

The efforts of WHO and Pugwash to eliminate chemical and biological weapons — a memoir

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The World Health Organization and the Pugwash Conferences on Science and World Affairs (Nobel Peace Prize 1995) have been involved in questions concerning chemical and biological arms since the early 1950s. This memoir reviews a number of milestones in the efforts of these organizations to achieve the elimination of these weapons through international treaties effectively monitored and enforced for adherence to their provisions. It also highlights a number of outstanding personalities who were involved in the efforts to establish and implement the two major treaties now in effect, the Biological Weapons Convention of 1972 and the Chemical Weapons Convention of 1993.

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Introduction

Growing up in a large American city — Philadelphia — in the 1920s, one could not but observe the ravages of mustard and chlorine gases among soldiers who had served in France during the First World War. The gaunt faces and incessant coughing of those veterans as they trudged along in commemorative parades remain vividly in my memory. Later, in the mid-1930s, newspapers displayed graphic pictures of the havoc wrought by the use of mustard gas by Italian forces in Ethiopia. During the same era college courses in political science referred to the Geneva Protocol of 1925 prohibiting the use of bacteriological and chemical weapons. All these events made a strong impression and sensitized me to the issues surrounding those weapons.

In the early 1950s, I was a staff member of the World Health Organization and later in that decade I became actively involved in the problems of chemical and biological weapons (CBW) at the Third Pugwash Conference, in Austria (1). This involvement with both WHO and Pugwash² has continued up to the present. The contributions of the two organizations to the elimination of these weapons of mass

destruction will be highlighted here in the form of a memoir recalling some of the outstanding personalities involved.

Alleged use of biological weapons in the Korean War

In the early 1950s as a microbiologist-epidemiologist in the Division of Communicable Diseases (DCD) of WHO, my attention was drawn to the issue of biological weapons (BW) when, during the Korean War, China and the Democratic People's Republic of Korea accused UN forces under USA leadership of using BW (2). This would have been a serious violation of the Geneva Protocol of 1925 (3), which had been ratified by a number of countries supporting the UN forces (the United States did not ratify the Protocol until 1975). These accusations placed the UN and the USA in an invidious position, particularly when "scientific" evidence was produced by China and the Democratic People's Republic of Korea. This so-called proof included photographs of infected rats and fleas presumed to be carrying the plague bacillus which, it was alleged, had been dropped from enemy aircraft along with other microbes such as anthrax, cholera, and the agents causing meningitis and encephalitis. Gruesome pictures of human victims were published along with claims supporting the accusations by some scientists of both Communist and non-Communist countries. The USA and allies in the UN forces rejected these charges vehemently and their own investigations indicated that the disease outbreaks were the result of existing endemic factors rather than of newly introduced microbial agents (2,3).

The responsible officer in WHO at that time was Assistant Director-General Sir Sahib Singh Sokhey, a former Major-General in the medical

¹ Director of the Geneva Pugwash Office, 69 rue de Lausanne, 1202 Geneva, Switzerland. He was Secretary-General of the Pugwash Conferences on Science and World Affairs from 1976 to 1988.

² Pugwash is the American Indian name of a lobster fishing village in Nova Scotia where the organization was first set up in 1957 with the purpose of bringing together knowledgeable scientists of the East and West to discuss the perils of weapons of mass destruction, with emphasis on nuclear weapons. In 1957 the Cold War was in full spate, and influential scientists on the two sides had practically no contact with each other. The founding conference of Pugwash in 1957 broke the ice, and succeeding conferences benefited greatly from participation of scientists from countries of radically different political beliefs. The first meeting and several subsequent ones were financed by Cyrus Eaton, a Canadian/American railroad magnate who was born in the village of Pugwash (1).

services of the British Army in India and a bacteriologist and expert on plague. Before joining WHO he had been Director of the Haffkine Institute in Bombay, which had developed and produced a vaccine against plague as well as other biological preparations. Sokhey's short stature, erect military bearing and rapid strides were noticeable at a distance.

