

YELLOW RAIN AND RELATED ISSUES: IMPLICATIONS FOR THE UNITED STATES

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ISSUE DEFINITION

The United States has charged that the Soviet Union is implicated in the use of chemical weapons in Afghanistan and of chemical and toxin weapons, including the toxin known as "Yellow Rain," in Laos and Kampuchea (Cambodia). These charges raise two significant sets of issues:

First, issues surrounding the evidence that has been presented to show: (a) that such weapons have been used and (b) that the Soviet Union is implicated in this use. The Department of State has prepared extensive documentation intended to demonstrate that the evidence on both counts is compelling. Some observers, however, while acknowledging the existence of a growing body of evidence, believe that there is still room for doubt and argue against too aggressive a U.S. stance on the evidence at this time.

Second, issues connected with the implications of Soviet involvement, if proven, in chemical and toxin warfare. Biological toxin use would clearly be contrary to the 1972 Biological and Toxin Weapons Convention, and the use of toxins and gases could violate other treaties as well as customary international law. One issue is whether, as some argue, these alleged violations reveal degrees of Soviet treachery, deception, and inhumane conduct so great as to require a reevaluation of the entire Western relationship with the Soviet government. Another is whether arms control negotiations with the Soviet Union should be abandoned because the Soviets cannot now be trusted to abide by any agreement. Finally, should U.S. policy on the modernization of its own chemical warfare capability be influenced by the evidence presently available from southeast Asia and Afghanistan?

BACKGROUND AND POLICY ANALYSIS

The Evidence

The United States, under two Administrations, had taken the lead in attempting to expose the alleged use of chemical and toxin weapons in Afghanistan and Southeast Asia. The Carter Administration, in 1980, published a detailed compilation of the allegations. It also pushed for an investigation of the charges under the sponsorship of the UN General Assembly (having anticipated a Soviet veto of an investigation by the Security Council). Under the Reagan Administration, the State Department has presented the first evidence based on toxicological testing (the Department of State released a comprehensive review of the available evidence on Mar. 22, 1982). Ex-Secretary of State Haig publicly raised the issue. Evidence has also been given to other countries through diplomatic channels, and the matter has been brought up in private meetings with Soviet officials at all levels.

The United Nations has also undertaken an investigation. The Soviet Union vigorously opposed this investigation, but was unable to block it. The investigation is continuing, despite what many believe to be inadequate funding and other difficulties allegedly created by Soviets in UN staff positions. A complete report is planned for the fall, though some argue this is an unjustified delay which creates opportunities for the Soviets to

manipulate the conclusions. On Nov. 25, 1982 Kenneth Adelman, U.S. Deputy Delegate to the UN, stated that the U.S. plans to allow the UN inquiry into the use of chemical weapons in Asia to die. Adelman cited the inability of the investigative team to reach substantive conclusions as the reason for this U.S. action. Recently, excerpts of interviews by UN investigators of Afghan refugees were published in the Wall Street Journal, June 7, 1982: 20). In an editorial accompanying the article, the Journal also reported that considerable physical evidence gathered by the team had been mishandled by the UN.

The publicly available evidence consists mostly of eyewitness and second-hand accounts. However, on Nov. 29, 1982, Secretary of State George Shultz released a 12-page report providing additional toxicological evidence, and offered at the same time the first physical evidence in the form of two Soviet gas masks contaminated with "Yellow Rain". Both masks were obtained in Afghanistan in late 1981. These have been supplemented, however, by toxicological testing on evidence from Laos and Kampuchea.

Afghanistan

Deputy Secretary of State Walter J. Stoessel Jr. charged on Mar. 8, 1982, that more than 3,000 Afghans had been killed by Soviet troops using a variety of chemical weapons and possibly toxins. This marked the first public U.S. allegation of possible toxin use in the South Asian country. A State Department spokesman said that the evidence cited by Stoessel came from refugees, defectors, victims, and doctors who had treated victims. He acknowledged that physical evidence, such as a chemical weapons projectile, was lacking. The Stoessel allegations were repeated in the Mar. 22, 1982 State Department report.

The United States has charged the Soviet Union with using lethal chemical weapons in Afghanistan, including nerve agents, phosgene or phosgene oxime, and mustard gas. The use of incapacitating and riot-control gases by Soviet troops, or by Soviet-backed Afghan forces, has also been alleged. According to information released by the State Department in an August 1980 compendium on the issue, one such gas apparently causes its victims to lose consciousness for some hours, without subsequent ill effects. The chemical makeup of this gas is not known to U.S. analysts. Other non-lethal gases, including tear gas and laughing gas, have also been reported.

