

ticularly since the Chinese have said they will come.

In any event, U.N. sources believe that the conference will go ahead, with or without East European representation. The argument that it would be politically impossible for Sweden to hold the conference without its Eastern neighbors is "overdone," according to these sources. "The Swedish government has agreed that the conference will go on, come hell or high water," one U.N. man put it.

Even if the meeting does go ahead, nobody expects Stockholm to be all sweetness and light. Already, some environmentalists feel, the conference has been severely compromised by its refusal to consider the population explosion. This was part of the price paid for persuading underdeveloped countries to come to a conference they have no heart for. Hardly a single underdeveloped country takes pollution seriously: at the recent Group of 77 Meeting in Lima, the subject was mentioned only once—by Brazilian Foreign Minister Mario Gibson Barboza.

His view may be taken as fairly typical. Conceding that underdevelopment does produce its own environmental problems—Mexico City is said to be the seventh most polluted city in the world—Gibson argued that the pollution of underdevelopment is a localized phenomenon resulting simply from a lack of resources, while "the other type of pollution, infinitely more prejudicial in its global effects, is a by-product of the intensity of industrial activity in the highly developed countries."

Whatever the truth of Gibson's argument, it is widely believed, even though there were countries at the Lima conference that went even further, denying the existence of any pollution at all in the underdeveloped world. It is safe to assume that at Stockholm the underdeveloped countries will oppose any ban on the use of DDT or the imposition of any global code of environmental practice, unless it is so loosely phrased as to be worthless. At an earlier pollution meeting at Jyväskylä in Finland, delegates from developing countries warned that they would view the banning of DDT as genocide. And global environmental standards, they said, were merely a means of perpetuating underdevelopment by inhibiting industrialization and economic growth in the Third World.

Conflicts of this sort are fairly pre-

Vietnam Land Devastation Detailed

Two scientists recently returned from Vietnam treated members of Congress last month to a dismal account of the ravages the United States has perpetrated on the Vietnamese environment through bulldozing and bombing—damage which, they say, far exceeds what was done by the herbicide spraying program which was halted last May. Senator Gaylord Nelson (D-Wis.) promptly introduced a bill calling for the National Academy of Sciences (NAS) to undertake a comprehensive study of the ecological havoc the United States has wrought in South Vietnam, Laos, and Cambodia, and to recommend ways this country can rectify some of the damage.

The scientists, Arthur H. Westing of Windham College in Vermont and E. W. Pfeiffer of the University of Montana, say the bulldozing and aerial bombing used for tree-clearing and annihilation of enemy sanctuaries has caused more damage than any U.S. military action. Yet, says Westing, this activity "has somehow escaped the attention of the scientific community," presumably because it can be confined under the heading of "conventional warfare" and does not carry the cachet of danger attached to chemical carryings-on.

The bulldozing exercise, carried out by private American companies with huge "Rome Plows," was stepped up with a vengeance after the herbicides were phased out. Bulldozers strip the land down to the naked soil at the rate of 1000 acres a day, utterly destroying the wildlife habitat and leaving the land open to erosion and leaching of its mineral nutrients. These plows have already destroyed over 800,000 acres [the entire herbicide program cleaned out 5.5 million acres (*Science*, 8 January 1971)].

Even this destruction is modest compared with the bombing, says Westing. "Carpet" bombing by B-52's has left some 23 million moonlike craters averaging 25 feet in depth and 40 feet in diameter. Ten percent of South Vietnam's rice lands have been destroyed by this procedure.

"The basic Pfeiffer-Westing pitch," says Westing, "is that far more important than the ecological impact of the herbicides is the total impact of the war." The proposed NAS study would thus cover areas not touched on by the NAS Herbicide Assessment Commission, which recently submitted its preliminary report to the Department of Defense.

Nelson introduced his bill with a passionate speech in which he said: "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. . . . I am unable adequately to describe the horror of what we have done there. There is nothing in the history of warfare to compare with it. 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 proposed legislation—a companion House bill was introduced by Representative Gilbert Gude (R-Md.)—instructs the NAS to do a preliminary 6-month study under a maximum authorization of \$10 million. The onus of DOD sponsorship is removed by the stipulation that the money be directly appropriated to the President. (The DOD-funded NAS herbicide study has been hampered by the fact that anthropologists, fearing that any association with DOD would compromise them in the eyes of the people they're studying, have refused to take part in it.)

The bill is now in the Senate Foreign Relations Committee. A member of Nelson's staff says the bill is likely to get considerable attention as one of a number of upcoming actions dealing with environmental warfare. Among these are the following: an Executive understanding which would include herbicides under the noxious substances banned by the Geneva Protocols, a review of the NAS herbicide study, and ratification of a proposed international convention on biological warfare.

—CONSTANCE HOLDEN