The Director-General of WHO was Dr Brock Chisholm, a Canadian psychiatrist. He had served as a Brigadier and Director-General of Medical Services in the Canadian army during the Second World War, and thereby been involved in BW matters. A restrained and soft speaker, in meetings Chisholm spoke without notes and usually convinced his audience to accept without serious opposition the points he wished to make. He often recounted his role in spreading word to the Nazis through intelligence services that if they dared to use biological weapons against the Allies they would be subjected to terrible reprisals with similar weapons. This threat could have been partly responsible for Hitler's apparent reluctance to allow German scientists to develop these weapons. Within WHO there was some familiarity with BW, and with plague and cholera in particular, through Rudolph Pollitzer, a staff member who was a world-recognized authority on these diseases. He had lived in Harbin, China as a refugee during the Second World War with his Russian wife, and had studied both diseases at first hand.

Staff members of our Division were quietly told of plans for the possible formation of an investigating team if the UN asked for WHO assistance, as Chisholm had suggested to them. Sokhey, an advocate of health and other social practices in the Communist countries, was a strong supporter of a WHO team in which he would play a role. He believed the accusations of BW use could well be true, although other staff members in the Division, especially Pollitzer, insisted on the endemic character of plague and cholera in the combat areas. The International Red Cross had also made an offer to send an investigating team, but had attached stringent conditions to their offer. In the event, neither group was permitted to enter the affected territory, although the commanding general of US forces in the region had welcomed such an investigation. Thus the allegations of BW use by UN forces lost much of whatever credibility they may have had.

The 1959 Pugwash Conference and its connections with WHO

Some of the heads of Pugwash who were especially concerned about CBW, and who knew of my affiliation with WHO, invited me to attend the Third Pugwash Conference in Kitzbuhel and Vienna, Austria, in August 1958. In private discussions with them, I was asked to organize a conference around the subject the following year in Pugwash, Nova Scotia (1)

Brock Chisholm, by then retired from WHO, attended the Kitzbuhel Conference. He supported the idea of a Pugwash conference devoted solely to the

problem of CBW and hoped that WHO would be involved, even though unofficially (all participants attend Pugwash meetings in their personal capacity and not as representatives of institutions or states).

With less than a year to organize the CBW meeting in August 1959 it was not easy to secure participation of scientists who could deal with the challenges involved in a subject to which few of them had given much thought. Nevertheless, the conference proved successful. The 26 participants from eight countries included foremost scientists in the fields of biology, epidemiology and chemistry such as Brock Chisholm (Canada), André Lwoff (France), Michael Stoker (UK), Sven Gard (Sweden), Bentley Glass (USA), Hugo Muench (USA), Theodor Rosebury (USA), F.C. Bawden (UK), M. Dubinin, A.A. Imshenetsky, and A.A. Smorodintsev from the Soviet Union. Several of these distinguished scientists were active participants in WHO Expert Committees and other WHO meetings. As it happens, only a few copies of the conference proceedings are available, but the *Bulletin of the atomic scientists* published an extensive report on the meeting (4), probably because Eugene Rabinowich, Editor of the *Bulletin* was a member of the Pugwash Continuing Committee, now termed the Council. An excellent summary was prepared by Bentley Glass, a distinguished geneticist who had attended the meeting. The *Bulletin* report includes a lucid appraisal of the characteristics and potential of CBW which, for the most part, remains valid today, and concluded that transparency in biological and associated research would be the most effective protection against their hostile applications. The meeting in Pugwash was the first international gathering of scientists to assess CBW in depth, and its report was valuable in that it alerted and informed the general scientific community.

After the successful conference in 1959, the Pugwash Continuing Committee considered that the organization had an important contribution to make in continuing to assess and monitor the potential of nations to develop and deploy CBW. And so, between 1959 and 1998 it convened 42 meetings devoted entirely to biological and/or chemical weapons, with some 600 participants from 45 countries (5).