These U.S. charges have apparently been confirmed by the UN investigation mentioned above, investigators having interviewed numerous victims and eyewitnesses of Soviet biochemical warfare attacks.

The alleged poison gas attacks in Afghanistan have reportedly been mounted in connection with battlefield operations, but civilian targets have evidently been hit during such operations. Soviet forces in Afghanistan have been observed to be equipped with chemical and biological warfare (CBW) decontamination equipment, including a standard Soviet device making use of a jet engine for decontaminating tanks, and with gas masks.

Laos and Kampuchea

Information compiled by the State Department from southeast Asia suggests that gases as well as "Yellow Rain" have been used in both Laos and Kampuchea. [See the August 1980 State Department compendium; the March 1981

update, the Mar. 22, 1982, Special Report, and the November update.] In Kampuchea, these substances appear to have been employed primarily in battlefield situations by Vietnamese troops and troops of the Vietnam-supported Kampuchean elements against the forces of the rival Khmer Rouge. But there are also reports of the distribution of poisoned food to civilians and of the poisoning of wells in Kampuchean refugee camps in Thailand.

In Laos, in addition to battlefield uses by the troops of the Pathet Lao government, there have been numerous reports of attacks with chemical and toxin weapons against villages -- particularly the villages of the Hmong people in the remote highlands of central Laos. These reports come from Hmong refugees themselves and from Laotian defectors. [See the State Department Compendium, update, and Special Report.] A former Laotian air force pilot has stated that he was assigned to disperse toxic chemical substances over Hmong villages on numerous missions beginning in 1976. The fiercely-independent Hmong have long resisted government attempts to resettle them in more easily controlled lowlands areas. Many Hmong assisted the United States during the period of U.S. military involvement in southeast Asia. [For further information, see CRS IB79079, Indochinese Refugees: Issues for U.S. Policy.]

Accounts of the use of Yellow Rain, a fungus-produced toxin (mycotoxin), originate in these two countries. Many refugee reports have referred to a yellow powder or yellow drops disseminated by aircraft. Contact with these substances is said to lead to itching, nausea, difficulty in breathing, diarrhea, bleeding from the nose and mouth, and death. Leaves of vegetation in stricken areas are said to develop brown spots.

U.S. scientists were initially puzzled by the Yellow Rain accounts, since no known CBW agent produced such a combination of effects. Analysts hypothesized, however, that mycotoxins produced by the common fusarium fungus could be responsible. In August 1981, a leaf, leaf parts, and a twig from an alleged Yellow Rain site in Kampuchea were found to contain three of these mycotoxins, from what is known as the trichothecene group. Among the mycotoxins is a poisonous substance called T2. According to a State Department report, these trichothecenes were present in unusually large amounts and could probably not have resulted from natural processes. In November 1981, the Department reported that trichothecene poisons had also been found in a water sample from a Kampuchean village and in two samples of a yellow powder scraped from rocks in Laos. The State Department has noted that trichothecenes have not been found in control samples collected in reportedly unaffected areas of Kampuchea, and this suggests to some U.S. analysts that the poisons are not naturally occurring substances in the region.

Other evidence has been provided by sources outside the U.S. government. An unofficial report of the Canadian government submitted to the UN in June concludes that reports of alleged yellow rain attacks in Southeast Asia cannot be explained by diseases known to occur in the area or by naturally occurring mycotoxins. A University of Minnesota plant pathologist, regarded as the nation's foremost expert on the trichothecene family of toxins, has found significant quantities of these toxins in samples collected in Southeast Asia. A private Philippine doctor who spent two years working in a Laotian refugee camp in Thailand has concluded that "chemicals have been used against the Hmong intermittently since 1976" and indicates that other doctors are similarly convinced.

ABC News obtained its own Yellow Rain sample, thought to be from Laos, and reported in December 1981 that this sample contained the same three trichothecenes as well as a derivative of polyethylene glycol, a material that does not occur in nature. [See New York Times, Dec. 18, 1981.] According to a researcher cited by ABC, this substance might have been used to carry and disperse the toxins.

