Letters

Herbicides in Vietnam

The article by Deborah Shapley (News and Comment, 22 Mar., p. 1177) on the report by the National Academy of Sciences' (NAS) Committee on the Effects of Herbicides in Vietnam was misleading and distorted. Let me try to set the record straight.

First, it should be made clear that the NAS report was written by a genuinely blue-ribbon committee—a stronger one could hardly have been assembled anywhere. Chaired by an outstanding plant physiologist and academy member, it included the professor of forestry at Oxford—a man with personal experience in the tropics, the top pesticide expert in the U.S. Department of Agriculture, two of our most respected ecologists, the dean of one of the finest forestry schools in the nation, the former director of the Rice Research Institute in the Philippines, and eight other well-known scientists.

Second, much is made of the internal disagreement within the NAS over the report, but, except for the problem of the volume of forest timber killed, the disageement was primarily between the committee and the NAS report review panel, who were reluctant to accept the committee's findings. It is relevant that the one academy member with personal experience in herbicide work in the tropics was excluded from this review committee, while the one academy member who was already deeply committed to the thesis that the herbicide program had caused serious damage was included.

Third, it should be made clear that the NAS committee completely failed to find evidence to support the claims of the earlier three-man AAAS commission.

1) There was no evidence that birth defects could be attributed to the spraying in the records of any of the Vietnamese hospitals examined. The committee's careful wording is that the distribution (of birth defects) "does not support the suggestion that herbicide spraying may have engendered birth defects"; they also add, in fairness, that further studies on further records might perhaps bring some to light. The cautious statement by NAS President Handler that "on balance the untoward effects of the herbicide program appear to have been smaller than one might have feared" was not mentioned.

2) There was no evidence of the persistence of herbicide residues in the soil of any of the sprayed areas.

3) There was no medical evidence to support claims that any Montagnard children had died from the spraying (pity that *Science* should see fit to repeat this unsubstantiated rumor).

4) The estimate of "merchantable" forest trees killed, although still controversial, seems to have been previously exaggerated by a factor of 10. It is worth noting that the committee's procedure in evaluating the timber loss was vetted by a small committee of experts, which included the president of the University of Texas, a former forest ecologist and forest inventory expert.

5) The claim that undesirable bamboos had invaded the defoliated parts of the forest could not really be substantiated or denied, but the committee found that many clearings in the inland forests already contained bamboos, and that since few of them set many seeds, it was unlikely that they would rapidly invade new areas.

Finally, Shapley repeats the claim that the mangroves in the coastal areas will not regenerate for 100 years. Since mangrove swamps have never before been killed by herbicides over large areas, this claim is without foundation. The committee found that in the Rung Sat delta area, where spraying had been repeated many times, a few trees were indeed alive and some seedlings were coming up, but they noted that "as soon as young trees grow to pole size, they are cut and removed for firewood." This delay in regeneration is hardly a direct effect of the herbicide. Boysie Day of the University of California at Berkeley has just returned from a visit to Vietnam; he informs me that mangrove seedlings up to 9 feet high are already established in some of the sprayed coastal areas.

Is it necessary to remind the reader that the defoliation program was carried out to save American lives? As I have previously asked, how many trees would one need to preserve in order to balance the death of a son or a brother in the war? This is a classical example of a situation in which every effort should have been made to balance cost against benefit.

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Velikovsky Forum

In his account of the untidy debate featured as Velikovsky's Challenge to Science at the AAAS meeting in San Francisco, Robert Gillette (News and Comment, 15 Mar., p. 1059) omitted mention of the irrelevance of the outburst from the floor to which I responded "I'll let that go." Those who heard my presentation as symposium panelist were aware that it deserved no other reply; your readers are entitled to know a bit more, having been given what Gillette told them.

It was not my purpose "to say something good about" Velikovsky's ideas, any more than it was my purpose to say something bad. If there were others blindly committed as pro or con, my purpose was to perform not an act of faith but an act of objective scholarship, and I would still not venture to estimate to what degree my remarks "Mechanics bears witness" were either good or bad for his ideas. I did point out, among other things, that the energy required to turn the earth's magnetic dipole through 180° (interchanging positions of north and south poles) happened to be equal to that of a moderately strong geomagnetic storm. In the discussion period someone who