



Can We Prevent the Use of Chemical Weapons by Terrorists?

Editor's Introduction

On March 20, 1995 a poisonous gas -- later determined to be the lethal nerve agent sarin -- filled Tokyo subway stations at rush hour, killing eight people out right and injuring thousands of others, many of them fatally. This was the second incident involving sarin in Japan in less than a year. Within hours of the attack, Japanese authorities uncovered evidence pointing to an apocalyptic religious sect, Aum Shinrikyo, and its leader, Shoko Asahara. Substantial amounts of chemicals and equipment used in the manufacture of sarin were found on Aum property, and Asahara and other sect leaders were arrested and are awaiting trial.

The sarin attacks in Japan, and subsequent incidents involving other lethal chemicals, have raised profound questions about the potential for chemical and biological terrorism. Are the components of chemical and biological weapons too easily available to individuals and groups with violent agendas? Can treaties and enforcement mechanisms at the state level prevent such weapons from falling into the hands of terrorists? Is anyone safe any longer from the threat of indiscriminate attack by home-made weapons of mass destruction?

M&GS asked five experts in the field of chemical and biological weapons to address the medical and policy consequences of the sarin attack. Their commentaries follow.

The Chemical Weapons Convention as a Tool for Combating Chemical Terrorism

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There are a number of specific mechanisms by which the Chemical Weapons Convention (CWC), ably summarized by Dr. Sidel [below], can help to prevent chemical terrorism of the kind perpetrated in Tokyo earlier this year.

The CWC is not principally focused on terrorist activities, but rather on the behavior of states. Many of the Convention's provisions, however, are also likely to be very useful tools for preventing the use or threat of use of chemical weapons by sub-state entities -- i.e., chemical terrorism. The great majority of what one could expect states to be willing

to accept in a treaty on chemical terrorism already appears in the CWC.

Before discussing the benefits of the treaty, two comments may be in order. First, the CWC will not work alone, but rather as a complement to improved national law enforcement efforts and intelligence collection. Second, some of the mechanisms described below may seem to be overly abstract or hypothetical. In fact, very often, little international machinery is required to create and enforce international law; in the anarchic relations between states, a fairly weak organizing force can often bring order out of chaos.

The following are the major elements of the CWC applicable to chemical terrorism:

The Convention requires states to enact laws criminalizing the production of or attempted production of chemical weapons.

Many states do not now have laws criminalizing the production of chemical weapons. Japan, for instance, did not have such a law before the recent terrorist incident there. The CWC specifically requires states to enact laws criminalizing the production, stockpiling, transfer, and use of chemical weapons by any persons or corporations on their territory or subject to their jurisdiction (including persons holding their citizenship, worldwide). These laws will make it much easier for law enforcement officials to investigate and punish terrorist activity at the earliest possible stage, including any attempts by terrorists to manufacture chemical weapons. The CWC also requires states to provide copies of their laws to one another, permitting them to learn from one another and to point out weaknesses in one another's implementing laws.

The Convention requires states to control the production of chemical weapons.

The CWC requires governments to collect data on a substantial number of chemical weapons and precursors (listed in the CWC's Schedules of Chemicals), providing a ready made source of data for national anti-terrorist efforts. More important, the Convention also requires states to prevent any production of chemical weapons on their territory. States may implement this requirement in whatever way they wish. Possible ways of doing so include (in roughly increasing order of stringency): improving customs and law enforcement efforts; conducting an industry outreach program; imposing reporting requirements on additional chemicals or precursors; and imposing stricter forms of regulation on some chemicals, such as requiring citizens to obtain a license to purchase them.

Chemical industries will be alerted to the danger that their products may be misused.

Some, but not all, chemical industries in some developed countries are already aware

of the need to be cautious in selling chemicals that can be used to produce chemical weapons, in the wake of Iraq's success in purchasing chemical weapons precursors. All chemical firms, left to their own devices, are likely to pay less attention to sales of chemicals in small quantities, or of chemicals not intended for export. The CWC's reporting requirements, combined with national programs of industry outreach, will help to alert firms to the need to use caution in selling precursor chemicals.

National and international agencies will be created that can serve as resources in the fight against terrorism.