The State Department issued an additional report in January 1982, based on preliminary tests run on blood samples from suspected victims of a Yellow Rain attack in Kampuchea. A university researcher tentatively identified a product of T2, as metabolized by the human body, in at least two of the nine samples. Eight of the alleged victims had below-normal white blood cell counts, which could have resulted from trichothecene exposure.

In sum, evidence of the use of chemical and toxin weapons in Southeast Asia and Afghanistan is very strong. Moreover, as investigations have proceeded, no evidence disproving the charges has been found. Although some members of the scientific community have been skeptical of the evidence, a bit of that skepticism seems to have waned in recent months. A recent article in the weekly publication of the American Association for the Advancement of Science (Science Magazine) serves as an example of this change: the article termed the case made by the U.S. "persuasive" and "well-established", though in earlier issues, Science termed the charges premature. Many observers, however, remain unconvinced.

On Oct. 26, 1982, as the 37th session of the United Nations General Assembly convened, a UN team of chemical warfare experts returned to Bangkok, Thailand, to continue their investigation of evidence obtained from reported Yellow Rain victims.

U.N. Investigation Final Report

On Dec. 3, 1982 the Secretary General released the final investigative report concerning the use of chemical weapons in Asia. The report stated that the investigative team found that allegations concerning the use of "harrassing agents" in Afghanistan and "toxic material" in Laos were well-supported by "circumstantial evidence". No further definitive conclusions were reached. The investigative team cited the inability to gather on-site evidence as the major hindrance to their study. The governments of Laos and Afghanistan had refused them entry, and Cambodian officials had not provided what the team members felt to be sufficient guarantees of safety in the midst of the on-going civil war.

The U.S. response to the U.N. final report was to object to the "self-defeating standards of evidence" of the investigative team and to criticize their unwillingness to enter Cambodia. The U.S. delegation said that it would allow this investigation to die, but intended to sponsor a resolution in conjunction with France, Belgium, Ecuador, the Netherlands, Sweden, and Uruguay requesting the Secretary General to compile a list of experts and laboratory facilities which can be used on short notice for future investigations.

Soviet Involvement

The Soviets no longer deny the presence of yellow rain toxins in Southeast Asia, but they deny any complicity. Their scenario, released to the UN in

June, was prepared by the U.S.S.R. Academy of Sciences and the Ministry of Health; it contends that the U.S. use of herbicides and napalm in Vietnam, combined with wind patterns in the region, created the conditions for the spread of the toxin by natural means. The theory has been termed "bizarre" by some and "science fiction" by one of the world's foremost authorities on Fusarium (a fungus), some varieties of which produce the T2 toxin found in Southeast Asia.

Soviet involvement in chemical and toxin warfare in Afghanistan should not be difficult to substantiate if the evidence from Afghanistan is confirmed. Soviet troops are directly involved in the Afghan fighting itself and they work closely with the troops of the Afghan central government.

In southeast Asia, the exact nature of Soviet involvement remains uncertain. Reports of Soviet advisors and pilots in the area have occasionally reached the West, and if such Soviet personnel are present they may have engaged in the use of poison weapons. The State Department alleged in its March 1982 report that Soviet advisors and technicians in Laos had been directly involved in the use of chemical weapons. In addition, according to the State Department, the Soviets have transferred chemical and toxin weapons to their local allies, who are not generally regarded as capable of producing such weapons themselves. There is a possibility that Vietnam could be manufacturing at least small quantities of Yellow Rain through a fermentation process, although State Department experts do not believe that this could be done without Soviet assistance. State Department analysts note, moreover, that there is no evidence -- whether as information from defectors, Vietnamese scientific publications dealing with mycotoxins, or in some other form -- to indicate that local manufacture is taking place.

According to some observers, there is enough evidence of continuing Soviet research in chemical and biological weapons to indicate that the Soviets are fully capable of using such weapons themselves or of providing them to others. Reference is often made to a 1979 outbreak of anthrax near a suspected Soviet CBW facility in Sverdlovsk in support of this contention. Soviet explanations for this outbreak have not been accepted by the United States. Researchers have also noted that Soviet scientists have had much experience in dealing with natural outbreaks of fusarium poisoning in grain crops, and argue that this experience may have given the Soviets the capacity to manufacture such poisons on a large scale. Nor can the evidence that the Soviet Union provided Egypt with gas weapons for use in North Yemen in the 1960s be disregarded, in this view. Finally, it is argued, Soviet resistance at the UN to the General Assembly-sponsored investigation of the Yellow Rain reports in southeast Asia must be viewed with suspicion.

