

1 Armitage Drive
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16 November 1979

Professor Matthew Meselson
The Biological Laboratories
Harvard University
16 Divinity Avenue
Cambridge, MA 02138

Dear Professor Meselson:

Thank you for offering me the opportunity to comment on your draft article "Chemical Warfare and Chemical Arms Limitation."

Inclosed you will find my personal reaction to numerous points made in the draft. The comments provided are certainly not all inclusive; however, they do represent those which I felt should be made given the time and space available. I hope you will find them at least somewhat helpful.

It must be admitted that my reaction in some instances was visceral. Though I am probably as guilty as most, I am very sensitive to what I perceive to be hyperbole and the use of "catch" or "scare" words. I believe that you have relied on these in some instances and that a reduction of same would increase the overall credibility of the article. Indeed, there are some readers who will turn away at the first sign of such an approach and will fail to give consideration to those many points which warrant it. Unfortunately, many of these people are the same ones who should be giving your points some serious thought.

I remain convinced that we share similar goals with respect to CW. We seem to agree that their use must be either adequately deterred or they must be effectively removed from national stockpiles. We seem to disagree on the various means to these ends and on the military implications of failing to attain them. - I would truly enjoy discussing these subjects at length with you at some time in the future. I'm not sure that either of us would succeed in changing the other's honestly held views, but we would at least have a better understanding of each other's position.

Professor Matthew Meselson

I have taken the liberty of inclosing a copy of a fairly recent paper of mine entitled "The Other Gas Crisis: Chemical Weapons." If you could find time to provide your comments on it, I would be grateful.

Sincerely yours,

A handwritten signature in cursive script that reads "Charles H. Bay". The signature is written in dark ink and is positioned above the typed name.

2 Incl
As stated

CHARLES H. BAY
Colonel, CmIC

COMMENTS ON DRAFT
CHEMICAL WARFARE AND CHEMICAL ARMS LIMITATION

- p 1 line 10 Maintenance of chemical weapons, at least by the United States, is predicated primarily upon the deterrent value inherent in their possible retaliatory use.
- p 2 line 4 "...substantial..." Comment: By what criteria and as compared to what?
- p 2 line 14 "...debate about the military value..." Comment: It might be interesting to note that very little, if any, of what passes for debate on this question is between military officials.
- p 3 lines 4-6 The logical questions which follow from this statement of fact are: Why not? Suppose they had been? It may not be appropriate for your article, but the recent news on possible CW in Laos is especially disturbing to me. (See "Refugees from Laos Tell of Gas Attack," NY Times, 4 Nov 79, p 23.)
- p 3 line 26 "...some evidence..." should be referenced.
- p 3 line 31 "...limited effectiveness..." Comment: Indeed, the antidotes themselves are debilitating.
- p 7 lines 19-21 Even if this assertion is supportable, you have not explained why they have apparently continued their buildup despite a multitude of evidence that the United States has long ceased additional procurements.
- p 7 lines 26-29 This assertion is incredibly misleading. I can only believe that its author has never worn the gear in combat related activities.
- p 8 lines 11-15 Again, an oversimplification in my view. If only it were a matter of training or of sleeping without turning one's head! We still have problems such as eyeglasses, Communications, manual dexterity, and eating/drinking, and these problems are compounded many fold given a one-sided use of CW.
- p 8 lines 21-22 Really?
- p 9 lines 1-5 All the more reason to retain some capability to force them into their apparently inferior protective garments.

- p 10 line 32 "...that now seem possible,..." Comment: An interesting statement, certainly one deserving of a fuller explanation.
- p 11 1st para This paragraph may well be true, but it does not address the tremendous logistical burden entailed, the fact that large amounts of valuable time would be required for decontamination and the impact of one-sided CW on pre-CW force ratios.
- p 11 line 24 "...surging..." Comment: This sort of verbal overkill does not help your case.
- p 12 1st para Some relative order of magnitude would seem appropriate; i. e. , 80,000 Soviet NBC troops versus approximately 2,000 US chemical personnel (1977).
- p 13 lines 29 on The point apparently overlooked is that HE, scatterable mines, etc. , would be used regardless of whether or not chemical weapons were employed. Thus, side by side comparisons are moot.
- p 14 lines 8-11 However, they may well contribute to CW deterrence, thus certainly not a total waste.
- p 14-15 last para Several points. All weapons have "immense" potential for collateral damage--conventional, tactical nuclear and chemical weapons. For US and NATO forces, this is controlled by Rules of Engagement and other limiting factors. May we conclude the Soviets would be so limited? Further, you must admit that perhaps "millions" of civilian casualties could result from the use of tactical nuclear weapons in Europe also. It is interesting to note that we have had numerous railroad accidents in this country involving releases of large quantities of toxic chemicals such as chlorine, yet few casualties have resulted due to the prompt evacuation of civilian personnel. It does not seem unreasonable to assume that a similar response would occur in a wartime scenario. In any event, the downwind hazard cited appears very unrealistic. What are the underlying assumptions?
- p 16 line 1 "...minimally escalatory..." Comment: Why not say what these people really mean--"nonnuclear"?
- p 17 1st para Quite a bunch of nonsense! Does NATO really wish to have no response to a Soviet chemical attack other than tactical nuclear weapons, especially in a situation of parity or worse? Wouldn't a Soviet attack of any type, which they know could only be responded to with tactical nuclear weapons, invite their use of chemical weapons as well if advantages were perceived to be available from such use?

- p 18 line 3 "...billions of dollars..." Comment: Do you have a reference to support this?
- p 18 lines 6-9 Prior to conclusion of an acceptable agreement, the two approaches must be viewed as complementary rather than alternative.
- p 18 last para Again, the value of chemical protection is grossly overstated; in particular, "...greatly improved..." and "...sharply limits..." are exaggerated and thus extremely misleading.
- p 19 lines 5-11 As indicated previously, this assertion is extremely difficult to support. Chemical weapons are unique; conventional weapons whose effects overlap to some degree will probably be in use anyway and it is hard to see how they can have the same net negative impact on individual and unit effectiveness as forcing an enemy to assume a CW protective posture. Relying on nuclear weapons alone does not allow ^{sufficient} flexibility.
- p 20 lines 23-26 I believe the validity of this assertion depends in large measure upon the effectiveness and value one attributes to state of the art chemical protection. Obviously, I disagree with your assessment.
- p 21 1st whole para I believe you owe it to your readers to expound a bit on the precedent setting nature of the verification required for an acceptable agreement. You might indicate your views as to whether an agreement with less would be an acceptable risk.
- Downwind Hazard Illustration Sarin bombs on Phantom aircraft? This illustration could not be checked quantitatively because of a lack of information with respect to source strength. Regardless, it certainly makes the case for an effective deterrent or complete, fully verified disarmament!