

May 10, 1969

Dr. Martin Kaplan
Special Assistant for Science
Office of the Director-General
World Health Organization
1211 Geneva 27
Switzerland

Dear Martin:

Following our telephone conversation, here are some detailed comments on the draft:

Preamble, p.1, par.3, line 4 - The description of the prohibitions of the Geneva Protocol is incomplete. The words ". . . and of all analogous liquids, materials and devices. . ." have been left out. Three lines further down, the description of the United Nations Resolution of 1966 is also incomplete. No mention is made of the fact that the Resolution called for universal accession to the Protocol.

Chapter 1, p.3, par.2, line 5 - It is not true that toxins are classed as chemical agents. Sometimes they are classed as chemical agents but sometimes as biological ones. The reason this seemingly small point may be important is that, classed as chemical weapons, toxins would presumably be exempt from the United Kingdom proposal for a ban on biological weapons, use and production.

Chapter 1, p.3, last par., last sent. - The sentence is correct but gives a highly incomplete impression. I would substitute for it the sentence "When used in this manner they are classed as riot control agents. However, in war, lachrymators may be used in order to enhance the effectiveness of other weapons such as high explosives."

Chapter 1, p.13, par.10, line 2 - Again the description of the use of tear gas is incomplete. A sentence to the following effect should be added: "They were also used extensively in

May 10, 1969

2

World War I and have been used in Vietnam.

Chapter 1, p.14 - According to Table 1, tear gases are effective against animals. I believe that the experience of World War I showed that dogs and horses are not bothered by concentrations of tear gas as much as 100 times that required to exceed the tolerance limit for human beings. World War I tear gases did not include chloroacetophenone and I do not know the response of animals to that agent. Nevertheless, the important point is that animals are relatively insensitive to tear gas, no data on relative toxicity determined in animals is applicable to human beings. This point comes up later in Chapter 2.

Chapter 2, p.9, par.2, line 9 - Adamsite is a vomiting agent and a lung irritant, not a tear gas.

Chapter 2, p.9, par.2, line 4 - The sentence "Some . . . pleasure" is irrelevant since none of the chemicals mentioned there has ever been seriously considered for use in war. One might equally well cite oil of peppermint or sucrose.

Chapter 2, p.9, par.6, line 6 - So far as I know there is no scientific basis for ranking riot agents according to their lethality in man. Experiments on animals are not necessarily relevant. Furthermore, it may be that there are several distinct human populations with respect to sensitivity to these agents. It may well be that some men can withstand high concentrations of a given agent while others are killed at much lower concentrations. Deaths due to CS in Vietnam have been reported as heart attacks. So far as I know it would be entirely premature to conclude that CS is non-lethal to man.

Chapter 2, p.10, par.3, line 11 - ~~Staphylococcus~~ enterotoxin could easily be highly lethal when administered by the respiratory route. There is no scientific basis that I know for describing any biological agent delivered as an aerosol as ~~harmless~~ lethal for man.

Chapter 2, p.13, -pThe discussion on this page should emphasize much more strongly our inability to state that any biological agent is non-lethal for man. The notion of a non-lethal biological aerosol has grown up within the hot-house of defense establishments and has not been subjected to normal scientific discussion

May 10, 1969

3

and scrutiny. This is not an academic point. The United States has not yet declared it to be against our policy to initiate the use of "non-lethal biological weapons". Careful reading shows that our official declarations refer instead to "lethal biological weapons".

Chapter 2, p.34 - Even though it is stated that the lethal index for tear gas is determined from animals, the presentation of definite numbers is highly misleading. We simply don't know the values or the distribution of effects in human beings.

Chapter 2, p.34 - The table at the bottom of the page classifies Adamsite as a tear gas. Adamsite is not a tear gas, it is an intense lung irritant and causes vomiting. I have seen no reference to it causing tears, quite aside from the fact that it has quite different effects.

Chapter 5, p.1 - The descriptions of the Geneva Protocol and the United Nations Resolution of 1966 are incomplete, as noted above in connection with the Preamble.

Chapter 5, p.10, par.4, line 4 - "Riot control agents have been used by many countries to minimize destruction and the risk of death to non-combatants and children". The implication that riot control agents have been used by many countries in this fashion in war is absolutely false. In World War ~~II~~ tear gas was used in large quantities in ordinary lethal military operations. In World War II, Hitler produced 7,800 tons of chloroacetophenone loaded into a wide variety of munitions. In terms of area coverage capability, Germany made approximately as much chloroacetophenone as of the other two chief gasses produced during World War II, namely mustard and the nerve gas Tabun. Would anyone assert that chloroacetophenone was produced by the Hitler government in order to "minimize destruction and the risk of death to non-combatants and children."

I must ask you not to circulate this letter as such. However, anything that you can do to direct attention to the serious mistakes in the draft could be very important. As the draft now reads, it will provide a real impediment toward obtaining unqualified ratification for the Geneva Protocol. This in turn could conceivably have the effect of wrecking the Protocol in future.

With love,

As ever,

MM:ls Encl.

Matthew Meselson