Debate Over the Evidence

Despite the considerable documentation provided by the State Department under both the Carter and the Reagan Administrations, some observers remain skeptical of the evidence that has been presented from Afghanistan and southeast Asia. Skeptics have made the following points:

- Many of the eyewitness accounts come from unsophisticated lifelong residents of rural areas.
- The physical evidence is based on a very small number of samples from the field.

- Little information has been released on where and under what conditions the samples of vegetation and blood were gathered or on how they were shipped to the United States. Consequently, the possibility of alteration of the samples by contamination, whether intentional or unintentional, cannot be ruled out.
- Although trichothecene poisons have not been found in control samples of soil and vegetation from southeast Asia, skeptics assert that too little is yet known about the natural occurrence of these substances in the region.
- Defensive Soviet CBW equipment in Afghanistan could be explained by the possibility, acknowledged by military analysts, that such equipment is normally deployed with all Soviet infantry units. Its presence in Afghanistan thus would not necessarily indicate that chemical or biological weapons were being used.
- The Soviet Union has a long history of naturally occurring anthrax, and some believe that this history could explain the Sverdlovsk incident.
- Soviet opposition to investigations of the Sverdlovsk incident may simply reflect long-standing Soviet suspicion of outsiders and opposition to on site inspection..
- The Soviet Union may not have sufficient motive for becoming involved in the use of chemical and toxin weapons. The alleged uses would not appear militarily decisive, and exposure would be too damaging to the Soviet Union's attempt to portray itself, both in Europe and the Third World, as a responsible power committed to peace and to the control of dangerous weapons.

Professor Mathew Meselson of Harvard University has suggested that the presence of mycotoxins on vegetation samples collected in Southeast Asia could be explained as a natural phenomenon. He cites the high concentration of pollen found in several samples, and noting the fertility of pollen as a growth medium, suggests that the mycotoxins could result from the natural growth of the fusarium fungus on the pollen spots. The large size of the pollen concentrations Professor Meselson attributes to the seasonal excrement of bees. Critics of this theory point to the lack of reported mycotoxin poisoning prior to the advent of "Yellow Rain" in the area, and the unlikelihood that a single bee could have collected the diversity of pollen found in each of the pollen spots. Alternative explanations for the presence of the pollen have included the speculations that Yellow Rain leaves a sticky residue to which pollen adheres or that the pollen has been used as a carrier for the mycotoxin which could be readily inhaled.

Those who believe that chemical toxin weapons have been used in Afghanistan and southeast Asia maintain that the skeptics simply fail to appreciate the totality of the evidence that has already been presented. Any single eyewitness account or piece of physical evidence might be open to

question, but, they argue, considered as a whole the evidence leaves little room for reasonable doubt.

Nor, from this perspective, is there reason to doubt that the Soviet Union had adequate incentive for using gas or toxin weapons or for providing them to allied states. The areas in which these weapons have reportedly been used, it is pointed out, are all highly remote, and the Soviets may have concluded that chemical and toxin warfare in these regions would go undetected. Any scattered reports reaching the outside world, Soviet leaders may have reasoned, would probably be confused and subject to doubt.

Soviet military planners may have felt that gas and toxin weapons would be particularly appropriate in the battlefield conditions they or their allies faced in Afghanistan, Laos, and Cambodia. Lightly armed guerrillas operating in rugged or forested terrain can be difficult to engage with conventional weapons. But gases and toxins offer the prospect of killing guerrilla troops that lack CBW defensive equipment in their hiding places or of flushing them into the open. Such weapons might thus appear cost effective at a time when Soviet military expenditures may be constrained by competing demands and poor performance of the Soviet economy. Finally, while many observers doubt that combat lessons learned in Afghanistan or southeast Asia will have much relevance for the European theater, some believe that the Soviets may have wanted to test their CBW capability in preparation for possible deployment against NATO or Chinese troops.

Applicable International Law

The 1972 multilateral Biological and Toxin Weapons Convention is directly germane to the alleged use of mycotoxins in southeast Asia. This treaty, sweeping in its terms, prohibits the development, production, or stockpiling of bacteriological (biological) or toxin weapons. It also prohibits the transfer of biological agents, toxins, weapons, equipment, or means of delivery to any recipient; and it outlaws any assistance, encouragement, or inducement to any state in the development of biological weapons. The Soviet Union is a party to this convention, and it is clearly in violation if it has used toxin weapons; provided toxin weapons to allies in southeast Asia; or helped an ally to develop such weapons. Vietnam, Laos, Cambodia, and Afghanistan have also ratified the Biological Weapons Convention, as has the United States.