The CWC establishes a new international agency, the Organization for the Prohibition of Chemical Weapons (OPCW), whose technical secretariat is likely to become a significant source of expertise on chemical weapons and the international chemical industry. The OPCW could be of considerable help to states with questions about the threat of chemical terrorism. Moreover, the Convention requires that states establish or designate a national authority responsible for communications with the Organization. These national agencies should become a valuable resource for national law enforcement authorities, because of their familiarity with international resources on chemical weapons issues and their knowledge of their own nation's chemical industry.

States will be discouraged from assisting or protecting chemical terrorists.

The CWC will make it more difficult for states to aid chemical terrorists and their supporters. First, the treaty will reinforce the international norm against possession or use of chemical weapons, and so expose states that assist terrorists to severe international criticism. Second, it will require states to enact legislation criminalizing attempts to produce chemical weapons. This will remove the excuse that a person who is being sought for crimes elsewhere cannot be extradited if he or she has not committed a crime under the laws of the state in which he or she has taken shelter. (Croatia has recently made precisely this claim in refusing to extradite to the U.S. a person wanted for assisting Iran's alleged chemical weapons program.) Third, in cases in which a specific site is believed to have been used for terrorist purposes, the Convention's challenge inspection provisions may be helpful in clarifying the facts. Finally, the OPCW will serve as a forum in which to coordinate pressure on misbehaving states and (if necessary) to initiate the process of imposing sanctions.

The CWC will assist states that are the victims of actual or threatened chemical terrorist attacks.

The CWC provides for humanitarian

and technical assistance to states that have been the victims of actual or threatened use of chemical weapons. These provisions may be very useful in cases of actual or threatened chemical terrorism, especially for states that do not already have well developed capabilities to detect chemical weapons, defend against them, decontaminate affected areas, or treat victims of chemical attack.

National stockpiles of chemical weapons that might otherwise fall into the hands of terrorists will be eliminated.

The U.S. and Russia both have acknowledged stockpiles of chemical weapons, and some states that have signed the CWC are thought to have unacknowledged chemical weapons capabilities. The Convention requires that these stockpiles be destroyed; until this process is complete, they will be under international supervision, reducing the danger of diversion.

The CWC provides a forum for discussing chemical terrorism-related problems.

The OPCW's components will include an executive council that can address problems on an emergency basis, as well as annual meetings of the Conference of Parties at which the treaty's operation can be reviewed and adjusted. The OPCW will also have a scientific advisory board capable of producing technical studies of the CWC's operation. Finally, the parties to the CWC will meet periodically for special review conferences, at which they can consider the treaty's effectiveness and adapt it to new needs. Taken together, these bodies should help ensure that the OCPW is a living institution, responsive to new problems and challenges. The history of international law making contains many cases (most notably that of the ozone treaty, the Montreal Protocol) in which treaties have been strengthened over time thanks to similar processes of oversight and improvement.



Implementing the Chemical Weapons Convention

Victor W. Sidel, MD

As R. Justin Smith makes clear, the use of chemical weapons in the Tokyo subway might well have been prevented if Japan and the other nations of the world had moved more expeditiously to bring into effect the new international convention banning chemical weapons. While there had been international agreements banning the use of chemical weapons in war for almost a century, including the 1899 Hague Declaration and the 1925 Geneva Protocol, these agreements lacked effective enforcement provisions [1,2]. In response to the worldwide revulsion against the use of chemical weapons, the 40-nation Conference on Disarmament in Geneva, after lengthy negotiations, produced a strong Chemical Weapons Convention (CWC) that was opened for signature by the world's nations in Paris in January 1993.

The CWC, when ratified by 65 nations, will ban the development, production, acquisition, stockpiling, transfer, and use of chemical weapons. It will establish an Organization for the Prohibition of Chemical weapons (OPCW) that will have broad powers, including the conduct of challenge inspections to ensure that all nations are complying with the CWC. Even more important in the prevention of the use of chemical weapons within nations is the requirement that each ratifying nation have:

1. a regulatory authority to ensure that no activity prohibited by the CWC will take place within its national territory;
2. national legislation prohibiting the development, production, or possession of chemical weapons within its territory; and
3. national legislation providing criminal penalties for violations.

If Japan had had in effect these intra-national measures required by the CWC, its government would have had the authority to block the acquisition of the materials necessary for the production of nerve agents and the authority to determine whether nerve agents were being produced. The suspected small scale use of the nerve agent prior to its use in the Tokyo subway system could have triggered intensive investigations, which were difficult to mount because Japan had no law banning the production of chemical weapons.

