Letters

Vietnam: Truths of Defoliation

Neither a team of experts nor 1500 references are required to assess the effects of 2,4-D, 2,4,5-T, picloram, and cacodylic acid on the vegetation of Vietnam ("Defense issues summary of defoliation study," 9 Feb., p. 613). One needs only to read the cautionary labels our government requires for these products when they are sold in the United States or note the dead vegetation and the relative absence of birds and insect life along railroads or powerline rights-of-way after these areas are freshly sprayed with such chemicals.

The Department of Defense may label 2,4-D and 2,4,5-T with the honey-coated word "defoliant," but foresters call them tree killers; farmers call them weed killers; and manufacturers call them herbicides and silvicides. Doses over 3 pounds per acre (3.36 kilos per hectare) of the standard mixture of 2,4-D and 2,4,5-T are nonselective—they kill all the foliage and twigs they contact, and when applied as oil basal sprays they kill the vegetation from the ground up. Many species of plants other than tomatoes, cotton, and tobacco are killed by the vapors of these chemicals. American foresters, farmers, highway and power companies who are careless with these compounds have often been forced to pay for crops they did not mean to kill.

The DOD can raise the red herring of "long-term" effects, but there can be no doubt about the short-term effects: 2,4-D and 2,4,5-T kill the green vegetation. When followed by fire bombs, the dead foliage and twigs burn, as they did on some 100,000 acres (about 40,000 hectares) in the "Iron Triangle" last spring.

Through the simple process of starvation, a land without green foliage will quickly become a land without insects, without birds, without animal life of any form. News photographs and on-the-spot descriptions indicate that some areas have been sprayed repeatedly to assure a complete kill of the vegetation. There can be no doubt that the DOD is, in the short run, going beyond mere genocide to biocide. It commandeered the entire U.S. production of 2,4,5-T for 1967 and 1968 [some 13 to 14 million pounds (6.36 million kilos) according to U.S. Tariff Commission reports]. If one combines this with the other chemicals the DOD concedes it is using, there is a sufficient amount to kill 97 percent of the aboveground vegetation on over 10 million acres of land (about 4 million hectares)—an area so big that it would require over 60 years for a man to walk on each acre.

The long-term effects of spraying such an area may be imponderable, but the short-term effects of using these chemicals are certain: a lot of leaves, trees, rice plants, and other vegetation are dead or dying; and a lot of insects, birds, animals, and a few humans have either migrated or died of starvation. The North Vietnamese are fortunate—they have only bombs to contend with.

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Academic Medicine: Providing a Full Spectrum of Care

Page has taken a nostalgic rearview-mirror look at medical schools and their social responsibilities in his editorial (19 Jan., p. 261). He deplores what he perceives as the contamination of university medical centers by their growing concerns for community health, and shudders at the cracks which he detects in the wall around the research-oriented ivory towers of medicine.

There must be a broader and more rational view of the opportunity now offered to American schools of medicine. The essence of the challenge to the academic medical community is the present imbalance between its technical excellence on the one hand and its growing irrelevance, on the other hand, to the needs of the society which supports it. A scientific concept of health and medical care must be truly ecological, recognizing the interplay of biological, psychological, and environmental forces. Laboratory, bedside, *and* community form the essential triad for the function of the medical school. The "good pedagogy and research," so correctly emphasized by Page, require more than "freedom, independence and emotional quiet" if physicians are to be prepared to deal with the causes and the consequences of disease and if experimentation is to illuminate the pathways to better methods for the delivery of health services.

In this era of tumultuous change in both science and society, medical schools require, for the attainment of their primary objectives, a full spectrum of medical care to serve as both classroom and laboratory. The resources offered by the new regional medical programs and community health centers, for example, should be eagerly welcomed as the opportunity to expand the now constrained concept of "academic medicine."

This is not an argument for large-scale service involvement by the institutions which society holds responsible for preparing expert physicians and for advancing the frontiers of medical knowledge. General health service must remain the responsibility of the larger community, of which—it must be stressed—the university medical center is also a part.

An acceptable model of the external relations extended by a school of medicine should include (i) participation, along with other health-related agencies, in the planning and evaluation of adequate health services for community, region and nation; (ii) provision of those specialty "backup" services which only the university teaching center can supply; (iii) assumption of responsibility for comprehensive care of a limited and cross-sectional population, in order to teach the full spectrum of community health service to students under properly controlled conditions of pedagogical excellence; and (iv) innovation and demonstration in new methods of delivery of good medical care, in conformance with the established traditions of experimental research.

Medicine and society cannot be separated, except with peril to both.

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