Application of the 1925 Geneva Protocol is more problematic. The protocol prohibits the use in warfare of bacteriological weapons as well as "asphyxiating, poisonous, or other gases and of all analagous liquids, materials, or devices." While the Soviet Union has ratified this convention, it did so with the reservation that it would be bound only with respect to other ratifying nations. Thus it could be argued that the protocol does not apply in situations in which Soviet troops are fighting against a guerrilla movement, as in Afghanistan, or in providing assistance to allies. It might also be claimed that the conflicts in Afghanistan and Laos are internal conflicts and not wars under the terms of the protocol. Afghanistan, Laos, and Kampuchea are not parties to the protocol and could argue, if they chose to do so, that they are not bound by its terms. Vietnam has ratified the protocol but might deny that it is binding with respect to the Khmer Rouge.

Many international lawyers argue, however, that the prohibition against the use of gas weapons is older than the Geneva Protocol and so widely recognized that it has become a part of customary international law, binding

on all states. Indeed, they note, the Protocol itself is phrased as a document intended to perfect a long-standing doctrine of customary law. Others point out, however, that customary law is difficult to establish and likely to be controversial when attempts are made to apply it to specific cases.

In so far as noncombatant civilians have been harmed, governments using CBW can be accused of violating the 1949 Geneva Convention Relative to the Protection of Civilian Persons in Time of War (one of the so-called Red Cross Conventions). This convention commits all parties to the humane treatment of civilians even during civil wars. The Soviet Union, Afghanistan, Laos, and Kampuchea have all ratified this convention, as has the United States.

The Genocide Convention would apply in Laos if it could be substantiated that a campaign was underway to exterminate the Hmong people. The convention prohibits acts intended "to destroy, in whole or in part, a national, ethnical, racial, or religious group, as such." The Soviet Union and Laos have ratified this convention, but the United States has yet to do so. As a result, some observers suggest that the United States is in a poor position to raise the genocide issue.

ANALYSIS

Implications for U.S. Policy

Soviet Conduct

The allegations of Soviet involvement in chemical and toxin warfare are an important consideration for those observers who believe that the Western nations should give up hope of cooperation with the Soviets on arms control and perhaps other issues. The allegations of a Soviet willingness to use inhumane weapons in violation of treaty obligations and customary international law would, if confirmed, finally and convincingly demonstrate, according to this view, that the Soviets were treacherous in their failure to keep solemn obligations and ruthless in their determination to use any and all means to achieve their objectives. Indeed, some suggest, the alleged Soviet resort to the use of chemical and toxin weapons is one sign among others of a new and highly aggressive phase in Soviet policy. During such a phase, in their view, it would be particularly dangerous to believe that the the Soviets would respect any agreements with the Western nations.

According to another view, however, the possible Soviet use of CBW, while perhaps unpardonable, is understandable and not especially dangerous to Western interests. From this perspective, the Soviet Union, facing a long war in Afghanistan and demands for assistance from its southeast Asian allies, may have succumbed to the tempting belief that escalation to chemical and toxin weapons offered a way out of all three problems. A few observers have pointed out that the United States itself was not immune to the temptation of escalation in southeast Asia and indeed used non-lethal, riot-control gases as well as herbicides in combat situations there.

U.S. officials are quick to insist that there is no parallel between U.S. and Soviet conduct because the riot-control gases and herbicides used by the United States were not intended to be lethal. Nor was the United States a party to the Geneva Protocol or the Biological and Toxin Weapons Convention

when it used these substances. Critics of U.S. policy in Vietnam, however, have noted that gas weapons and herbicides were sometimes intended to expose the enemy to lethal weapons, and some have contended that the use of these substances was at least a violation of customary international law. This view continues to be strongly contested.

In any event, many will continue to believe that some arms control agreements with the Soviets are desirable and can succeed. In their view, the lesson of the current allegations against the Soviet Union is not that arms control agreements must inevitably fail but that any new agreements must be backed up by effective mechanisms for assuring compliance. The problem with the Geneva Protocol, in this view, is that it lacks any such mechanisms. The Biological and Toxin Weapons Convention provides for the UN Security Council to launch an investigation once a complaint has been received, but such an investigation would be subject to the veto of any one of the five permanent members of the Council, and this includes the Soviet Union.

