterans.

Neil Burke, an Annapolis policeman who served in the defoliated areas of Vietnam, is typical of the worried veteran. The issue provokes unwanted memories, and he speaks bitterly of his experience in Asia and the hostile reaction of his friends on his return. Many of his friends wouldn't speak to him and the phrase "baby-killer" became his personal symbol of the ingratitude of a selfish society.

Such bitterness, he believes, lends political force to the Agent Orange issue. The country's most prestigious scientific journal, *Science*, reached a similar conclusion.

"The diffuse rage of the veterans has now become attached to Agent Orange," the journal said. "Agent Orange has become a complex symbol for the perverse nature of the war, a symbol . . . that our enemy was ourselves."

Vietnam veterans generally consider themselves unwelcome in the traditional veterans' groups, like the Veterans of Foreign Wars and the American Legion. As the controversy grew, Vietnam veterans began to organize their own political action units.

4 . . . Why do I think it was Agent Orange? To be honest . . . because of the news media . . .

—Robert Juliano

erans of Foreign Wars and the American Legion. As the controversy grew, Vietnam veterans began to organize their own political action units.

Frank McCarthy, who claims to be an Agent Orange victim, took over Agent Orange Victims International after Reutersham died. Ron DeYoung, a Chicago veteran, formed the National Veterans' Task Force on Agent Orange.

In the meantime, Agent Orange became a principal focus of existing organizations, including the National Association of Concerned Veterans, Vietnam Veterans of America, and the National Veterans' Law Center at Washington's American University.

Though Mr. Reutersham is dead of cancer, the suit he filed against the chemical companies is alive and prospering. Now a class action suit representing a growing list of alleged Agent Orange victims, it's being pressed by some of the country's most high-powered environmental lawyers.

Victor J. Yannacone Jr., the attorney credited with getting the DDT ban a decade ago, is in charge of the legal action. He says the case is shaping up as the largest class action product liability suit in the nation's history. A favorable judgment could mean tens of billions of dollars for the veterans.

That prospect has further encouraged the development of local Vietnam veterans groups. Baltimore veterans joined the movement on Feb. 8, when about 250 men, many accompanied by their wives, held an organizational meeting in East Baltimore.

One of the first actions the Baltimore veterans took was to vote overwhelmingly to add their names to Mr. Yannacone's class action suit. After the meeting, several veterans began organizing subsidiary groups in the outlying counties. One such veteran was Robert Juliano, who expects to form an Agent Orange unit in Harford county.

One of Mr. Juliano's children, a 7-year-old, was conceived soon after he returned from Vietnam. The boy has learning disabilities, eye problems and a malformed foot.

Mr. Juliano blames Agent Orange.

"Why do I think it was Agent Orange? To be honest I, oh, well . . . because of the news media."

Tomorrow: Dead monkeys and frightened men.

The Evening Sun

BALTIMORE, MARYLAND

PART II

THURSDAY, FEBRUARY 21, 1980

Dangers of dioxin are proven, but not Vietnam vets' charges

Did Agent Orange, the Vietnam War herbicide, leave a legacy of sick veterans and deformed children? Thousands of angry Vietnam veterans claim it did, and during the last few years their bitter charges have grown into a major national controversy.

The Agent Orange question is highly emotional, but are there facts behind the feelings? In the second of three articles, The Evening Sun continues to examine the issue and the scientific efforts to determine whether the veterans' fears are real or imagined.

By Jon Franklin
and Alan Doelp

In 1976, eight healthy female monkeys lived in spotless cages at the University of Wisconsin.



But, as the weeks passed and they ate the Purina Monkey Chow put before them, they grew thin and listless. Their lashes fell out and their eyelids swelled.

Their immune systems lost the ability to fight disease and their hormone balances skewed wildly across the scientist's graph paper. Their liver function decreased, blood ves-

sels burst in their mouths, their fingernails and toenails thickened.

Finally the monkeys began to die, first one, then another, then another. Each went to the autopsy room for dissection. Samples of the dead monkey flesh were mounted on slides and centered under the objective lenses of high-powered microscopes. The cells were clearly abnormal.

Dr. James R. Allen had adulterated the monkey food with dioxin, the substance that contaminated the Agent Orange defoliant used in Vietnam. The purpose was to establish dioxin's effect on primates, a category that includes both monkeys and humans.

After five of the monkeys had died, Dr. Allen, the project's chief scientist, halted the research.

