THE PRESIDENT'S SCIENCE ADVISORY COMMITTEE

EXECUTIVE OFFICE BUILDING

WASHINGTON, D.C. 20506

11 March 1970

Dear Matt:

I am writing to request your advice and opinion on some issues raised by changes during the past year in this country's policy on the use of biological agents and toxins in warfare. As you undoubtedly know, by the terms of the President's statements of November 25, 1969 and February 14, 1970, the United States has now renounced all use, development, procurement, and stockpiling of biological and toxin weapons.

I am chairman of a panel of the President's Science Advisory Committee that is concerned with some aspects of implementing this policy decision by the President. The discontinuation of military research and development directed at acquiring an offensive capability in biological and toxin warfare means that certain research and development installations are no longer needed for their original military purposes. Our panel has examined alternative civilian uses for these facilities and has received recommendations from several advisory groups and from individuals from within and outside the government.

The termination of offensive research and development also raises the question of a national need for research to improve and maintain our defensive capability in the event that these weapons should be employed against our armed forces or our civilian population. It is concerning the need for and the nature of such a defensive research program that we seek your advice at this time.

We would be particularly interested in your answers to the following questions, but any additional comments that you might have would be welcome.

1. Does the threat posed by possible deliberate artificial dissemination of biological agents or toxins differ qualitiatively or

quantitatively from that of naturally occurring disease to such an extent that a program of research directed specifically to defense against attack by an aggressor is required above and beyond existing civilian research programs in microbiology, prevention and control of infectious disease, and epidemiology?

2. To what extent should a research program on biological and toxin defense be carried out within government laboratories and to what extent might the research objectives be better accomplished through the use of grants and contracts in non-governmental laboratories in universities, research institutes, and industry?

3. To what extent do you think university scientists would be willing to engage in the defensive-purposes-only program in view of the apparently growing distrust of and opposition to defense-related research on many campuses? Do you believe that this opposition is now or will become so extensive that it would be unwise to design the research program to rely upon universities for any great share of the work?

4. How should a defensive research program include the screening of agents and toxins for their potential as weapons that might be used against us?

5. Do you believe that all elements of a defensive research program could be conducted openly and still serve the purposes of national security? (If you believe that some portion of the work should be classified, please describe the nature of the research that should be done in secret.)

Please be assured that all information that you supply will be held in confidence and that it will not be attributed to you personally unless you first give specific permission for its release.

It would greatly facilitate the work of our panel if we could have your comments by August 20, 1970. If your summer schedule will not permit a response at that time, please do not hesitate to send your answers at a later date.

Since one of the purposes of our panel is to serve as a channel for the opinions of the scientific community at large in the development of national policy, I hope that you will be willing to make your views known to us in as much detail as possible.

The enclosed envelope is for your convenience in replying.

Sincerely,

Ivan L. Bennett

Ivan L. Bennett, Jr., M.D.
Chairman, PSAC BW-CW Panel

Dr. Matthew S. Meselson
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58 Washington Avenue
Cambridge, Mass. 02138

Should the United States Conduct Defensive Biological Research in Secret?

On November 25, 1969, President Nixon announced that

--the US shall renounce the use of lethal biological agents and weapons and all other methods of biological warfare.

--the US shall confine its biological research to defensive measures such as immunization and safety measures.

These statements make clear the President's policy of renouncing any and all uses of biological warfare. However, questions have arisen regarding the sorts of biological research that are permissable and authorized under the new policy. In particular, two interelated questions have come up:

1. Will any biological research be conducted under military secrecy?
2. Will there be continued biological research aimed at developing new strains and types of biological warfare agents?

The principal argument for maintaining a secret research program in biology and for developing new potential biological warfare agents is that such research and information about such agents may be of use in designing defenses against biological attack. To take an example, the potential biological warfare agents discussed in the United Nations Report cause infection only if ingested or inhaled. They do not penetrate unbroken skin. Therefore a gas mask can provide good protection if adequate warning is available. However, it might be possible to develop a new type of virus or other microorganism with properties suitable for use as a biological warfare agent and with the additional property of being able to infect through the skin. A gas mask would not afford adequate protection against such an agent. Instead, protection would require protective suits or shelters with filtered air supplies.