Thus, many maintain, better verification procedures must be devised. But to give up any hope of arms control agreements with the Soviets would be a mistake, from their perspective. The United States would be damaged over the long term by such a decision, according to this view, by the cost of an ever escalating arms race. In the short term, the United States might find its security interests in Western Europe jeopardized. The current U.S.-Soviet talks on intermediate-range theater nuclear forces in Europe are being closely watched in the Western European nations. If the United States were perceived as responsible for any breakdown in these talks, it might not be permitted to modernize its theater nuclear forces on the continent.

A U.S. Program?

The possibility that the Soviet Union may be testing CBW weapons in Afghanistan and southeast Asia suggests to some observers that the United States should resume a chemical weapons program of its own. They have argued that the United States should expand its existing chemical capabilities and enhance its ability to defend against CBW attack. Most critics of this view are not generally opposed to increased CBW defensive capabilities among U.S. forces as a prudent measure. They believe, however, that the existing U.S. stockpile of gas and gas weapons is adequate and that U.S. nuclear and conventional capabilities will deter the Soviets from a CBW attack. In their view, a new U.S. chemical weapons production program would only appear to vindicate those who maintain that the U.S. Government is exploiting the Yellow Rain issue to make its own chemical weapons plans politically acceptable. [For further information, see IB81081, Chemical Warfare: Background and Issues.]

Current U.S. Policy

The stated goals of present policy, according to U.S. officials, are: to stop the use of chemical and toxin weapons; to focus world attention on Soviet conduct; and to highlight the need for effective compliance procedures in all arms control agreements. Richard Burt, Director of the State Department's Bureau of Politico-Military Affairs, noted in November 1981 Senate testimony, "There should be no doubt...that the U.S. Government will insist that any future arms control agreements contain whatever provisions are needed to permit verification and to insure that questions of compliance are dealt with seriously." In June, President Reagan made Soviet complicity

in yellow rain a key part of his speech before the UN Disarmament Session.

Some critics of the current U.S. stance argue that it goes beyond what might be justified on the basis of existing evidence. According to this position, excessive U.S. emphasis on the issue could damage the prospects for further arms control agreements and create an atmosphere of alarm that will result in a headlong chemical and biological arms race.

Another view is that the United States has not yet done enough to condemn the Soviet Union or to help the alleged victims of chemical and toxin attacks. The Reagan Administration has been praised by some who hold this view for taking what is perceived as a firmer stance than the Carter Administration. It has been pointed out, however, that the Reagan Administration has been able to make use of additional information from southeast Asia in pressing its case. In any event, some believe that the United States remains far too cautious on the Yellow Rain issue. Many have suggested in particular that too little is being done to assist the Hmong people, who placed their trust in the United States during the period of U.S. involvement in southeast Asia.

One step that has been recommended is a formal complaint to the Security Council under the Biological Weapons Convention. The executive branch has been reluctant to bring its case to the Council, however, because a Soviet veto of an investigation seems almost inevitable. Such a veto, though embarrassing to the U.S.S.R., could seem to put an end to the issue and leave the United States with reduced options for further action. There is no provision in the Biological Weapons Convention whereby a single state may convene a conference of all signatories, as some have suggested.

The Reagan Administration has decided in favor of producing binary gas weapons in order to modernize U.S. chemical weapons capabilities. Funding for these weapons has been requested for FY83, and the certification required to begin chemical munitions production has been sent to Congress. No link has been drawn by the executive between binary gas weapons development and the allegations of Soviet involvement in chemical and toxin warfare Afghanistan and southeast Asia. The Administration's position on binary weapons, however, may at least have been conditioned by the allegations. Some believe that the allegations indeed strengthen the case for binary gas weapons. Others argue that binary gas weapons development or production now would be a mistake precisely because, in the eyes of world opinion, it would weaken the U.S. standing for criticizing the Soviet Union on the Yellow Rain issue.