Promoting an international treaty on BW — 1969 and 1970

The unilateral renunciation of biological weapons (BW) by President Richard Nixon in 1969 and his renunciation of toxins in 1970 accelerated negotiations in the eight-nation UN Committee on Disarmament (later expanded to become the Conference on Disarmament). The aim was to develop an international treaty extending the scope of the Geneva Protocol of 1925, which barred the use of CBW (but not the possession). Thus, under the Protocol's provisions countries were allowed to continue research and stockpiling of these weapons, and a number of countries continued to do so after

becoming parties to the Protocol. Nixon's action was designed to promote the formulation and adoption of an international treaty which would outlaw BW development and production as well as use, and would require the destruction of weapon stockpiles³.

In 1966 the UN General Assembly called for the strict observance by all States of the principles and objectives of the Geneva Protocol of 1925, condemned all actions contrary to those objectives, and invited all States to accede to the Geneva Protocol (6). The Secretary General of the UN, U Thant, noted that in his opinion much more was needed. The UN General Assembly subsequently passed a resolution requesting the Secretary-General to prepare, with the assistance of qualified experts, a report on the subject in accordance with his recommendations and with the recommendation contained in the report of the Conference of the Eighteen-Nation Committee on Disarmament of 4 September 1968. U Thant then appointed a group of 14 experts to assist him in the preparation of such a report. A key person in this group, and its chairman, was Sir Solly Zuckerman (later Lord Zuckerman), Chief Scientific Adviser to the Government of the United Kingdom. Born in South Africa, Zuckerman had emigrated to England as a young scientist, studied medicine, and became well known for his research and writings on the reproductive physiology of primates.

Zuckerman was familiar with the work of the Pugwash Conferences on BW. He was also familiar with WHO, and we remained in continuous communication during my service as Scientific Adviser in WHO's Office of the Director-General, who at that time was Dr Marcolino Candau. Zuckerman contacted me to ask whether WHO could undertake to draft a detailed report concentrating on the technical aspects of BW to complement the UN report which would be concerned more with the general characteristics of the weapons. Dr Candau approved this arrangement, in which WHO was to be responsible for the technical, epidemiological and microbial aspects, and was to assess chemical weapons as well. Dr Candau appointed a group of 18 experts as consultants with myself as coordinator. We got under way at once, maintaining close contact with Zuckerman and with Bill Epstein, a Canadian lawyer appointed by U Thant to be the secretary of the United Nations group.

Zuckerman was a masterful draftsman and thoroughly versed in the scientific aspects of the subject. As a leader of the group he was persuasive, persistent and firm in his opinions. He commanded and earned high respect from his colleagues, and became an excellent channel for transmitting WHO and Pugwash views to the several British governments he served.

The consultants for both reports were of high calibre, with past and future Nobel laureates participating in the WHO group (Joshua Lederberg, Niels Jerne, André Lwoff). Other participants in the WHO effort included outstanding scientists in the fields of virology, bacteriology, epidemiology, mathematics, computer science, biochemistry, meteorology, psychiatry and population dynamics. The group was stimulated by the challenge and responded with enthusiasm. Our task was to determine the range of effects of attack with chemical and biological weapons in a range of scenarios — by air and water, on concentrated and sparse populations, with different microbes and means of delivery, under different meteorological conditions, and with other variables.

The UN report was published in 1969 (6) and the WHO report, entitled *Health aspects of chemical and biological weapons* in 1970 (7). These two reports were influential in achieving the Biological Weapons Convention of 1972, and are still remarkably relevant and authoritative today; they are still often referred to by governments and other interested parties. WHO is now preparing a second edition updating its 1970 publication, which is expected to be completed in 1999.

Allegations by India against WHO in the 1970s

The publication of the 1970 WHO report and the presence of a WHO team in India studying the mosquito vectors of malaria apparently stirred suspicions in some Indian governmental circles of hostile intentions on the part of western countries, particularly the USA.

