

Professor Westing Counts the Craters

BY SAUL BRAUN

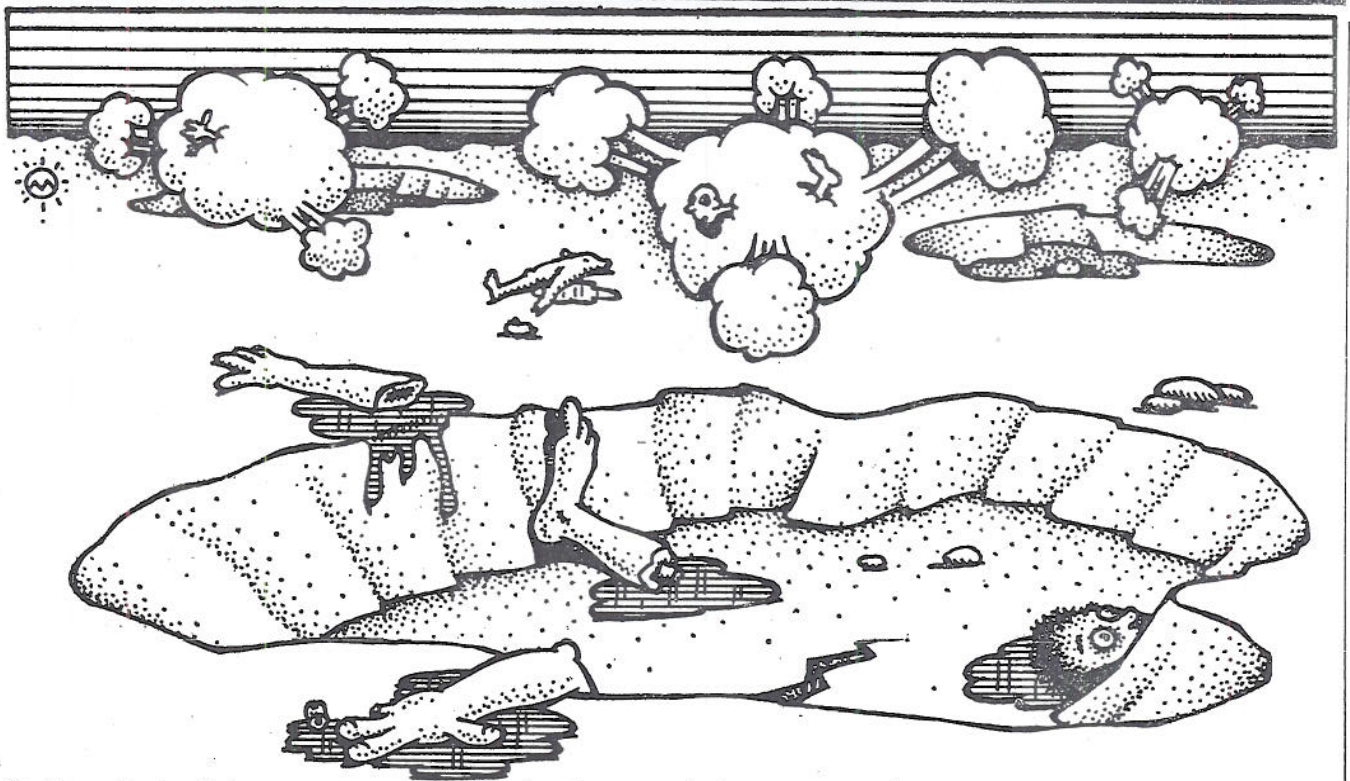
PUTNEY, Vt.—Prof. Arthur H. Westing is one of a small group of scientists whose fact-finding trips to Indochina alerted the world, including the Pentagon, to the devastating effect of the widespread use of herbicides in the Vietnam War. More recently Professor Westing and his colleagues have been documenting the effect of American bombing raids on the ecology of Vietnam.

Late last month I spoke to Westing in his ground-floor office in the Science Building at Windham College here in Putney, where he is full professor and head of the biology department. Forty-four years old, Westing is married and the father of two children. He speaks formally, dresses casually: buttoned-down shirt, chino trousers, sturdy, brown walking shoes.

"When the chemical warfare program with herbicides came to light in the mid-Sixties," Westing said, "the government was giving out almost no information. Journalists in Vietnam were the principal informants. Then, in the spring of '69, Prof. E. W. Pfeiffer, who is a wildlife zoologist at the University of Montana, went over to ascertain three things: the types of target, how widespread the use of chemicals was, and the extent of the destruction. In his attempts to obtain adequate information, he was partially frustrated by the Department of Defense and also, of course, by the war situation itself. Then when Cambodia, which was still neutral, was sprayed—clandestinely—Pfeiffer called me up, said he was going over, and asked me if I would like to come along. Our two areas of competence complemented each other perfectly. So in December 1969 we set off for Cambodia. Then, in August 1970, I went to South Vietnam with Prof. Matthew S. Meselson, a professor of biophysics at Harvard. The following August I returned to South Vietnam, teamed up with Pfeiffer again.