Former servicemen who believe [Continued, Page A 4, Col. 1]

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they were poisoned by Agent Orange say Dr. Allen proved their point. When the experiment was described in scientific journals published in 1977, the Agent Orange controversy moved into high gear.

But does the fate of the monkeys apply to what the Vietnam veterans say is happening to them?

In at least one aspect, the answer is yes. Dr. Allen added only one part of dioxin for every two billion parts of Monkey Chow, demonstrating that the compound is deadly at one-half of one part per billion. That makes dioxin one of the deadliest, if not the deadliest, substance ever manufactured.

That is consistent with earlier research performed on lesser animals. In mice, rats, rabbits and hamsters, tiny doses of dioxin cause liver malfunction, skin rashes, enzyme changes, anemia, immune system failure, cancer and birth defects. It might do the same things to guinea pigs too, but they die too quickly to tell.

And as many as 2.5 million U.S. servicemen may have been exposed to dioxin while serving in Vietnam.

Now hundreds of veterans are appearing at VA hospitals and lawyers' offices, citing the animal research and claiming that the country owes them treatment and disability pensions for a variety of diseases that they attribute to Agent Orange.

But the very research upon which they base their claims may ultimately prove them wrong.

The veterans contend they were permanently damaged by dioxin poisoning so slight that it produced few or no symptoms at the time. The three monkeys that survived Dr. Allen's killer doses of dioxin are now alive and apparently well, and at least one of the three has produced a normal infant.

The conflict between the scientific findings and the veterans' interpretation of those findings is characteristic of the Agent Orange controversy. At best the veterans' conclusions are premature. At worst they are contrary to fact.

To date, neither the veterans nor the scientists have furnished concrete evidence that:

- Vietnam veterans, as a group, are less healthy than other Americans of equivalent age.

- Excessive illness among the veterans, if it exists, can be laid to Agent Orange.

- Dioxin can cause serious delayed, as opposed to acute, health effects.

- Males exposed to dioxin have an abnormally high rate of defective children.

- Any compound, even dioxin, can cause some health effects in the quantities servicemen are likely to have been exposed to in Vietnam.

The lack of evidence concerning the relative overall health of Vietnam War veterans is basic to the issue.

To veterans' groups say the health problem is self-evident. They point to the long rosters of former servicemen who are suffering from diseases that range from skin rashes to cancer, and to the large proportion of those men who have defective children.

Compared to the 2.5 million men who went to Vietnam, however, the list of Agent Orange claimants is small. Epidemiologists say that in any population of 2.5 million men, hundreds would be expected to have rare cancers, unusual symptoms of vague origin and children with birth defects.

And the sickest of them would naturally be expected to come forward in response to television reports and newspaper stories about Agent Orange.

Epidemiologists refer to such groups as "self-selected populations." Self-selected groups generally include a disproportionate number of sick people, so the alleged Agent Orange victims cannot be considered representative of Vietnam War veterans.

Scientists say that the best way to determine the veterans' relative health is by doing large-scale epidemiological studies. It is the only way to establish the incidence of cancer in that group.

But even if studies eventually show that Vietnam veterans are experiencing relatively poor health, the cause is still not obvious.

The servicemen were exposed to Agent Orange, but they were also exposed to an assortment of viruses, bacteria, insects, drugs and foods not found in the United States.

Viruses, for instance, unlike dioxin, are known to lie dormant in the human body before manifesting themselves and causing sickness and death 10 years after the initial infection. And in animals, at least, viruses are known to cause cancer, nerve damage and deformed fetuses.

The next important unanswered question pertains to the delayed effects of dioxin poisoning. While dioxin is an extremely deadly substance, experimental animals who survive exposure don't seem to suffer any long-term illnesses.

Likewise, human beings exposed to dioxin as a result of industrial accidents appear to eventually recover their health.

One such accident occurred at a Monsanto chemical plant in Nitro, W.Va., in 1949. Of the workers exposed, 121 developed chloracne, a rash characteristic of acute dioxin poisoning. Several groups of scientists are now studying the surviving workers in an attempt to see if they are suffering the sort of delayed symptoms being claimed by Vietnam War veterans.

The studies of the plant workers documented numerous short-term effects of dioxin exposure including chloracne, nausea, headaches, blood disorders, liver abnormalities and impaired nerve function. However, the studies also show that most of those symptoms diminished over a period of time and eventually disappeared altogether.

Death certificates indicate that, three decades after the accident, the death rate among the Monsanto workers was completely normal—in fact, it was slightly lower than projected.