LEGISLATION

P.L. 97-113 (S. 1196, H.R. 3566)

International Security and Development Cooperation Act of 1981. Sec. 716 states that Congress condemns the use of, and the provision for use of, chemical agents and toxin weapons against the peoples of Laos, Kampuchea, or Afghanistan. Further states that the President should seek measures to bring an end to such action, allocate the highest possible priority to developing further evidence on the nature and origins of the chemical and toxin weapons being used, and vigorously seek a satisfactory explanation from the Government of the Soviet Union. S. 1196 had contained an amendment introduced by Senator Humphrey on Sept. 30, 1981. This amendment condemned the use of toxins, or biological or chemical agents against the peoples of

Laos, Kampuchea, and Afghanistan; urged UN action on violations of international law; and urged the President to obtain an explanation from the Soviet Union. Passed by a roll call vote, 92-0, on Sept. 30. The House amendment, by Representative Leach, was comparable and also stated the sense of the Congress that the President allocate the highest priority to the development of further evidence. Introduced and passed by a voice vote on Dec. 9, 1981. Conference (H.Rept. 97-413) adopted the House position. S. 1196 was introduced on May 15, 1981. Passed the Senate, amended, on Oct. 20. Passed the House, amended, in lieu of H.R. 3566 on Dec. 9. Senate agreed to Conference Report (H.Rept. 97-413) on Dec. 15.; House agreed to Conference Report on Dec. 16. Signed into law by the President on Dec. 29, 1981.

HEARINGS

- U.S. Congress. House. Committee on Foreign Affairs. Subcommittee on International Security and Scientific Affairs. Strategic implications of chemical and biological warfare. Hearing, 96th Congress, 2d session Apr. 24, 1980. Washington, U.S. Govt. Print. Off., 1980. 69 p.
- U.S. Congress. House. Permanent Select Committee on Intelligence. Subcommittee on Oversight. The Sverdlovsk incident: Soviet compliance with the biological weapons convention. Hearings, 96th Congress, 2d session. May 29, 1980. Washington, U.S. Govt. Print. Off., 1980. 18 p.
- U.S. Congress. Senate. Committee on Foreign Relations. Subcommittee on Arms Control, Oceans, International Operations and Environment. Yellow rain. Hearing, 97th Congress, 1st session. Nov. 10, 1981. Washington, U.S. Govt. Print. Off., 1982. 81 p.

REPORTS AND CONGRESSIONAL DOCUMENTS

- U.S. Congress. House. Permanent Select Committee on Intelligence. Subcommittee on Oversight. Soviet biological warfare activities: a report. Washington, U.S. Govt. Print. Off., 1980. 6 p.
At head of title: Committee print.
- United Nations. General Assembly.
Report of the Secretary General
Report No. A/37/259. Dec. 1, 1982

CHRONOLOGY OF EVENTS

- 12/08/82 -- Kenneth Adelman, U.S. Deputy Delegate to the U.N. suggested that evidence indicated the possible use of nerve agents by Soviet-backed Ethiopian troops against Eritrean rebels.
- 12/03/82 -- The final report of the U.N. investigative team concerning the use of chemical weapons in Asia

stated that the possibilities of the use of "toxic material" in Laos and "harrassing agents" in Afghanistan were well-supported by circumstantial evidence, but draws no definite conclusion.

- 11/29/82 -- Secretary of State George Shultz released a 12-page report providing additional toxicological evidence of the use of chemical weapons in Asia. He also offered the first physical evidence in the form of two Soviet gas masks contaminated with "Yellow Rain" mycotoxins. Both masks were obtained in Afghanistan in late 1981.
- 11/25/82 -- Kenneth Adelman, U.S. Deputy Delegate to the UN, stated that the U.S. plans to allow the UN inquiry into the use of chemical weapons in Asia to die. Adelman cited the inability of the investigative team to reach substantive conclusions as the reason for this U.S. action.
- 06/21/82 -- Canada submitted to UN an independent report prepared by an eminent veterinary pathologist that concludes that alleged yellow rain attacks in Laos and Kampuchea cannot be explained by diseases known to occur in the area or by naturally occurring mycotoxins.
- 06/07/82 -- The Wall Street Journal published excerpts of interviews conducted by members of the United Nations team investigating allegations about the use of chemical and biological warfare agents by the Soviet Union and its allies in Southeast Asia and Afghanistan. The interviews were conducted with Afghan refugees who claimed to be victims and eyewitnesses of Soviet biochemical warfare attacks in Afghanistan.
- 05/21/82 -- Soviet Union submitted to UN a critique of the U.S. State Department's report of Mar. 22, terming it a "malicious fabrication". The report acknowledges the presence of yellow rain toxins in Southeast Asia, but blames them on the herbicides and napalm used by the U.S. in Vietnam.
- 05/13/82 -- The Department of State released an analysis of further evidence of chemical warfare in southeast Asia, indicating positive identification of T2 toxin and its metabolite HT2 in the blood and urine samples taken from four victims of a chemical attack in Kampuchea (Cambodia). Evidence indicated exposure to high concentrations of the toxin and symptoms consistent with those caused by trichothecenes. Environmental control samples contained no trichothecenes.
- 03/30/82 -- The House subcommittees on Asian and Pacific Affairs and on International Security and Scientific Affairs began a series of joint hearings on chemical and toxin warfare. The hearings were to examine the evidence on such warfare in Afghanistan and southeast Asia

