What Policy for Nerve Gas? *Matthew Meselson*

During World War II Germany produced, but did not use, a new super-toxic class of lethal chemicals, the nerve gases. During the 1950s and 1960s the United States produced thousands of tons of nerve gas and

stockpiled nerve gas weapons designed for tactical battlefield use. These are stored mainly in the continental United States, with a lesser quantity deployed in Europe in the Federal Republic of Germany. We have no reliable estimate of the size or the composition of the Soviet poison gas stockpile, although the USSR and a number of other countries could readily produce nerve gas.

Lethal chemicals are generally considered to be weapons of mass destruction. For example, under not uncommon meteorological conditions a single light bomber could deliver enough nerve gas to cause a high percentage of fatalities over a downwind area of several square miles. But despite the potential of nerve gas and certain other lethal chemicals for inflicting mass casualties, quite effective protection can be provided for combat troops, in the form of modern gas masks, protective clothing, vehicle air conditioners, and other equipment. Although an initial resort to nerve gas would inflict heavy casualties on military units if caught off guard, its subsequent use against troops with modern protective equipment would be much less effective, a fact of potential importance for chemical arms control.

The principal treaty dealing with chemical weapons is the Geneva Protocol of 1925. All militarily important nations are parties, including the members of NATO, the Warsaw Pact, and the People's Republic of China. After nearly fifty years of alternating controversy and inattention, the United States has finally become a party to the Protocol, following its ratification by President Ford on January 22, 1975, with the undivided support of the Senate. The Protocol is, in effect, a no-first-use agreement. It *does not* prohibit stockpiling of chemical weapons or reprisal in kind against a violator. However, the United States and USSR, as parties to the Biological Weapons Convention of 1972, have undertaken, under Article IX, to negotiate effective measures for prohibiting the development, production and possession of chemical weapons of war. At Moscow in July 1974, President Nixon and Secretary Leonid Brezhnev declared their agreement to consider a joint initiative at the Conference of the Committee on Disarmament in Geneva to obtain an international convention eliminating the most lethal chemical weapons. This was reaffirmed by President Ford and Secretary Brezhnev at Vladivostok in November 1974. However, no such initiative has yet been made nor has the United States put forward any proposals of its own.

Meanwhile the Department of Defense has renewed its request, voted down in the House of Representatives in 1974, for funds to build a facility to produce a new generation of nerve gas weapons, safer to handle and store, called binaries. Only $8.8 million is being sought for the new facility, but over the course of several years it would cost approximately a billion dollars to produce binary nerve gas weapons to replace the existing stockpile and perhaps three quarters of a billion more

Biological Weapons Disarmament

The unilateral renunciation of biological warfare by the United States in 1969 and the entry into force of the Biological Weapons Convention of 1972 have essentially ended apprehension that the world might be drifting into the military acceptance and possibly even the use of disease as a weapon of war.

During the 1950s and the 1960s, the United States developed and produced anti-personnel biological weapons utilizing disease-causing agents such as anthrax and Venezuelan equine encephalitis and anti-crop agents such as rice blast and wheat rust. Whether other nations have produced or possess such weapons is unknown.

However, after an extensive review prompted in part by public and congressional questioning, President Nixon and his advisors concluded that biological weapons serve no important U.S. military requirement and that their use would risk massive and unpredictable consequences. On November 25, 1969, the President announced that the United States would destroy its biological weapons stockpile and renounce the use of biological weapons. On February 14, 1970, this renunciation was extended to toxins, the toxic substances made by living organisms and the synthetic counterparts of such substances. The U.S. stocks of biological weapons, including toxins, have been destroyed. The biological weapons laboratories at Fort Detrick, Maryland, have been converted to cancer research and the former production plant at Pine Bluff, Arkansas, is now a testing center for the Food and Drug Administration.

On January 22, 1975, President Ford, with unanimous support of the Senate, ratified the Biological Weapons Convention of 1972, a treaty proposed by the United Kingdom and negotiated at the Conference of the Committee on Disarmament at Geneva. The convention prohibits the development, production and stockpiling of biological weapons. Following our example in renouncing biological weapons, more than one hundred countries have signed the convention, which came into force on March 26, 1975, when instruments of ratification were exchanged by the United States, Great Britain and the Soviet Union. Under the terms of the convention all biological agents, weapons and delivery systems are to be destroyed within nine months from this date. Neither France nor the People's Republic of China is among the parties, although France has enacted a domestic law making biological warfare preparations a crime. The parties did not consider it essential to require verification provisions beyond a pledge to cooperate with any investigation the United Nations Security Council may initiate on the basis of a complaint from a party and an undertaking to facilitate scientific exchange in bacteriology and related fields. Still, the renunciation of biological warfare by the United States and the entry into force of the convention would seem to make biological warfare extremely unlikely.