In early 1975 there were accusations in the Indian parliament by their Public Accounts Committee (8) and in Indian newspapers that the WHO team was carrying out investigations that could be used for BW purposes, notably yellow fever. The Public Accounts Committee report stated that the WHO Genetic Control of Mosquitos Research Unit (GCMRU) project "has been ill-conceived and is of no utility whatsoever to India". It did, however, have a "vital and direct bearing on biological warfare", and, the report asserted, "it is likely that the ultimate and only beneficiary of the GCMRU experiment is the US military machine" (8). Such accusations were intensified by the fact that Harry Hoogstraal, a US entomologist working in an American naval research unit in Egypt, was collaborating with WHO in the project. Hoogstraal was in fact studying migrant birds from the Soviet Union, China, India, western Asia, the eastern Mediterranean and other parts of the world as possible vectors of various diseases, particularly arthropod-borne viruses.

In a detailed article referred to both in *New scientist* (8) and in *Nature* (9), the Public Accounts Committee made references implying possible links between the WHO project and BW. It was noted that one of the three mosquitos under study by the

³ Behind the scenes, Professor Matthew Meselson of Harvard University, through Henry Kissinger, had much to do with forwarding Nixon's initiative. Meselson, a geneticist and molecular biologist, became closely involved with Pugwash and with WHO activities on BW during the 1960s, and has remained so.

GCMRU was *Aedes aegypti*, the carrier of yellow fever (India had no yellow fever virus although they had the host monkey reservoir). Also cited was a quotation from WHO's report, *Health aspects of chemical and biological weapons* (7), noting "the great fear of the introduction of yellow fever on the part of the health authorities in Asian countries" and predicting that "there would be a great disruption of community life and services" if it were used as a weapon. The WHO report also pointed out that mosquitos, as compared with aerosols, were especially good for a BW attack. Both facts were common knowledge. Against the background of the possibilities of BW connections, the Public Accounts Committee report and newspaper articles in India attempted to show that the WHO project was useless and perhaps even dangerous, despite arguments advanced by WHO.

WHO explained the nature of the project in detail to Indian government authorities. It was to study the possibility of introducing sterile male mosquitos that are not carriers of malaria into malaria-endemic regions. Thus it was hoped that the male mosquitos would dominate the breeding cycle with the female carriers of malaria by displacing the native male variety and thus eventually reducing drastically the mosquito population. It was not known why yellow fever had never spread into India from Africa where it was endemic in several countries, and the hope was that the WHO project would obtain important information on that subject, which might help other countries.

Despite an analysis of WHO's work in the respected journal *Nature* (9) and a strong defence communicated privately and later published by WHO (10), the Indian Government requested WHO to withdraw their team, and nothing WHO could do or say could convince them otherwise. The team was withdrawn.

It is quite possible that had the project not been aborted, strides might have been made in combating malaria as well as other mosquito-borne endemic diseases such as dengue and filariasis in India and elsewhere. It is sad to note that today malaria in India, after great progress in reducing the spread of the disease by the use of insecticides, has returned to its former high levels of incidence and mortality.

Recently, the Indian Government has decided to resume research efforts based on the original ideas of the WHO team outlined above (11). This represents — alas — a loss of almost a quarter of a century for those efforts.

The 1979 outbreak of anthrax in Sverdlovsk

Of the many possible candidates for biological weapons (7) anthrax is usually noted by experts as the microbe most likely to be selected in its highly resistant spore form for air-borne dissemination. (This was certainly the case in Iraq, as uncovered by the UN team (UNSCOM) in its post-Gulf War investigations).

The unusual anthrax outbreak in humans and livestock in Sverdlovsk in 1979 therefore raised much interest in those dealing with BW, including national intelligence services, Pugwash, WHO, and Professor Matthew Meselson (see footnote 3).

In April and May 1979, an unusual epidemic of anthrax occurred in the city of Sverdlovsk (now called by its earlier name of Ekaterinburg) in the former Soviet Union. The explanation that appeared in Soviet medical, veterinary and legal journals was that it was caused by the consumption of contaminated meat from endemically infected animals, resulting in gastrointestinal anthrax in humans. An international debate developed, especially in the USA, as to whether the outbreak was a natural or accidental occurrence and, if accidental, whether it resulted from an act prohibited by the Biological Weapons Convention (BWC) of 1972 which the Soviet Union had ratified.

