

food supply and death for those animals that are most important to the survival of the forest plants.

A second important characteristic of humid tropical forests is that most of the plant nutrients, including nitrates, phosphates, calcium, potassium, magnesium, sulphur and other elements required in smaller amounts, are tied up in the vegetation. Nutrients not contained in the vegetation itself are continuously washed from the soil by heavy rainfall. Under normal conditions, the nutrients released by decaying vegetation are rapidly recaptured and transferred to the roots of the living plants by certain fungi. But large-scale defoliation disrupts this efficient process, and the vital nutrients are quickly lost into streams. Fishing in these streams may temporarily improve because of increased aquatic plant growth due to the higher nutrient levels, but this effect is short term and is gained at the expense of soil fertility. As a direct result of lower fertility and the lack of seeds of the natural colonizing plants, pest species, such as giant bamboo, take over and spread. Once established, bamboo forms an impenetrable thicket which prevents normal forest regeneration and makes future use of the land for agriculture nearly impossible. This bamboo is very resistant to defoliants, and because it reproduces vegetatively from tough underground stems, it cannot be eliminated by burning or cutting once it is established.

From 30 to 50 percent of Vietnamese soils^{3,22} are of a type which have the potential to turn into a brick-like substance known as laterite if they are deprived of the organic covering which protects them from exposure to severe weathering. The potential for lateritization is greatest in areas which were already disturbed before herbicide application. Cropland, as well as bombed and bulldozed areas along roadways, fall into this category. The permanence of laterite is well illustrated by the Khmer ruins around Angkor Wat in Cambodia where many of the temples were constructed primarily of this rock nearly ten centuries ago. Obviously, lateritized land is useless for agriculture.

Along lowland rivers and waterways in the tropics, rich forests grade into pure stands of mangrove trees. These plants extend stilt-roots into shallow, brackish water; the silt they trap plays an important role in delta formation. They also provide a special habitat for key stages in the life cycles of economically important fish and shellfish. The intensive defoliation program along waterways in Vietnam has killed mile upon mile of this living border. There will undoubtedly be a

drastic and long-lasting effect upon river fishing and upon the natural process of delta formation along Vietnamese rivers.

The destruction of crop and forest land fertility by herbicides, the alteration of forest composition, and the formation of laterite soil will all result in long-term damage to the agriculture and ecology of Vietnam.

Conclusions

This war has two time scales. There is the immediacy of bombs and battles and of instant destruction and death, and there is the prolonged suffering and hardship which will face all survivors for generations. When the fighting has finally ended, the suffering and hardship will have only begun, for our actions in Vietnam have severely upset the environment and greatly reduced the ability of the land to support its people. The defoliation of vast areas of forest and agricultural land by poisonous and teratogenic herbicides, the saturation bombing and extensive burning, the deliberate destruction of crops with resulting starvation, malnutrition, and disease—these we have introduced to Southeast Asia and to the list of available techniques for waging war.

American troops were sent to Southeast Asia, we are told, to protect the interests of the Vietnamese people. The destruction of the Vietnamese and their environment is unfortunate, we are told, but necessary to protect the lives of American troops in wartime. Thus entwined by circular reasoning, our government claims to aid a country and its people by destroying both, and claims to protect freedom while concealing from the American public the facts about our military actions in Southeast Asia. These facts are no secret to the Asians, who experience the truth daily.

All of the military actions described in this report are continuing, and there is no reason to believe they will cease during the time that any gradual withdrawal or "Vietnamization" is attempted. Nor, under the present policy, is there any reason to doubt that during and after withdrawal we will continue to supply the Saigon regime with the tools necessary to pursue the war according to the precedents we have established. The devastation we have already caused is a monstrous legacy for those we call our friends. The environment, the social organization, the very future of Vietnam have been so severely mortgaged by action supposedly on her behalf that an American policy of immediate and permanent cessation of warfare is clearly the most effective aid we can now give.