to dispose of the latter. For two years the Defense Department has testified before Congress in favor of binaries, while the director of the U.S. Arms Control and Disarmament Agency has testified against. The case for buying binaries is not that they are more effective on the battlefield—in fact they are not. Rather, the arguments for and against them are largely psychological and political. Advocates consider that their safety features will overcome public opposition to transportation and forward deployment of nerve gas weapons. Critics argue that a major new round of chemical weapons procurement will spoil chances for negotiating a chemical arms control treaty and will stimulate the international proliferation of chemical weapons.

While the dispute over binaries has occupied center stage, the present situation represents a crossroads of a more fundamental nature. Broadly defined, the choice is between (1) replacement of the existing stockpile with binaries or at least the retention of the current inventory, possibly with some modifications to suit newer types of aircraft and artillery, or (2) renunciation of lethal chemical weapons, either through international agreement or unilaterally, seeking a treaty afterwards.

It is not maintained that chemical weapons are needed to deter war itself. Our conventional and nuclear forces serve that role. Neither do senior officials consider that we would have any important incentive to be the first to attack with gas should a major war occur. Stated U.S. policy has long been not to start poison gas warfare, a doctrine further solidified by U.S. ratification of the Geneva Protocol. Rather, it is argued that the prospect of retaliation in kind would contribute importantly to deterring the Soviets from using the nerve gas that they must be assumed to possess and that, if such deterrence fails, our retaliation could enable us to defend Europe without necessitating immediate resort to nuclear weapons. The rationale for these beliefs rests not on the direct casualty-producing capability of nerve gas, which would be minimized by the use of protective equipment, but rather on the reduction in fighting efficiency that results from wearing masks and suits and taking other protective measures. It is contended that the ability to retaliate in kind in the combat zone and in rear support areas would allow us to impose on the Soviets the same protective posture they impose on us, greatly reducing the advantages to them of any protracted use of gas. However, it must be admitted that our retaliatory capability does nothing to reduce the advantage to the Soviets inherent in the initial casualties and confusion that could be inflicted by a surprise gas attack on our forces.

But technical military considerations aside, the case for having nerve gas rests on psychological assumptions that go to the heart of NATO defense doctrine. Would our nerve gas deter Soviet first use or would it instead encourage them to think at a desperate moment that they might use nerve gas to break a battlefield deadlock without provoking a nuclear

response? And if NATO is attacked with nerve gas, would our retaliation in kind help to gain time and promote the sanity needed to terminate hostilities? Or would it so complicate the calculations of both sides as to preclude the clarity of analysis and communication needed to stop a war short of an all-out nuclear exchange? Indeed, must not nuclear weapons inevitably come rapidly into play in response to any determined Soviet thrust into Europe, thereby completely overshadowing the question of gas warfare?

It is generally agreed that in addition to the cost in resources, there are other costs of stockpiling nerve gas and having an active nerve gas program. Today, no non-nuclear nation is thought to have stockpiled nerve gas weapons. It is very much in our interest to preserve this situation. Our great wealth allows us to expend enormous quantities of conventional munitions in tactical war and to maintain large strategic and tactical nuclear forces. Very few countries even approach this capability. However, nerve gas weapons have the potential of wide area coverage at relatively low cost. Their proliferation would greatly enhance the capability of smaller countries and perhaps even of dissident paramilitary groups for threat, harassment, and destruction. The United States and the Soviet Union set the pace and direction of military developments throughout the world. The more interest we display in nerve gas weapons, the more we pioneer their technology and invest in them, the more lesser military powers are likely to question their case for refraining from acquiring nerve gas weapons of their own.

On a different level of concern, the rapid and accelerating advancement of biochemistry and the biological sciences is inevitably leading to a profound ability to manipulate life processes for good or ill. Over the long run, it may be very important to create an international consensus that such knowledge is not to be exploited for military purposes. The possession of nerve gas weapons maintains institutional commitments to such exploitation. In contrast, if nerve gas can be eliminated we would be free to create an atmosphere in which our increasing knowledge of life processes is directed solely to man's benefit and in which research is conducted under the more or less open public scrutiny that is probably necessary to insure such beneficial use. *(April 1975)*