Meselson and I undertook to look into the situation during visits to Moscow, and in private meetings in Geneva with Soviet officials during the late 1980s and early 1990s. After several attempts Meselson finally, in 1992, obtained permission to bring to Sverdlovsk a team of US, Russian and British experts. The results of his persistence and visits to Sverdlovsk in 1992 and 1993 are described in an article published in *Science* in 1994 (12).

The article showed clearly that the anthrax epidemic had been an airborne one, and pointed to a military facility in Sverdlovsk as the source. It was not possible, however, to determine whether the object of the activity responsible for the accident was the development of an offensive anthrax weapon or whether it was for defensive purposes. The article merits the term "classic" in the annals of epidemiology.

It is noteworthy that in the USA preventive vaccination of military personnel against anthrax has recently begun, partly because Iraq had produced large quantities of anthrax as a biological weapon.

Dealing with the smallpox virus problem

The smallpox virus has long been considered a candidate for a biological warfare weapon because of its airborne as well as contact transmission and pathogenic capabilities. Smallpox was actually used in a primitive way by British Forces in the 18th century against American Indians (13). The eradication of smallpox has engendered the fear in some quarters that as the world population loses the immunity conferred by previous mass vaccination campaigns, populations become more susceptible than ever to smallpox infection and epidemics, and this might encourage use of the virus as a biological weapon. Furthermore, the virus itself may have been hidden in laboratories of unscrupulous countries for that potential purpose. Continued vigilance and awareness of this problem by WHO and others are therefore called for.

The historic eradication of smallpox by WHO has been well recorded (14). The inception and basic administrative support for the campaign was arranged by Dr Marcolino Candau, the Director-General of WHO from 1953 to 1973, and was continued by his successor Dr Halfdan Mahler. Dr Donald Henderson, a WHO staff member in its Division of Communicable Diseases, was chosen by Candau to manage the campaign against smallpox, which he carried out with great skill and perseverance, obtaining the cooperation of both sides in the cold war (15).

Dr Candau, a Brazilian, was generally recognized in the United Nations and its specialized agencies as one of the most capable and respected leaders in the UN family. He was soft-spoken, courteous, quietly persuasive and altogether an outstanding public health physician who dealt with a diversity of nationalities, races, religions, political persuasions and personalities with great effectiveness. As noted previously, he supported the activities of Pugwash, and attended several of its conferences after his retirement.

Dr Halfdan Mahler from Denmark provided dynamic leadership and a continuation of Dr Candau's policies during his tenure as Director-General. He was a specialist in tuberculosis control and had worked on this problem in India for many years. One of his greatest accomplishments was the organization of the Alma-Ata Conference in September 1978 which adopted the primary health care concept that became the centrepiece of his tenure as Director-General.

The eradication of smallpox in human populations is an outstanding event in the history of infectious diseases. The final extinction of the smallpox virus itself, however, has remained controversial from a scientific point of view, because of genetic and pathogenic information, perhaps otherwise unobtainable, that could accrue from studies of the living organism. The differing opinions of top scientists on this question have led the World Health Assembly, the governing body of WHO, to postpone their decision on this matter and to consider, subject to approval by the World Health Assembly, definitive elimination of the virus in 1999 (16).

Problems of implementing the biological and chemical weapons conventions

The Biological Weapons Convention

The Biological Weapons Convention (BWC) of 1972 bans the use of BW as well as the development of agents or toxins for hostile purposes. It unequivocally covers the production of all microbial or other biological agents or toxins in quantities that have no justification for prophylactic, protective or other peaceful purposes. It covers as well all relevant present and future scientific and technological developments in the fields of microbiology, technol-

ogy, molecular biology, genetic engineering and any applications resulting from genomic studies.

The report of the 4th Review Conference of the BWC held in December 1996 invites the UN Security Council to consider immediately any complaint lodged, including allegations of possible use, and to take the measures it considers necessary for investigation. It also notes that the UN, with the help of appropriate intergovernmental organizations such as WHO, could play a coordinating role, and that WHO and other international organizations should be used to promote the fullest exchange of scientific and technological information for peaceful purposes.