This example could be used to argue for a US research effort aimed at developing skin-penetrating biological agents. If such agents can be developed, the argument would say, we should know this in order to develop the appropriate defensive equipment, in this case protective suits and shelters.

However, if biological attack is thought at all likely, we could prepare protective suits and air-filtered shelters anyway. The important point is that we do not need to know the specific properties of each potential biological warfare agent in order to design defensive equipment of general utility. In fact, equipment is already in existence and is being further developed in order to afford protection of soldiers against chemical agents able to penetrate the human skin, and against biological agents as well.

The above example is only one of several that can be imagined. However, I know of no example that provides a good argument for continuing the developement of new biological warfare agents. Obviously, this question should be given careful attention. Beyond that, it should be reviewed periodically by independent scientists of high professional standing. However, the facile argument that we must continue developing new biological warfare agents in order to prepare better defenses is simply not an adequate guide for policy when the continuation of BW programs poses serious hazards of its own.

There are three principle liabilities of continuing to develop new biological warfare agents even if such work is authorized for defensive purposes only.

1. The deliberate developement of potential biological warfare agents poses the threat of accidental release and spread of extremely harmful or even uncontrollable diseases. After all, we do not have cures for any important virus diseases. Recent close calls with the Marburg and Lasa viruses underscore the extreme virulence that some of these agents possess.

2. The development of improved biological warfare agents would perpetuate and expand the technology of biological warfare. Even if such work was not deliberately aimed at the production of weapons, it would stimulate interest in the possibilities of biological warfare and could place highly developed biological warfare agents in the hands of those who have not genuinely renounced this form of warfare. The result could be a much more serious threat to our security from biological weapons than now exists.

3. The continued developement of biological warfare agents, even if not authorized for the production of weapons, would gravely undermine belief in President Nixon's initiative in renouncing this form of warfare. The President specified that "the US would confine its biological research to defensive measures such as immunization and safety measures." This statement has been widely interpreted to mean that the United States will no longer attempt to develop biological warfare agents and, indeed, that we will no longer conduct any biological research under military secrecy. This latter interpretation was reinforced by the statement of a high White House official following the President's February 1970 decision on toxins. In a statement to the press, this official explained, "What we are now doing is examining the biological facilities to see to what extent they could be used for unclassified research and for the defensive research that is authorized under the President's policy, that is, methods of immunization and other protective measures, but there will be no need for secret research in this field under this program."

The problem of whether or not to allow research in biology under conditions of military secrecy is closely related to the question of the continued development of biological warfare agents. If such developments were authorized, it would certainly be done under conditions of secrecy. Conversely, if secret biological research facilities were thought to exist, it would be impossible to dispel the suspicion that biological weapons were being developed.

CONCLUSIONS:

1. There is not any defensive need for the development of new biological warfare agents.

2. Continuing such development would entail the hazard of accidental release and spread of novel and possibly highly dangerous organisms.

3. If any part of the biological research program is conducted under conditions of military secrecy, the credibility of this country's renunciation of biological warfare would be seriously damaged. This could undermine efforts to avert the proliferation of biological weapons.

Matthew Meselson
July 10, 1970.

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The principal argument for maintaining a secret research program in biology and for developing new potential biological warfare agents. is that such research and information about such as yet undiscovered agents may be of use in designing defenses against biological attack. To take an example, the potential biological warfare agents discussed in the United Nations Report cause infection only if ingested or inhaled. They do not penetrate unbroken skin. Therefore a gas mask can provide good protection if adequate warning is available. However, it might be possible to develop a new type of virus or other microorganism with properties suitable for use as a biological warfare agent and with the additional property of being able to infect through penetrate the human skin. A gas mask would not afford adequate protection against such an agent able to penetrate the skin. Instead, protection would require protective suits or shelters with filtered air supplies.

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Existing biological warfare agents ordinarily cannot penetrate the skin and must generally be inhaled to cause infection. Therefore, a gas mask can provide substantial protection against existing biological warfare agents

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