Since it is important symbolically that Japan ratify the CWC promptly because it is

one of the few nations that has used chemical weapons since World War I [3], it is gratifying to note that Japan has in fact completed most of the domestic processes for ratifying the CWC. It has been approved by both houses of the Diet, and awaits only the signature of the Emperor. Apparently there has been some delay, based on a desire to ensure that the details of implementation are correct. Japan has, however, already enacted implementing legislation for the treaty. Thus, the production of chemical weapons has now been criminalized in Japan.

As of June 1, 1995 a total of 159 nations (including Japan) had signed the CWC. Among the non-signers many, such as Vanuatu and Barbados, are small island nations with no chemical industry and little or no potential for production of chemical weapons. Only three groups of nations that may have chemical weapons production potential are non-signers: the former Yugoslav Republics of Bosnia-Herzegovina and Macedonia and the former Soviet Republic of Uzbekistan; the mid-East nations of Iraq, Jordan, Lebanon, Egypt, and Libya; and the Democratic People's Republic of Korea.

As of August 29, 1995 a total of 35 nations had ratified the CWC. The five permanent members of the UN Security Council all signed the CWC soon after its opening for signature in 1993, but only one -- France in March 1995 -- has deposited its instrument of ratification with the Secretary-General of the United Nations, the convention's depository. The two largest possessors of chemical weapons, and the only declared possessors, the United States and Russia, have yet to ratify. Under U.S. law, ratification by the Senate is required; while the Clinton Administration has submitted the treaty for ratification, the U.S. Senate has been exceptionally slow in considering the CWC and favorable action during the current Congress is not assured. In Russia, the situation is clouded by the parliamentary elections scheduled for December 1995, the lack of funds to construct and operate chemical weapons demilitarization facilities, and public opposition to placement of these facilities in their community.

China is reported to be very likely to ratify the CWC if the U.S. and Russia do, because the Convention will require Japan to dispose of the chemical weapons it abandoned in China in World War II, a step of great practical and symbolic value. The United Kingdom will almost certainly ratify when the U.S. and Russia do, if not before. The U.S. and Russia are therefore the major stumbling blocks to great-power ratification.

In the meantime, the Preparatory Commission for the CWC is functioning,

with a provisional Technical Secretariat of 120 people from 40 countries in place. It is expected that when the CWC enters into force the OPCW will comprise about 400 people, with more than half working in the Verification Division, many as inspectors. A training program for inspectors has already been designed; procedures to protect confidential business and national security information -- issues of great concern to the chemical industry and to a number of governments -- are also being prepared [4].

The task for physicians and others through out the world, working with the national affiliates of the International Physicians for the Prevention of Nuclear War (IPPNW), other organizations, or as individuals, is to urge their governments to:

1. ratify the CWC;
2. install the intra-national authority and enabling legislation required by the CWC;
3. destroy their chemical weapons stockpiles if any exist; and
4. provide funds to assist other nations in demilitarizing their stockpiles.

A worldwide effort to accomplish these tasks could lead to swift ratification of the CWC by the required additional 30 nations and to the CWC entering into force before mid-1997, when the new building being constructed in the Hague as OPCW headquarters is scheduled for completion. Two landmark events might then coincide in The Hague in the years just before 1999:

- 1) a decision by the International Court of Justice that the use or threat of use of nuclear weapons would be illegal under international law and
 - 2) the entry into force of the CWC.
- This would truly be an occasion for worldwide celebration in commemoration of the centenary of the Hague Declaration.

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The Choice is Between Arms Control and Abolition

Meryl Nass, MD

Why worry about chemical weapons? Probably because they lend themselves to producing large numbers of casualties -- on the battlefield or inside of homes -- with relative ease, and have now demonstrated to the world their utility in terrorism as well. Is it possible to contain the risks of their use through personal protective measures, or through negotiated arms control treaties? And if not, how can safety from these weapons of mass destruction be achieved?

Reviewing the medical treatments and prophylactic regimens used for nerve gas in the recent past, it becomes clear that even well trained soldiers equipped with atropine syringes, gas masks, and MOPP suits were protected in very limited ways (and may even have been harmed by the preventive regimen) [1,2,3,4,5]. For one thing, effective gear can be worn comfortably for only brief periods, yet various nerve gases may remain toxic in the environment for weeks. Furthermore, the toxicity of nerve gas is so great (the LD50 may be less than one milligram per person absorbed through the skin, inhaled, or ingested) that even effective gear might, in certain circumstances, not produce safety for the wearer. And finally, there is no effective medical response to mass casualties from "battlefield doses" of nerve gas, though high level ICU care may save the lives of some victims.