The most spectacular civilian exposure to dioxin occurred July 10, 1976 at Seveso, Italy, when a manufacturing accident caused huge quantities of the chemical to be sprayed into the air.

Italian authorities estimated that as many as 250,000 persons potentially were exposed to the dioxin. In "Zone A," the most heavily exposed area, most livestock and domestic animals died within a few days.

Many residents of Zone A developed the nausea, headaches and other immediate symptoms of dioxin exposure. Several hundred cases of chloracne were reported, almost all of them in children. Lab tests documented some liver and blood abnormalities.

Four years later, however, no widespread health problems have been reported in Seveso. The birth and birth defect rates remain normal.

The veterans' claim that dioxin exposure is responsible for an epidemic of deformed children is, like the claim of excess cancer rates, undocumented.

Since about one out of every thousand live births produces a defective infant, the several hundred cases of deformed children documented by veterans' groups are not statistically significant.

Female animals exposed to dioxin, or one of many other chlorinated hydrocarbons, often produce defective offspring. There is also some evidence, still controversial, that pregnant women exposed to dioxin experience a high number of spontaneous abortions.

There is considerable doubt among biologists, however, that men poisoned by dioxin could incur sperm damage leading to the birth of a deformed baby several years later.

The skepticism centers on a key difference between the male and female reproductive systems. The eggs of a female are formed at birth and if they are damaged by a chemical that damage persists and can express itself many years later.

The male, however, produces sperm continuously throughout life. If a male is exposed to a chemical like dioxin, the damaged sperm is cleared and replaced in a matter of months.

If Agent Orange did affect the sperm of Vietnam veterans, and if that sperm did cause the conception of a defective fetus five or 10 years later, the documentation of that fact would set a medical precedent.

Finally, many scientists have serious doubts that any chemical, no matter how poisonous, could have serious effects at the levels of exposure believed to have existed in Vietnam.

Some authorities say the levels of dioxin contamination in Agent Orange ran as high as 47 parts per million. While that is a relatively high concentration, its strength would have been considerably diluted as it drifted through the air and mixed with soil and water.

Few if any soldiers are believed to have been exposed to chronic doses of dioxin anywhere near as high as the monkeys in Wisconsin.

Anxious Vietnam veterans wait as scientists study dioxin danger

PART II

Did Agent Orange, the Vietnam War herbicide, leave a legacy of sick veterans and deformed children? Thousands of angry Vietnam veterans claim it did, and during the last few years their bitter charges have grown into a major national controversy.

The Agent Orange question is highly emotional, but are there facts behind the feelings? In the last of three articles, The Evening Sun concludes its examination of the issue and the scientific efforts to determine whether the veterans' fears are real or imagined.

By Jon Franklin
and Alan Doelp

In the mid-1960s Operation Ranch Hand flew daily missions over the Vietnamese jungle, laying down a fog of Agent Orange herbicide. Back at Da Nang air base Maj. Charles Hubbs, the Ranch Hand detachment commander, took the heat.

The mosquitoes were bad, the food was worse but the reporters, he says, were awful.

In the U.S., a coalition of environmentalists and anti-war activists were opposing the spraying operation, claiming it violated the Geneva accords. The reporters came around often, with their lenses and notebooks and unfriendly questions about the poisons.

"Some of 'em were a real pain in the butt. They insisted it was chemical warfare and a few of them got really pushy," recalls former major Hubbs, who now works for the National Transportation Safety Board and lives in Camp Springs.

Major Hubbs told them over and over that Agent Orange wasn't dangerous and that its effects lasted, at worst, six months.

"But some of 'em just wouldn't listen," he said. "When you got one like that, the way to shut 'em up was to walk over to a drum of the stuff, dip your finger in it and take a slurp of it."

Sometimes, when the reporter was extra nasty, Major Hubbs was extra demonstrative. Then he poured some Agent Orange into a cup and downed it.

"That usually fixed 'em," he remembers.

Now the question is whether it
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also fixed Major Hubbs. If Agent Orange was as dangerous as Vietnam veterans now charge that it was, a survey of former Ranch Hand members could prove their point. The men on the flight line ignored the official safety regulations. They were constantly exposed to the chemical in the orange-striped drums; frequently they were drenched with it.

The Ranch Handers are an epidemiologist's dream. Most of the men are in the same age group and they are easy to locate through the Ranch Hand Association, founded by Major Hubbs after his return to the United States. The association counts 968 of the 1,200 former Ranch Handers as members.

One has prostate cancer and blames Agent Orange. The 967 others say they are healthy and express a profound skepticism about the controversy, Mr. Hubbs said. They generally view it as just one more crazy wrinkle in a crazy war that won't go away, he said.