"Everywhere I flew," Westing recalled, "I could see bomb craters. I went over there to study chemicals and came back having nightmares about bomb craters. And the outcome of my third trip was that I realized that the principal strategy the United States was pursuing in Indochina was really an antienvi-

Saul Braun is a freelance writer living in Stockbridge, Massachusetts.



Westing estimates that throughout Indochina there are more than twenty-six million craters.

mental one: chemical defoliants, extensive bulldozing, and from January 1, 1965, through December 31, 1971, a total of thirteen million tons of munitions—the equivalent in explosive energy to one Hiroshima bomb every five-and-a-half days, or, in sheer tonnage, to more than twice as much as was dropped in all theaters of war in World War II.

"A handful of us—among others, Pfeiffer, myself, Meselson, Arthur W. Galston, professor of plant physiology at Yale, and J. B. Neilands, professor of biochemistry at the University of California at Berkeley—got the Department of Defense to stop the spraying. They did so—largely as a result of adverse publicity—in May 1971. I felt very proud of myself for a while, that I was able to affect change. Yet large areas are still being bulldozed or systematically bombed. The crops, the forests, the soil are still being destroyed.

"One thing people in this country, and even officials in this country, don't generally appreciate is the fact that, in terms of real estate, the picture in Indochina has changed very little in the past decade. The Vietcong has controlled about eighty to eighty-five per cent of South Vietnam—not the cities, not the productive, coastal, rice-growing regions, but almost all the rest. The only way the United States could somehow counter this enormous advantage that the other

side enjoyed was to make huge areas held by them uninhabitable and unproductive. That's why I've come to think of the Vietnam War as a war on the environment."

I asked Professor Westing if he considered himself a radical scientist. No, he said, he did not, nor did he think his scientific colleagues regarded him or the other Indochina fact finders in that light.

Before coming to Windham, Westing, who holds degrees from Columbia and Yale, was a research forester for the U.S. Forest Service (his research was on the effects of herbicides on trees), taught forestry at Purdue, tree physiology at the University of Massachusetts, and biology at Middlebury College. He is a fellow of the American Association for the Advancement of Science (AAAS), which sponsored his first trip to South Vietnam, and of the Scientists' Institute for Public Information (SIPI), which sponsored his second trip to that country.

On his initial investigative tour of Southeast Asia, Westing found that herbicides had been given war names that sounded reassuringly like domestic cleansers. Pink Pad and Big Blue were used to scour and clean up at home; Agent Orange and Agent Blue were used to get rid of forest cover and crops abroad.

"According to figures that the Defense Department supplied us, from 1962 through 1970 we had sprayed Agent Blue—a highly persistent solution of sodium dimethyl arsenate, applied aurally—onto 720,000 acres, or nine per cent of South Vietnam's 7.6 million acres of

agricultural land. A large-scale forest-destruction program, using Agents Orange and White, accounted for another twelve per cent of South Vietnamese territory. There were two goals: denial of cover and denial of food. In theory it was the forces of the National Liberation Front that were to be denied both food and cover. Yet a study made by the Rand Corporation for the Defense Department estimated that to destroy the food supply for one NLF soldier one hundred civilian diets would have to be destroyed. This meant, of course, that the civilian population bore the brunt of our attack. The Department of Defense felt that the RAND study had exaggerated the situation and made a second study, which brought the figure down to ninety civilian diets destroyed for each one NLF diet."

Westing and Pfeiffer returned with their data and began publishing their findings in scientific journals. Out of professional courtesy, the men first sent off copies of their manuscripts to the Department of Defense's Office of Science and Technology and to the Chemical Warfare Center at Fort Detrick in Maryland. "I made one error in one publication," Westing said, "and an officer in the Pentagon's Public Information Office caught me on it. I'm glad it happened, because they haven't corrected anything else, which must mean I haven't made any other errors."

I asked Westing whether the Pentagon or Saigon had put any obstacles in the way of his various investigations.

"The second time I went out—with

Meselson in 1970—there was one major snag. In Saigon we were shown a telegram from CINCPAC [Commander in Chief, Pacific] to MACV [Military Assistance Command, Vietnam] instructing them not to give us any cooperation. We maneuvered our way around that one, though. We dropped in on Ambassador [Ellsworth] Bunker, who comes from Putney, and, after chatting about things back home for a while, we mentioned the telegram. Bunker was appalled. He said that until this thing got straightened out he would let us use his personal helicopter to go anywhere within the range of Saigon. So we lucked out there. It took Ambassador Bunker about six days to smooth our way for the rest of the visit.

"Then, when it came time for my third trip and I applied for a visa for travel to South Vietnam, the Saigon embassy in Washington wouldn't say yes, and it wouldn't say no. So I called up Senator [George] Aiken and told him I was worried, and he said he would contact people, and a few days later my visa arrived special delivery, registered mail. Obviously somebody had put the heat on Saigon.