and to consider the implications for arms control.

- 03/22/82 -- The Department of State released a report (Special Report No. 98) on chemical warfare in southeast Asia and Afghanistan. (The report provided numerical estimates of the deaths occurring from such warfare; made new allegations on Soviet involvement; and indicated that "Yellow Rain" mycotoxins might have been used in Afghanistan. Information provided in previous State Department documents was summarized and additional medical information given.)
- 03/08/82 -- The United States charged that the Soviet Union had killed more than 3,000 people in Afghanistan with chemical and possibly toxin weapons. (Deputy Secretary of State) Walter J. Stoessel Jr. said in Senate testimony that "As a result of chemical attacks, 3042 deaths attributed to 47 separate incidents between the summer of 1979 and the summer of 1981 have been reported." A State Department source said that the evidence came from defectors, refugees, victims, and doctors who had treated victims. He acknowledged, however, that physical evidence was lacking.)
- 02/21/82 -- The New York Times reported that Eritrean guerrilla forces in Ethiopia were claiming that Soviet-supplied Ethiopian troops were using chemical weapons against them. (A U.S. official had said that there was no independent confirmation of this claim, according to the Times.)
- 02/16/82 -- Max Kampelman, chief U.S. delegate to the European Security Conference in Madrid, charged the Soviet Union with operating 20 chemical and biological weapons facilities in violation of international conventions. (Kampelman added, "It is unmistakable that innocent people in Laos, Kampuchea, and Afghanistan have been victims among other lethal agents, potent mycotoxins of the trichothecene group.")
- 02/14/82 -- Secretary of State Haig, speaking on ABC's "This Week With David Brinkley," said that Soviet chemical weapons had caused "scores of thousands" of civilian casualties in Afghanistan and southeast Asia.
- 02/08/82 -- President Reagan certified to Congress that renewed manufacturing of chemical weapons was "essential to the national interest." (The certification was required prior to the production of lethal binary chemical munitions by Sec. 818 of Public Law 94-106. The Department of Defense disclosed that its FY83 budget contains \$30 million for building chemical

weapons.)

- 01/29/82 -- The State Department released a report on an analysis of victims of an alleged chemical attack in Kampuchea. (According to the report, two of the nine blood samples showed preliminary evidence of the presence of a metabolite of T2, a trichothecene poison. Other indications of trichothecene exposure were also noted.)
- 12/09/81 -- The UN General Assembly, despite Soviet objections, voted to continue an investigation into charges of chemical and toxin warfare in Afghanistan and southeast Asia. (Only the Soviet Union and its closest allies opposed the extension, which was approved by a vote of 86-20, with 34 abstentions.)
- 11/25/81 -- The United States urged the United Nations to broaden the General Assembly-sponsored investigation into allegations of the use of toxin weapons in Laos, Kampuchea, and Afghanistan. (A preliminary report by the four-man UN panel said that they had been "unable to reach a final conclusion as to whether or not chemical warfare agents had been used." But the panel had been denied entry into any of the countries where these agents had been reported.)
- 09/14/81 -- Walter J. Stoessel, Under Secretary of State for Political Affairs, released further information of the physical evidence with respect to the use of lethal toxin weapons in southeast Asia.
- 09/13/81 -- Secretary of State Haig, speaking in Berlin, announced that the United States had physical evidence of the use of chemical and toxin weapons in southeast Asia.
- 08/07/80 -- The Department of State released a 124-page compendium of reports and allegations on the use of chemical and toxin weapons in Afghanistan and southeast Asia. (An update of this compendium was released in March 1981.)