Proliferation of chemical weapons, a reality before the demise of the Soviet Union, is now a much greater problem. At least 20 nations are said to possess a chemical warfare capability [6,7]. Yet the Chemical Weapons Convention (CWC), a strong treaty banning these weapons that was 20 years in the making, may well fail to be ratified by the U.S. Senate and has only been ratified by 32 of the 159 nations that signed it two-and-a-half years ago. I believe this puts the threat into a broader perspective.

Our leaders seem to have no burning desire actually to destroy existing stocks and to stop the flow of such weapons; instead, they seek control of the weapons and their movement. Since Americans have faced American-made weapons in several recent military actions, the conceit that the current level of control, achieved through secret deals, alliances, and national intelligence, can provide safety needs to be examined and soundly dismissed.

An example: It has been widely known

that South Africa had an active program in chemical and biological warfare (CBW) research and development over a period of 30 years [8]. Suddenly, with President Mandela in power, the issue gained impressive media attention: fears were expressed that South Africa's CBW researchers were being recruited by Libya [9]. Similar questions have been raised about the CBW scientists of the former Soviet Union and Iraq. And Japan's experience with Aum Shinrikyo makes it perfectly clear that CBW technologies are accessible to inexperienced scientists who take an interest in the field. Aum developed not only sarin, but cyanide [10] and other weapons for use in attacks on mass targets. The reality is that these scientists and/or their knowledge have been accessible on a wider scale for years.

There is an advantage to nerve gases that may help explain the hesitation some feel in banning them and destroying the many thousands of tons that remain stockpiled. Like the neutron bomb, nerve gas kills people and animals, but leaves the material wealth of a nation intact. It dissipates naturally, causing no injury to subsequent occupiers of areas that were attacked.

Let's face it. While extraction of fissionable materials requires large factories that are detectable by satellite, chemical and biological weapons can be made in basements, using materials that until now have been easily accessible, as Leonard Cole makes frighteningly clear [see below]. The technology is relatively simple and has already proliferated.

The creation, ownership, and movement of weapons of mass destruction cannot be effectively controlled today and, in an uncertain future, things can only get further out of control. The present world climate, in which ethnic violence is growing, and social and economic upheaval are at high levels around the globe, promises to offer many opportunities for weapons of mass destruction to see service. Only in retrospect is it apparent how the Cold War standoff tightly regulated world affairs and offered us 45 years of overall stability, while it simultaneously supported burgeoning weapons development, production, and proliferation throughout the world.

What can be done to gain as much safety as possible? Nations must demonstrate their resolve to tighten up the current situation by signing and ratifying the treaties that have been negotiated and by strengthening treaties, such as the Biological Weapons Convention, that lack investigation and enforcement mechanisms. Countries should pursue openness and work toward confidence-building measures -- avoiding obstructive or clandestine behavior vis-a-vis

these weapons -- in order to bolster trust that the treaties will be taken seriously.

But even ratification and enforcement of existing treaties is not enough. What about states that do not become parties to the treaties? What about existing stores, some of which are hidden? And what about nations that disregard their treaty obligations, which appears to be a common enough event today? In my view even the tightest controls are ultimately inadequate: the weapons themselves must be gotten rid of. Safety can only be achieved through total eradication of weapons of mass destruction. Treaty ratification, of course, will be a necessary first step. But then all nations must join together to empower the abolition process. In the case of the CWC, the smaller, less powerful nations are not interested in pursuing ratification while the U.S. and the former Soviet states debate whether they really want to give up these weapons. But when they see serious steps being taken by the major powers, and appreciate that their own security will be increased by treaty compliance, they will follow along and ratify the treaty.

Just so, the major powers must demonstrate a commitment to abolishing nuclear, biological, and chemical weapons, and eschew the development of other weapons -- conventional or unconventional -- with great destructive force. This is the only way forward, the only way out of the dangerous and devastatingly expensive predicament in which humanity is mired. Can we show the resolve, creativity, and faith in humankind to choose this most sensible path?