"One thing that helped Pfeiffer and me on our trips together was that we are both ex-marines, both with combat experience—he in the Second World War and I in Korea—so we felt at ease with the officers. In the field the middle-echelon officers told us everything, showed us everything, took us everywhere.

"Take the matter of the Daisy Cutter—the troops' name for the 15,000-pound bomb that has to be carried by a specially equipped C-130. The bomb's ostensible use is to clear instant landing fields, but it's been used as an antipersonnel weapon as well. Before a search and destroy mission in the U Minh Forest, on the west coast of the Ca Mau Peninsula, they dropped five of those. The area was officially off limits. So what happened? We're way up north in Danang, and a chemical officer was assigned to show us some chemical warfare damage. On the way we began talking and said we wanted to take a look at one of those big-bomb areas. Maybe he knew where one was? Sure thing, he said, and flew us over for a look at one near Danang. The Daisy Cutter leaves no crater. It explodes just above the ground and levels everything in an area about the size of a football field. The blast wave does a lot of damage beyond that.

"Later we spent a day with the 984th Landclearing Company, which was leveling the Boi Loi Woods in the southeastern corner of Tay Ninh Province. The basic weapon is a heavily armored twenty-ton tractor fitted with a two-and-a-half-ton plow blade. In the previous month or so

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they had already scraped clean 6,037 acres. Before that they had obliterated the 9,000-acre HoBo Woods in nearby west-central Binh Duong Province. According to official military sources, about 750,000 acres of land in South Vietnam had been shaved bare by last summer. That's an area about the size of Rhode Island. By now approximately one million acres have been scraped.

"Then there is the bombing and the shelling. My conservative estimate of the number of craters throughout Indochina is more than twenty-six million. The average crater is about thirty feet in diameter and about five to twenty feet deep. We estimated a total crater area of about 400,000 acres. Most of the craters in the Mekong River Delta are permanently filled with water, and thus the land is no longer fit for rice growing. The bombs and shells have torn up countless trees, and the shrapnel has been propelled over some thirty million acres, hitting additional trees and inviting fungal infection and wood rot. The craters have also disrupted irrigation systems and exposed lateritic soil—an iron-and-aluminum-rich type of soil found only in the tropics. Once exposed to the atmosphere, it hardens irreversibly. Millions of new breeding ponds have been created for disease-carrying mosquitoes. And there are now about 2.5 million dud bombs around; farmers are always bumping into them and getting parts of their bodies blown off.

"The indigenous population has been forced to flee to the cities, and the displaced people that I talked to in refugee camps told me over and over again that their one aim was to get back to their ancestral lands so they could die there. The cultural and religious aspects of life of the Indochinese peasant are very intimately tied in with the land. The people worship the land where their ancestors are buried. This has enormous survival value, because people who depend on the land have to revere the land. And that, of course, we have separated them from. This is a terribly severe blow to them—psychologically, it is totally devastating.

"You may well ask why there has been so little outcry about this. It is extraordinarily difficult to get action. I have

just returned from the U.N.'s first Conference on Man's Impact on the Human Environment in Stockholm, which I attended as a representative of SIPI. I spoke before various forums, and each time I gave the same song and dance, telling people that one of the most crucial assaults on the environment was military and that this should be on the agenda. I got nowhere. The U.S. argument was that the Stockholm conference was not the right forum, that we should consider only such matters as pollution, ocean dumping, meteorological monitoring, and so on. So no action was taken on this matter—despite the fact that our manner of conducting the war in Vietnam constitutes what is perhaps the most devastating assault on the environment of all."

I asked Westing if he could describe the long-lasting effect of the war on the ecology of Indochina. He replied that at this point nobody could—"the damage is continuing on a massive scale, and there are simply too many unknowns." He did think, however, that Sen. Gaylord Nelson had expressed the situation well in a speech he made on the Senate floor last January.

While Westing looked through his files, I gazed out at the pastoral view—the campus grounds and, beyond, the gently rolling, heavily forested hills of the Connecticut River Valley. Then Westing handed me a copy of Senator Nelson's speech, and I read:

There is nothing in the history of war [are to compare with [what the United States has done in Indochina]. A "scorched earth" policy has been a tactic of warfare throughout history, but never before has a land been so massively altered and mutilated that vast areas can never be used again or even inhabited by man or animal. . . . The cold, hard, and cruel irony of it all is that South Vietnam would have been better off losing to Hanoi than winning with us. □

Getting Into Michael's

BY PETER M. NICHOLS

NEW YORK, N.Y.—One night a burglar will try to break into Michael's townhouse. Imagine the scene. Michael and his family are away, and the house, five stories of Georgian magnificence on Manhattan's Upper East Side, is dark. Warily the burglar climbs down a fire ladder on the side of the adjoining building, eyeing the trap door that leads to Michael's studio-gymnasium on the