

## New AAAS Committee To Study Chemical Defoliants

The new AAAS Committee on Environmental Alteration, established at AAAS's New York meeting last month by the association's board of directors, will consider as its first order of business the ecological impact of chemical agents used in Vietnam and elsewhere. Appointment of the committee, whose broader mission is discussed in an editorial in this issue of *Science* by Dael Wolfe, stems in part from concern voiced by various scientific groups about the short- and long-term effects of defoliants and other chemicals employed by U.S. forces in Vietnam.

A first step for the new group will be to evaluate two reports on the effects of defoliants and herbicides. One is a contract study prepared by the Midwest Research Institute of Kansas City for the U.S. Department of Defense. The other is a review of the M.R.I. study now being made by an *ad hoc* committee of the National Academy of Sciences-National Research Council chaired by Geoffrey Norman, vice president for research at the University of Michigan and chairman of the National Research Council's biology and agriculture division. The Committee on Environmental Alteration will begin its evaluation following completion of the NAS-NRC review later this month.

The M.R.I. report will consist principally of a compilation of available data and an assessment of information gaps. Therefore, while it may provide a basis for further planning, the report will by no means dispose of the question of the ecological effects of herbicides and defoliants. Indeed, if this study and the review by the NAS-NRC and AAAS groups accomplish nothing else, they may underscore the fact that some scientists feel much less is known about these effects than past statements by Pentagon officials would indicate.

In a letter to Don K. Price, AAAS president, last September, John S. Foster, Jr., director of defense research and engineering, said, "Qualified scientists, both inside and outside our government, and in the governments of other nations, have judged that seriously adverse consequences will not occur. Unless we had confidence in these judgments, we would not continue to employ these materials." In a speech and interview reported in the *New York Times* of 4 January, Charles E. Minarik, director of the plant science laboratory at Fort Detrick, a center of biological warfare research, also minimized the ecological impact of the herbicides and defoliants used in Vietnam.

However, in the August-September issue of *Scientist and Citizen*, Arthur W. Galston, a Yale biologist and president of the Botanical Society of America, concluded that "we are too ignorant of the interplay of forces in ecological problems to know how far-reaching and how lasting will be the changes in ecology brought about by the widespread spraying of herbicides in Vietnam. These changes may include immediate harm to people in the sprayed areas and may extend to serious and lasting damage to soil and agriculture, rendering more difficult

South Vietnam's recovery from war, regardless of who is the 'victor'."

Just what role the Committee on Environmental Alteration will play in this matter is undetermined, but it is in the nature of such groups to confine themselves to recommending further studies or action by others. E. W. Pfeiffer, University of Montana zoologist and the prime mover behind a AAAS Council resolution of 30 December 1966 expressing concern about the ecological effects of chemical and biological agents, believes a group of committee investigators should go to Vietnam. They should, he says, look not only into the effect of herbicides on the environment but also into the effect on human health of the tear gas and other gases used by U.S. forces. Pfeiffer says a Toronto physician has written him that, during his 3 years of practice at a tuberculosis hospital at Quang Ngai, he treated a number of civilian patients who were acutely ill from exposure to gases. Some deaths occurred, especially among the children, the doctor said.

Barry Commoner, one of the four persons already named to the AAAS committee, has been a leader of the scientists' information movement, in which Pfeiffer also is active. Two of the others—René Dubos and Athelstan Spilhaus—are members of the science advisory board of *Scientist and Citizen*, official publication of the Scientists' Institute for Public Information. Dubos was chairman, and Spilhaus and Pfeiffer were members, of the *ad hoc* group established by the AAAS pursuant to the 30 December 1966 Council resolution. This group recommended that the AAAS establish a commission on environmental alteration which, among its other vaguely described functions, might set up "committees of specialists to anticipate large-scale interventions [in natural systems] or to detect them at an early stage, and might also consider the establishment of agencies for early recognition of unexpected effects."

The *ad hoc* group also proposed that the AAAS ask the National Academy of Sciences to "arrange a continuing study and scientific record of the effects of chemical and biological warfare agents on soil, biota, and human health." Pfeiffer, however, in a separate statement noted that NAS-NRC had advised the Pentagon on chemical and biological warfare problems and had sponsored a program of postdoctoral research associateships at Fort Detrick. He questioned whether the Academy could make an independent and objective study. Pfeiffer feels that, while the new committee is chaired by David R. Goddard (provost of the University of Pennsylvania) rather than by Dubos, it is essentially a continuation of the *ad hoc* committee under a new name. His confidence in it will be greater, he said, if among the members to be added are people such as Galston and two Harvard contributors to *Scientist and Citizen's* issue on chemical and biological warfare—John T. Edsall, a biological chemist, and Jean Mayer, a nutritionist and specialist on the history of public health.—LUTHER J. CARTER