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At Home With Chemical And Biological Weapons

Leonard A. Cole, PhD

The sarin nerve gas attack in the Tokyo subway system created headlines around the world. Suddenly people everywhere felt vulnerable. But the possibility of chemical and biological terrorism has long been worrisome, in part because such weapons are technically easy to make.

Sarin and other chemical agents can be produced through a variety of methods that have been reported in the open literature. To synthesize sarin, one approach involves raw materials that are familiar to any chemist.

Edward Naidus recently retired as a technical director at American Cyanamid. He frequently worked with sarin's precursor chemicals during his 50-year career -- they are used throughout the industry, he said. "You could probably get them through a supply-house catalogue. You'd just order them on stationery with a company or university letterhead." Two of the materials, isopropyl alcohol and methyl alcohol, can be purchased from a local drugstore.

But synthesizing sarin is dangerous. Its appeal as a weapon derives from its remarkable potency. A single drop can kill within minutes by exposure to the skin or inhaling the vapor. Moreover, clothing offers scant protection, since the agent can penetrate ordinary outerwear.

Large scale manufacturing of sarin therefore is done in a closed system. But what if someone wanted to produce a pound or two at home? For a chemist, that would not be difficult, virtually all knowledgeable people agree.

The vessels to mix the chemicals would have to be noncorrosive -- pyrex glass would do. A venting system to draw toxic fumes out of the work area would be important. And to ensure survival, the operator could wear protective gear, much like a soldier dressed for gas war. Information about when to add each chemical, and at what temperature, has been in the scientific literature for nearly 50 years.

Attaining purity may be difficult in a home laboratory. But as the cult Aum Shinrikyo showed in the Tokyo attack, even a reputedly impure agent can cause terrible harm.

To make a biological weapon would also be easy. During a recent conversation Nancy Connell, a microbiologist at the University of Medicine and Dentistry in New Jersey, told me one needs seed bacteria. An organism such as *Bacillus anthracis*, the cause of anthrax, can be obtained from supply firms. Outside firms

also provide culture media to enhance bacterial reproduction. But bacteria can grow in less particular media as well.

Could the anthrax bacillus, long considered a likely biological weapon, be grown at home? "I wouldn't be surprised," Connell said. Food that contains amino acids and other nutrients might be effective media. "Any source of protein would do," Connell believes. The at-home media would first have to be autoclaved to kill other organisms that would compete with the anthrax bacilli. This could be done with a pressure cooker.

By dividing every 20 minutes, a single bacterium can give rise to a billion more in 10 hours. Thus, a few microorganisms can multiply to become a formidable arsenal in a matter of days. The bacteria may be isolated by washing away the culture media with water. Deprived of the media, anthrax bacilli will sporulate. That is, they develop a hard coating in which they can remain dormant for years.

If the spores reach a warm moist environment, like human lungs, they revert to active vegetative states. They then become devastatingly infective. Inhaling a few thousand anthrax spores can kill someone who is not quickly treated with antibiotics.

Making biological weapons in a kitchen would be less safe than in a laboratory where air is drawn from the work space. But wearing a protective mask could help avoid inhalation of the organisms.

While Connell and I discussed these techniques we were joined by her colleague, Roswell Coles, who has worked extensively with *Bacillus anthracis* and other pathogens. He mentions several easy-to-grow organisms that might be effective weapons.

A quart of toxin from *Clostridium botulinum* could poison a water reservoir. The toxin is so powerful that a few sips of the water will cause death. But Coles said chlorine in the purification system would destroy the toxin before it reached anyone's faucet. A better organism-weapon, he conjectured, might be *Yersinia pestis*, which causes plague.

These grim observations concluded with embarrassed smiles. The conversation might have been the same, we realized, if we had been terrorists planning to use biological weapons.

If biological and chemical agents are easy to make, why have terrorists largely avoided their use? In part because making them requires some expertise, and because guns and bombs are more familiar. But no less important, a moral opprobrium has long attached to the use of chemical and especially biological weapons. The 1972 treaty that bans biological weapons describes them as

"repugnant to the conscience of mankind."

Some terrorists share this sense of repugnance. Others recognize that using biological or chemical agents will lose sympathy for their cause. Still others, like Aum, apparently do not care. But Aum's recent efforts can only have been encouraged by events in the 1980s that weakened the norm against the use of these weapons. As the world watched in silence, Iraq used chemical weapons against Iran, and more nations started chemical and biological arms programs.