But the opinion that's important is the one yet to be formed by Air Force scientists who will eventually be assigned to study the health of Ranch Hand veterans.

The Ranch Hand study, now in the planning stage, is one of several attempts to survey the health of people who are known to have been exposed to large quantities of Agent Orange or dioxin, the highly poisonous chemical that contaminated the defoliant.

Other studies aim at answering pertinent questions about the overall health of the veterans who fought in Vietnam.

Some of the research projects are relatively limited and should be completed quickly, while others will take years. As the results are analyzed and published, the truth about Agent Orange and dioxin should emerge.

One of the most important studies involves civilian factory workers who were exposed to dioxin as a result of an explosion at a Monsanto plant in Nitro, W.Va., in 1949.

Following that accident 122 workers developed chloracne, a skin disorder that is the only documented effect of dioxin poisoning. Doctors and health scientists are now examining those people and their medical records to determine whether they suffered any unusual ailments during the intervening 30 years.

A variety of studies center on the Monsanto workers at Nitro. The first one, financed by Monsanto, is being conducted by a University of Cincinnati occupational health specialist. A preliminary report published early this year showed that the death rate of the exposed workers was about normal over three decades.

A parallel study of Nitro plant workers was commissioned by the union, which represents the employees. That study should provide more detailed findings and is expected to be released this summer.

In the meantime, scientists with the National Institute of Environmental Health Sciences are trying to determine if male mice, when exposed to dioxin, father deformed offspring.

That project addresses the question of whether Vietnam veterans, or other males exposed to dioxin, need worry about deformed children. Most research on chemically-induced birth defects are carried out on female animals, since they are considered to be two to three times as sensitive to such effects as males.

The study of male mice is expected to be completed by late summer or early autumn.

If deformed offspring are produced, the report will be a boon to the veterans' cause. But if the studies are negative they will be less meaningful because the human reproductive system is quite different from that of mice and, in some ways, is considered more sensitive.

Veterans, environmentalists, chemists and Veterans Administration bureaucrats are also keeping an eye on the steady stream of scientific reports growing out of a 1976 explosion in Seveso, Italy.

That explosion, like the one in Nitro, occurred in a chemical factory. It sprayed dioxin into the air and may have contaminated as many as 250,000 persons.

Since the explosion, Seveso residents have become some of the best-studied citizens in the world. Numerous independent and government-funded scientists are watching the victims carefully for signs of long-term health problems.

So far no such ailments have been found, but the exposure is still so recent that delayed effects of the sort the Vietnam veterans claim to have suffered might not yet have appeared. Positive reports of delayed dioxin reactions from Seveso could immeasurably aid the veterans' cause.

In the meantime, the dioxin question has led to the development of sophisticated analytical techniques for detecting the chemical in quantities as small as one part per trillion.

Such tests are being applied in a series of Environmental Protection Agency studies conducted in areas sprayed with 2,4,5-T, a domestic herbicide that contains dioxin.

The federal scientists are attempting to determine whether dioxin-containing substances should be banned in the United States. Since Vietnam-era Agent Orange contained much more dioxin than domestic 2,4,5-T, the EPA findings could have direct application to the veterans' claims.

In one study, analytical chemists looked for dioxin in the milk of nursing mothers along the Northwest coast of the United States, where 2,4,5-T was used until recently by commercial foresters. No dioxin was found.

Another study, this one pending, involves the analysis of fat biopsy samples from a captive herd of deer and elk in Oregon. Still another involves the analysis of mud samples from forest watershed areas.

Farther south, where 2,4,5-T is used to combat weeds in Louisiana rice fields, scientists will test for dioxin in catfish and crayfish.

Alleged Agent Orange victims who didn't serve in actively defoliated areas of Vietnam have claimed that they were exposed to the chemical by eating local food. If the environmental studies are negative, the veterans' claims will be difficult to support.

By far the most important studies, however, are those being designed to find out whether men who served in Vietnam have health problems that are more frequent, or more serious, than the men who stayed home.

The principal such study was mandated by Congress as a response to lobbying efforts by veterans who say they are victims of Agent Orange.

That investigation, which is still in the design stage, should document any serious health problems peculiar to Vietnam veterans, whether or not those problems are caused by Agent Orange.

Such full-scale epidemiological investigations offer the cleanest and most reliable answers to the Agent Orange problem, but they also take the most time to complete. Scientists say preliminary results from the survey are probably years away.