

Johnstone

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Dear Craig,

Since last writing to you, I have spent several days at the DOD writing a review of a Defense Science Board panel report on chemical warfare. As a result, I am now quite familiar with the size and condition of the U.S. stockpile of chemical artillery ammunition. As I had thought before, on the basis of less definitive information, our stockpile of these munitions is ample for full-scale warfare in Europe. Also, the munitions are not deteriorating and can be fired to full range of existing artillery tubes. There are some tricky things in the way inventories are kept that may have given Dr. Welch a different impression. Even the stockpile in Europe is by no means insignificant. More than this I cannot say in an open letter. After my review has had a little time to circulate, I will send you a sanitized version. Then, if you want the full text, you would probably be able to obtain it.

I have been looking a bit more into the evidence for the use of poison gas in Laos. Previously, I had not been able to associate the symptoms with any single agent. Since then, I have read more about the symptoms caused by various agents, and the 39 interviews done by the Army medical team suggest very strongly to me that the agent used was DM, sometimes called Adamsite. The burning sensation in the nose, violent nausea, sneezing and vomiting, and the occasional itching and formation of small blisters are characteristic for DM. It was once classified by the U.S. Army as a riot control agent, along with CS and CN. In the 1966 edition of FM3-10, Employment of Chemical and Biological Agents, DM and its micro-pulverized form DM1 is described as a riot control agent for use in military or para-military operations where possible deaths are acceptable. The color of DM is yellow to orange, depending

on the degree of purity. It seems to me that DM could be the one and only agent to which the 39 interviewees were exposed. Reports of effects lasting for several days and of frequent fatalities may not ordinarily be thought of as characteristic of DM; However, in high concentrations, it certainly can, and has been, fatal. Moreover,--and this may be very important-- DM hydrolyzes in water to give diphenylarsenious oxide, which is exceedingly poisonous. Eating or drinking this compound causes nausea, ~~bloody~~diarrhea, dizziness and general weakness. Under imaginable field conditions, it may well cause death and could account for symptoms lasting several days. Thus, the color of the agent cloud, the symptoms themselves, their duration, and a substantial number of deaths all seem to me explainable as the result of exposure to high doses of DM and its hydrolysis product. A concise description of symptoms caused by DM and other agents can be found in the August 1973 edition of the NATO Handbook On the Medical Aspects of NBC Defensive Operations.

In particular, I see no good reason to assume the presence of any other agent. As you know, we had a little DM in Vietnam in the form of DM-CN grenades provided to the ARVN. It may also be that the French used DM; however, neither we nor the French, so far as I know, produced DM rockets* I realize there is some additional intelligence that is classified, but from what I know of it, it is not necessarily inconsistent with DM. Aside from a few telephone conversations, I have not passed on my comments regarding DM to anyone in the U.S. government concerned with these matters. Who do you think I should be talking to?

I'll be in Cologne at a scientific meeting March 4-7 and then in Geneva, April 2-4. Is there any chance you will be in the neighborhood of either of these cities when I am? As I mentioned in my last letter, I'll be teaching this next semester and will have to hurry back from both my trips and thus won't be able to get to Paris.

Congratulations on becoming Political-Military Officer at the embassy. It makes me feel blue, I haven't been promoted in years. Actually, it's the USG that should be congratulated.

Warm regards,

* There is SOviet work on new derivatives of DM, one report having been published in a SOviet scientific journal in 1977. (Zhurnal Obshehei Khimii, 47 (6), 1282). I have not yet read it.