

Deadly Effects of Viet Defoliation

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An official scientific accounting of the destruction wrought by American military planes spraying herbicides over South Vietnam was released here yesterday.

The report confirmed the alarms recently voiced by many scientists and unofficial Vietnam observers, and it disputed Army claims that thenine-year defoliation campaign has had no effect on human birth defects.

An international lawyer promptly declared that the use of crop-killing chemicals violates at least one international treaty to which the United States subscribes, and a former Central Intelligence Agency official said it is still unclear whether the White House intends to include a ban on crop-spraying in its recent order phasing out the use of herbicides in Vietnam.

REPORT

With detail and dispassion, the scientific report was formally presented to the American Association for the Advancement of Science by a three-man commission appointed by the organization last year.

The commission members said that 5.5 million acres of crops, forests and grazing land covering at least 12 per cent of South Vietnam's territory have been either damaged severely or destroyed by herbicides.

The destruction, the scien-

tists said, will last for years in many cases; for decades in others.

Particular devastation has struck defoliated mangrove forests in the Mekong delta, the report said, and the disappearance of these water-rooted trees is already causing erosion of stream banks and destruction of valuable fisheries.

LOSS

Thousands of trees have died, in hardwood forests, bamboo thickets have invaded the forest areas, and at least \$500 million worth of timber has been destroyed.

Nearly half a million acres of fertile croplands have been sprayed and enough food crops to feed 600,000 people have been wiped out.

Hardest hit by defoliation have been the food-short central highlands, home of a million Vietnamese Montagnard tribesmen who are anti-Communist but fiercely

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independent. The report noted that these people are closely tied to their land by tradition and religious belief, and destroying their crops creates an urgent problem of political and cultural alienation.

COMMISSION

The association's Herbicide Assessment Commission was headed by Dr. Matthew S. Meselson, professor of biology at Harvard University. Its other members were Dr. Arthur H. Westing, professor of biology at Windham College in Putney, Vt., and Dr. John D. Constable, professor of surgery at Massachusetts General Hospital in Boston.

The commission was named last February, held a conference with 23 scientific experts in June, and sent a four-man commission to Vietnam for six weeks last August and September after weeks of bureaucratic maneuvering with the State and Defense departments.

The groups' most controversial problem involved an effort to find out whether herbicides may be causing birth defects in the South Vietnamese civilian population.

BIRTHS

Earlier this month an Army effort contended that its survey of 20 hospitals "failed to show any influence of herbicides" in Vietnam. The Army acknowledged that Vietnamese hospital statistics appeared to show a 35 per cent increase in birth defects since 1965, but said this increase was probably due to more efficient statistical reporting. In fact, said the Army, "a downward trend was observed in all categories of abnormal birth events."

Constable declared yesterday: "I think it is grossly improper to try to draw a conclusion either way from this material."

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This photo displayed by the commission showed a forest 60 miles from Saigon before it was sprayed in 1965

The scientific commission members said they examined the Army's report on human health effects and found it seriously wanting. It included figures from Saigon hospitals, for example, where most of the patients were never subject to spraying at all.

INCREASE

When the commission members subtracted the Saigon numbers and confined birth defects statistics to provincial hospitals, they discovered a "decided uptrend" in

still births, bith deformities and a condition called hydatidiform mole, which is a rare tumor of the placental cord in pregnancy.

The two most common birth defects in rural hospitals in sprayed areas, the commission reported, were cleft palates and a deformity called spina bifida, which occurs when bone forms incompletely around the tissue of the spinal chord.

The commission noted, however, that even this is not strong enough evidence to prove that these feffects are associated with herbicide spraying. The scientists said it is urgent to conduct precise studies among sprayed populations to answer the question.

COMPOUND

The birth defect problem first was observed last fall in experimental rats and mice exposed to 2,4,5-T, one of the widely used defoliant s in Vietnam. The compound is now illegal in the United States. In Vietnam it has commonly been combined with another herbicide called 2-4-D, and the combination is known as Agent Orange. One of its more subtle chain-effects is to produce a poisonous impurity called dioxin, and no one knows about dioxin's health effects in humans.

The Army banned the use of Agent Orange in Vietnam last April, but last August 21, Meselson reported, he and his team of scientists flew over a densely populated highland valley in Quang Ngai providence which had been sprayed with Agent Orange by three C-123 planes of the U.S. Seventh Air Force on August 9.

Neselson took color photo-



AP Wirephotos

This is the same area shown in the top photo as it appeared in 1970, five years after defoliation

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graphs of the valley, which held more than 940 Montagnard houses that showed in the pictures. Yet, he said, an Army chemical corps colonel who was flying with him told him that military intelligence reports had indicated the valley held no houses when it was sprayed.

PROBLEM

This, Meselson said, indicated the acutely difficult problem of protecting civilians against the effects of crop spraying or forest defoliation.

Professor George Bunn of the University of Wisconsin Law school, who is former general counsel to the U.S. Arms Control and Disarmament Agency, told the scientific meeting here that using herbicides to kill crops intended for civilian populations violates instructions in the Army's own field man-

uals. The manuals, he said, limit crop destruction efforts to food intended solely for enemy military use . . . an obviously impossible distinction to make.

Bunn also said that crop spraying is an express violation of the 1907 Hague treaty, which the United States signed, and which forbids the employment of "poison or poisoned weapons" in war.

AGREEMENT

He said the use of poison also violates a 1949 Geneva agreement, to which the U.S. is a party, forbidding destruction of food supplies in occupied areas. The U.S. contends it is not an "oc-

cupying power" in Vietnam.

Dr. Herbert Scoville, a former CIA official now with the Carnegie Endowment for Internal Peace, said it is not clear whether last Saturday's White House order for an "orderly yet rapid phaseout" of herbicide spraying includes an end to crop destruction.

Meselson said the U.S. military command in Vietnam still holds to a program for destroying crops in the central highland provinces of Quang Ngai and Quang Tin. The program, he said, calls for destroying 15,000 metric tons of food, enough to feed up to 70,000 people for a year.

REQUEST

Meselson and his scientific colleagues made clear during a press conference that while they were in Vietnam, and since they have returned, they repeatedly and urgently asked for an immediate halt to at least the crop-destruction.

In its Vietnam damage assessment, the scientific commission reported that 35 per cent of Vietnam's tropical forest lands have been sprayed at least once, and 10 per cent repeatedly.

Aerial surveys over a wide arc of Saigon, from the Cambodian border to the South China Sea, showed more than half the forest to be severely damaged, the commission said.

In areas where bamboo has invaded the forest it may take many decades to re-establish the hardwood trees, the scientists said.

There is also a danger that in these denuded areas monsoon rains will leach organic

material out of the soil and flood nearby waterways with so much nutrient that explosive growths of algae will destroy fish crops.

Mangrove forests, the commission said, are especially sensitive to defoliants, and the areal spraying has killed all vegetation in these areas. This in turn has destroyed most of the animal and bird species that are ecologically dependent on mangroves, and has threatened the hatching and nursing waters of many fish and shellfish species.