The major defects of the BWC are the lack of a structured organization, authority, and financial resources to enforce its provisions. This is particularly important with regard to routine inspections by a staff of trained experts and unimpeded on-site inspection based on well-founded allegations or suspicions of contravention of the convention. The Fourth Review Conference had only limited success in remedying these crucial defects. It is hoped that this failure may be overcome by the time of the Fifth Review Conference at the end of this century.

The Chemical Weapons Convention (CWC) and its implementation

After many years of negotiation, in January 1993 the CWC was signed by representatives of 160 countries in Paris. The required 65th ratification of the Convention by governments was obtained on 29 October 1996 enabling it to go into effect six months later on 29 April 1997 (17).

During the period between 1993 and 1997 preparations for its implementation were undertaken by the Preparatory Commission for the Organization for the Prohibition of Chemical Weapons (OPCW) stationed in The Hague, Netherlands. The Preparatory Commission undertook an extensive programme including recruitment and training of inspectors of chemical industries, guidance for national governments in setting up their monitoring of the CWC, interpretation of provisions of the CWC itself, communications base and network, legal considerations and other tasks. These functions are now being implemented by the Organization for the Prohibition of Chemical Weapons (OPCW) located in The Hague with a membership of 110 countries and a staff of 423 as of June 1998 (18).

Additional WHO and Pugwash advisers involved in advances towards the Conventions

In addition to WHO-related individuals mentioned previously, the following medical advisers are noteworthy in this context.

Victor Zhdanov, a virologist, was former director of the Ivanovsky Institute in Moscow, and a member of the WHO Executive Board and various WHO panels on infectious diseases. He was a

dedicated supporter of efforts to establish a BWC which were often at variance with Soviet official policies. In WHO he strongly encouraged the development of a network of collaborating laboratories for communicable diseases, and the smallpox eradication campaign.

Professor Joshua Lederberg, 1958 Nobel Laureate in Physiology and Medicine and former president of Rockefeller University, has been of great help to WHO and Pugwash in their efforts with regard to the BWC. Besides his participation in preparing the 1970 WHO publication on CBW, his most recent contribution has been to focus worldwide attention on the importance of emerging diseases (19). He is also a member of the WHO Advisory Committee on Health Research. It should be noted that a number of infectious agents that have recently appeared — Marburg, Ebola, Hanta and other viruses — have attracted the attention of those seeking likely candidates for biological weapons. Lederberg's advocacy of a network of surveillance centres and laboratories for rapid identification and action has brought effective responses in WHO and elsewhere to counter the dangers of BW.

A detailed account of the many scientists involved in Pugwash meetings devoted to chemical and biological warfare is now in press (5). Its author, Julian Perry Robinson, a chemist, a lawyer and a

world expert on chemical weapons, has been a Pugwash adviser and participant in its meetings since the 1960s.

Conclusion

Despite the long journey beset by numerous obstacles, treaties on chemical and biological weapons are significant accomplishments in the service of peace and international relations in general. Able and dedicated scientists have played key roles in these accomplishments. It now remains for scientists, the general public and governments to shepherd the implementation of the two treaties. This will remain vulnerable for many years, as events in Iraq and terrorist action in Japan have shown. WHO and Pugwash are continuing to play their part in meeting this challenge. ■

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Résumé

Mémoire sur la contribution de l'OMS et de Pugwash à la lutte contre les armes

L'Organisation mondiale de la Santé et les Conférences Pugwash sur la science et les problèmes internationaux (Prix Nobel de la Paix de 1995) se sont intéressées aux questions concernant les armes chimiques et biologiques (CBW) depuis les premières années 50. Le présent mémoire passe en revue un certain nombre d'étapes dans les efforts accomplis par ces organisations pour parvenir à une élimination complète des armes en question au moyen de traités internationaux dont l'application des dispositions est soumise à une surveillance véritable. Il fait également état d'un certain nombre de personnalités éminentes qui ont participé aux efforts en vue d'élaborer et d'appliquer les deux grands traités maintenant en vigueur, c'est-à-dire la Convention sur les armes biologiques de 1972 et la Convention sur les armes chimiques de 1993. Les événements les plus marquants sont les suivants : l'offre que l'OMS a faite à l'ONU de lui fournir une équipe qui serait chargée d'enquêter sur les allégations faisant état de l'utilisation d'armes biologiques par les Etats-Unis et leurs alliés pendant la guerre de Corée; **chimiques et biologiques** 1959 de la Première