The 1993 Chemical Weapons Convention reaffirms the norm. But the treaty awaits ratification by 65 states before it enters into force. The U.S. has not yet ratified, and thus has not joined in this most forceful expression that these weapons are illegitimate. On the evidence of history, a worldwide sense of illegitimacy is central to curbing their use.

The Tokyo Sarin Attack: How Could It Have Happened?

Kenjiro Yokoro, MD

A bloodcurdling incident brought about by a new religious sect, Aum Shinrikyo (Sublime Truth), frightened not only Japanese citizens but also the international community. Although the sect founder, Shoko Asahara, and the majority of the leadership of the group have been apprehended by the police, the fears have not subsided, in part because of the incredible depth of the incident and also because several radical followers of Aum, possibly carrying sarin with them, are still on the run.

As this article was being written, the preposterous projects of this sect were being disclosed one after another and were being reported sensationally by the media day and night. People have remained glued to their TV sets for the last several months. The Japanese government, which faces difficult domestic and international problems that must be managed, is obliged to spare time for the Aum incident, with the result that peace and order in Japan have been seriously disturbed.

The police investigation into the Aum incident has been delayed because of a bitter experience resulting from the investigation of another religious sect before World War II, after which the authorities were criticized for abridging freedom of religion. Now there is a contrary criticism: that if action had been taken sooner against Shoko Asahara and Aum, these dreadful crimes might have been prevented.

What were the origins of Aum and its criminal activities? After some earlier political ambitions were frustrated, Asahara shifted his interests toward founding a religious sect, starting with a small number of followers in 1986. Aum was approved as an ecclesiastical corporation by the government in Tokyo in 1989. Asahara successfully collected followers and the sect expanded rapidly in a short period of time, eventually numbering about 10,000, of whom about 1,000 renounced the world and abandoned all personal properties, donating them compulsorily to Aum.

The laws governing ecclesiastical corporations emphasize protection of religious freedoms but do little to regulate their conduct. With the increase in followers, Asahara came to harbor a belief that he ranked with Buddha and Jesus Christ, and he set out to found a Holy Aum Empire. To achieve this preposterous goal, Asahara eagerly advocated an eschatological war and is now alleged

to have ordered reckless and cruel criminal offenses, culminating in the sarin attack in the Tokyo subways, which indiscriminately killed many innocent people and injured thousands of others. Kidnapping, illegal detention, and torture were apparently carried out by sect members as an everyday experience, augmenting Aum's isolation and ferocity. Followers who attempted to leave the sect were allegedly lynched by other sect members at Asahara's orders.

There must have been various motivations for this unusual incident. As a medical scientist, I would like to point out a sobering fact. It is characteristic of this sect that more than half of its followers are in their twenties. Among them are graduates of leading state and private universities, with excellent records in the fields of natural or medical science. Why were young people with such great promise attracted to Asahara and what drove them to commit such serious crimes, apparently without conscience? What led them to be brainwashed and subordinated to such a man?

Despite the superior economic achievements of Japan, university budgets -- especially those at the state universities -- have been insufficient and conditions for the study of natural sciences have been poor. This situation can create a dangerous pitfall for brilliant, but naive, youths who have little social discipline and have not yet developed mature, balanced personalities. Such people can easily be trapped by the honeyed words of a cult leader such as Asahara. By leading

them to commit antisocial crimes and by promoting them through the hierarchical ranks of the sect, Asahara took them across a forbidden bridge over which they could never return.

Quite recently it became evident that in addition to the sarin attack, Aum members were also responsible for sniping at the chief of the National Police Agency, attempting to release murderous hydrocyanic gas in Tokyo, and sending a parcel rigged with explosives to the governor of Tokyo, seriously wounding a member of his staff. More surprising, it now appears they have funded their violent acts by manufacturing and smuggling narcotics and stimulants.

Nothing about the Aum incident has been settled. The criminal cases must be tried, yet an even more troubling question is how to bring those innocent followers, especially individuals who have renounced the world, back into society.

The fact that the Aum incident occurred soon after the Kobe-Osaka earthquake has left the Japanese people feeling uncertain about their fortunes. Despite economic prosperity, there are concerns that Japan has lost its identity -- that worthless politicians have replaced statesmen upon whom we can rely for leadership. Under these circumstances, people seem to be groping for the future.

Only one thing is clear: this horrible incident must be contained as a singularity and must not be allowed to trigger widespread chemical, biological, or nuclear terrorism. ♣