Hess

United States Senate
COMMITTEE ON FOREIGN RELATIONS
WASHINGTON, D.C. 20510

September 8, 1983

Dr. Matthew Meselson
Department of Biochemistry and
Molecular Biology
Harvard University
7 Divinity Avenue
Cambridge, Massachusetts 02138

Dear Dr. Meselson:

Senator Mathias recently received this letter (copy enclosed) from Mr. Saul Hormats, a constituent from Baltimore.

Mr. Hormats' letter was of enough interest to the Senator to prompt him to ask me for some kind of follow up. If it is not too much trouble, and if you are so inclined, I wonder if it would be possible to ask for your reaction(s) to the points made by Mr. Hormats. Any comments you might have would of course be kept private, and would, of course, be most appreciated by Senator Mathias.

Thank you for your consideration.

With best wishes,

Sincerely,

John H. Hess III
Legislative Assistant
to Senator Mathias

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Enclosure

YELLOW RAIN- A WEAPONS APPRAISAL

by Saul Hormats

There is currently before the Senate a proposed resolution condemning the Soviets for violating treaties and agreements prohibiting chemical and biological warfare. This resolution is sponsored by 21 Senators, liberal and conservative. Overwhelming passage by the Senate is likely, followed probably by the House. The resolution will have a profound impact, as a minimum making achievment of arms control and disarmament agreements far more difficult than at present, and will likely result in pressures by the Administration for resumption of production of biological warfare munitions, paralleling current efforts for production of chemical warfare munitions.

The proposed resolution is based on allegations by the State Department that the Soviets have for many years been using or supplying its allies in Afghanistan and S.E. Asia large quantities of poison gas munitions. These munitions are said to have been used against the guerillas in Afghanistan, but primarily against the H'Mong villages in S.E. Asia. The poison gas used in the munitions is stated to be a toxic mold, Fusarium, popularly called "Yellow Rain", found normally in poorly stored grain. The evidence supporting these allegations consists of a large number interviews by State Department personnel with H'Mong refugees and "solid evidence" in the form of blood samples, moldy twigs and leaves, rock scrapings and a discarded Soviet gas mask found in a trash dump.

There has been much debate on the significance of the State findings. Although the subject of the debate is military; munitions, targets, logistics, the debators are diplomats, politicians, analytical chemists and scientists with academic backgrounds, hardly a group to deal with military matters. The debate seems centered not on whether but rather on how the Soviets are doing what State alleges. From the military point of view there are grave doubts the Soviets are doing anything at all:

1. Why chemical or biological attack? H'Mong villages are ver small, 20 to 15 houses covering the equivalent of a city block. There are many conventional munitions such as the anti-personnel shell used in Viet Nam and Beirut that could easily destroy all the villagers. White phosphorus shell, as used in Beirut, would not only destroy the villagers but the village itself. The Soviets must certainly have large quantities of these in their arsenal. Why then risk world condemnation by using chemical or biological weapons?

2. If for some reason the Soviets decided to use toxic munitions, why then Yellow Rain? Since nerve agents and the like give unmistakable evidence of use, perhaps their objective is for effects that might be construed as resulting from a naturally occuring food poisoning. There are many substances well known and available to weapons designers that could do this and most effectively. For example, a small aerosol container, the smallest found on a supermarket shelf, slightly strengthened, and with a somewhat modified nozzle, containing a solution of Botulinal toxin type A and functioned on the perimeter or in the village would kill everyone, presumedly from Butulism food poisoning. Weight of the entire munition might be perhaps 6 ounces.

Had the Soviets wished to incapacitate rather than kill H'Mong, an agent of choice might well be a Staphylococcal enterotoxin. A munition in size and appearance quite similar to a paint spray can, would be capable of causing a number of villagers to become exteremely ill for a day or two, presumedly from common "Staph" food poisoning. Three or four of these would likely effect most of the village.

The above are chemical agents. Had the Soviets decided to violate their Biological Warfare agreements, then their agent might well be the microorganism Coxiella burnetti, causing Q-fever and found in most parts of the world. The agent is easy to produce. Chills, fever, fatigue and weight loss could last for a month or longer and would be attributed to inadequate pasturization of milk or milk products. Domesticated livestock and poultry would also be infected. The munition to do all this might weigh as little as 2 ounces.