Conférence internationale de scientifiques chargés d'analyser les effets potentiels des CBW; la contribution de l'OMS à l'évaluation des effets des CBW, qui a abouti à la Convention sur les armes biologiques de 1972; les contributions apportées par l'OMS et Pugwash à la mise en forme finale de la Convention sur les armes chimiques de 1993; les mesures prises par Pugwash pour amener les chercheurs indépendants à Sverdlovsk (URSS) afin d'enquêter sur la flambée de charbon en 1979; les problèmes posés par la variole et d'autres agents infectieux; enfin, les efforts déployés par Pugwash en vue de définir la marche à suivre pour garantir l'application de l'actuelle Convention sur les armes biologiques. Il est fait état du rôle joué par le Dr Brock Chisholm, premier Directeur général de l'OMS, par ses successeurs le Dr Marcolino Candau et le Dr Halfdan Mahler, ainsi que par plusieurs anciens fonctionnaires de l'OMS, dont le Général de Division Sir Sahib Singh Sokhey, et d'autres scientifiques éminents qui ont conseillé l'OMS et les conférences Pugwash; bon nombre d'entre eux poursuivent encore leur activité en cette qualité.

Resumen

Memoria sobre los esfuerzos desplegados por la OMS y Pugwash para eliminar las

La Organización Mundial de la Salud y las Conferencias Pugwash sobre Ciencia y Asuntos Mundiales (Premio Nobel de la Paz de 1995) vienen interviniendo en temas relacionados con las armas químicas y biológicas desde principios de los años cincuenta. A lo largo de la presente memoria se examinan varios de los hitos conseguidos gracias a los esfuerzos desplegados por esas organizaciones para conseguir eliminar por completo dichas armas mediante tratados internacionales y mediante un eficaz seguimiento de los mismos y del cumplimiento de sus disposiciones. Se hace especial mención asimismo de varias personalidades destacadas que participaron en las actividades tendientes a establecer y aplicar los dos tratados principales hoy en vigor, a saber, la Convención sobre las Armas Biológicas de 1972 y la Convención sobre las Armas Químicas de 1993. Entre los principales temas abordados cabe citar la oferta de la OMS de proporcionar a las Naciones Unidas un equipo que investigara las denuncias en que se acusaba a los Estados Unidos y a sus aliados de utilizar armas biológicas en la Guerra de Corea; la organización por **armas químicas y biológicas** una conferencia

internacional de especialistas científicos encargados de analizar los efectos potenciales de las armas químicas y biológicas; la contribución de la OMS a la evaluación de los efectos de dichas armas, fruto de lo cual fue la Convención sobre las Armas Biológicas de 1972; las contribuciones de la OMS y de Pugwash al establecimiento de la Convención sobre las Armas Químicas de 1993; las medidas adoptadas por Pugwash para llevar a científicos independientes a Sverdlovsk (URSS) a fin de que investigaran el brote de ántrax de 1979; los problemas planteados por la viruela y por otros agentes infecciosos; y las actividades de Pugwash orientadas a establecer procedimientos para velar por que se respete la actual Convención sobre las Armas Biológicas. Se hace referencia a las funciones desempeñadas por el Dr. Brock Chisholm, primer Director General de la OMS, por sus sucesores el Dr. Marcolino Candau y el Dr. Halfdan Mahler y por varios antiguos funcionarios de la OMS, entre ellos el General de División Sir Sahib Singh Sokhey, y se alude también a otros especialistas científicos reputados que han actuado y en muchos casos siguen actuando como asesores de la OMS y de las Conferencias Pugwash.

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