In contrast, as a minimum 3 thousand tons of Yellow Rain agent would be required to attack the target. To place this quantity of agent on the village would require 20 thousand to 30 thousand shells, some two hours of continued firing by a full Soviet Artillery division. It is true the Soviets believe in massive artillery fire, but on a remote mountain village of 15 to 20 families! A six gun Soviet 122 mm. howitzer battery as attached to a Soviet infantry regiment and firing two salvos of conventional shell, weighing in all perhaps 1 thousand pounds, would leave little left of the village. Were the 3 thousand tons dropped in bulk over the village, very little would reach the target. Most would be carried away by the wind.

Again, why then Yellow Rain?

3. The evidence of a chemical or biological attack is unmistakable to an experienced observor. For example, the level of casualties would decrease with distance from point or line source munitions, as would the severity of symptoms. With other delivery systems, other, equally discernable patterns would be evident. Indeed, an experienced observor could come close to describing the munition and probably the agent used just from the description of the attack. The descriptions provided by State interrogators give no patterns whatsoever of any type of chemical or biological attack.

4. Initially, State allegations dealt with clouds of a yellow granular substance delivered by shell or bombs. However, perusal of the many incidents described in State Department publications indicate something else. Judging from the descriptions of the attacks as given by those questioned, a very large number of different munitions have been employed. Agents giving very different symptoms and effects are described, agent clouds are not just yellow but almost the entire spectrum of colors, dissemination is by a variety of means including plastic bags opened above the target,

liquid spray, shell, bombs, grenades, and the like, the clouds described range from large granules falling from heights directly upon the village thru liquid drops to very fine airborne smokes. Taking the State Department evidence at face value as many as 250 different agent- munition systems seem to have been used.

Judging by U.S. experience, starting from scratch searching for a new agent, researching its toxicity and methods for dissemination, developing and testing and producing the munition would take 10 years or longer, or over 2500 years for the entire Soviet program. Such preplanning would seem somewhat improbable. Assuming the Soviets had a very much larger establishment than ours, that it had far better luck, that it could utilize one technique for disseminating several agents, etc., perhaps they could have accomplished their program in as little as 50 years, although this is somewhat improbable also.

Fifty years of concentrated effort by a large percentage of the best scientists and engineers in the Soviet Union to kill villagers in Kampuchea?

5. A very important part of a weapons development program is assuring reliability of functioning in combat. This involves extensive and prolonged tests to assure ability of munitions to withstand rigors of storage, transport and delivery to the combat line. These are long programs and can not be significantly compressed in time without seriously diminishing combat reliability. Even under the best conditions there are always a percentage of malfunctions, duds. If the State Department allegations are accepted and the Soviet program compressed as must be the case, it would be most surprising were their dud and malfunction rates less than perhaps 10 to 5 percent.

Judging from the very large number of incidents that have been reported there should be a very large number of duds and malfunctions,

indisputable proof of Soviet activities. Yet the best evidence given us are moldy twigs and leaves and rock scrapings. State officials say the lack of more substantive evidence is because of the danger to their people to operate in the combat zones, which is probably true. However, the CIA has many techniques which they could use. Among others, offer of a small, but to the impoverished peoples of the region a sizeable, cash reward should result in rooms at the State Department full of hardware of indisputable Soviet origin. Yet State has not even one sample. Either the CIA is not trying or, which is more likely, there is just no such evidence.

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There are grave doubts to say the least of the validity of the allegations on which the proposed Senate resulution is based. Certainly, personnel within the Defence Department and the CIA must also at times have expressed their doubts,perhaps even greater and even for more reasons than outlined here. It is difficult to believe the Secretary of Defence and the Director of the CIA are unaware of this: that there is no acceptable evidence the Soviets have been or are engaged in chemical or biological warfare, and that the State allegations are likely based on imaginative responses to naive and gullible questioners. For what reason has the Congress not been so informed?

Perhaps our country would be better served if the proposed resolution were placed aside by the Senate and its attention here turned in the opposite direction - Has the Congress been misled as would appear here, why, and by whom?

Mr. Saul Hormats, now retired, was employed at Edgewood Arsenal, Maryland for 37 years. He directed the development of the current chemical munitions and protective equipment of the U.S. Army, and was closely associated with various aspects of U.S. biological warfare and nuclear activities, and with the intelligence community. He is a retired reserve officer and a Fellow, American Association for the Advancement of Science.