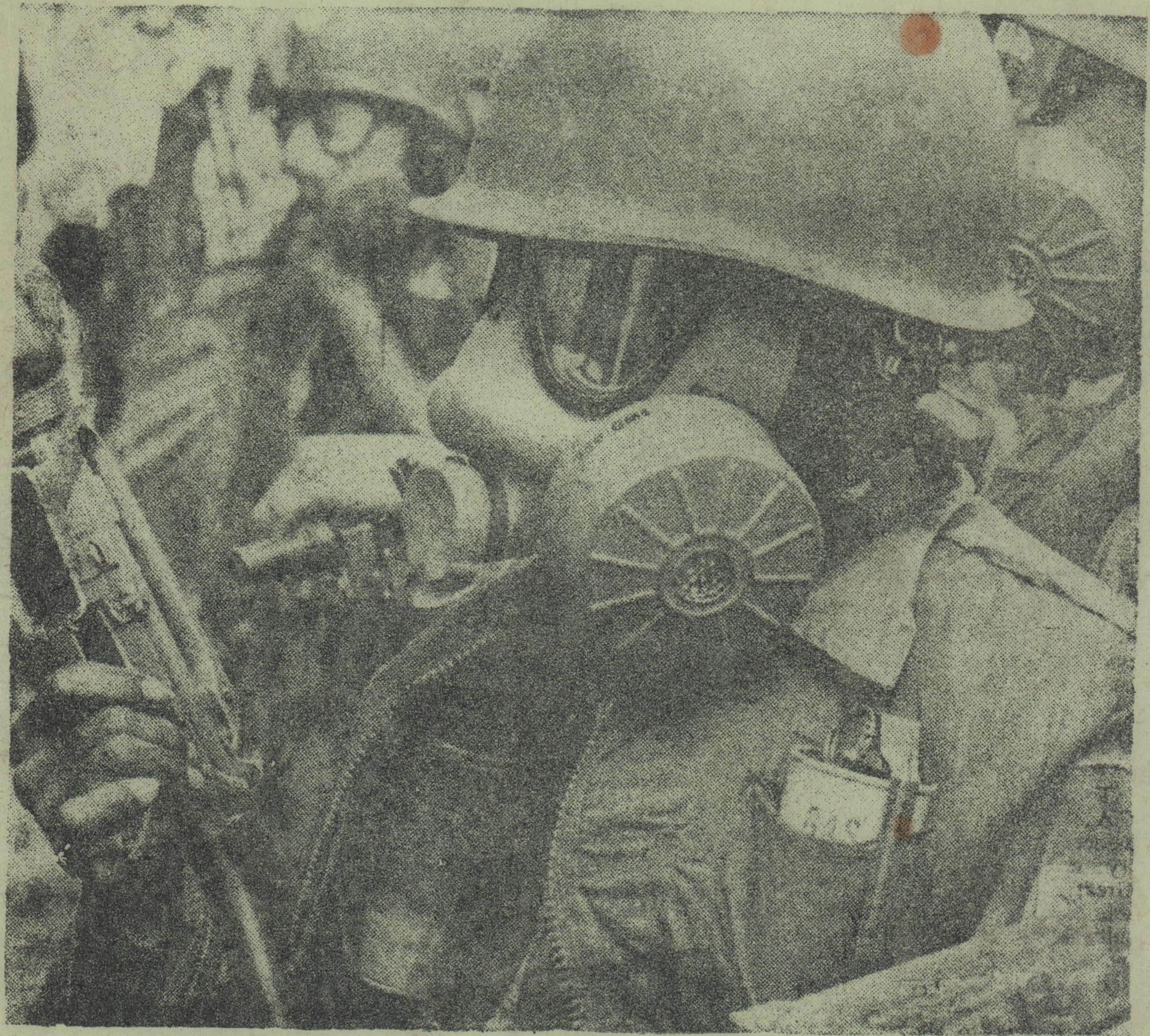


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CONSPIRACY OF SILENCE



The facts about germ & gas warfare

price 6d



From the GENEVA PROTOCOL, June 1925.

"WHEREAS the use in war of asphyxiating, poisonous and other gases, and all analogous liquids, materials or devices has been justly condemned by the general opinion of the civilised world; and

"WHEREAS the prohibition of such use has been declared in treaties to which the majority of the powers of the world are parties;

"TO this end that this prohibition shall be universally accepted as a pact of international law, binding the conscience and practice of nations.

"THE high contracting parties.....accept this prohibition, agree to extend this prohibition to the use of bacteriological methods of warfare....."

C O N S P I R A C Y O F S I L E N C E

INTRODUCTION

Preparations for Chemical and Biological Warfare are surrounded by an intense security network. This pamphlet is an attempt to explain what Chemical and Biological Warfare is and why the secrecy must be lifted. Secrecy breeds fear and suspicion and these can in turn lead to War. In a world already possessing many other types of weapons of mass destruction this might well mean a World War, leading to the annihilation of life on this planet.

Despite the gravest of dangers and knowing full well that preparations for war have always resulted **in war**. Governments still refuse to break their silence and the research into means of waging Chemical and Biological Warfare continue unabated. The Governments have even excluded C & B weapons from their draft disarmament treaties and proposals.

Chemical and Biological Warfare presents the gravest dangers to mankind. There is no defence and the problems of inspection and control present the greatest difficulties.

The dangers of proliferation are greater than that with Nuclear Weapons. Chemical and Biological weapons are much cheaper to produce than Nuclear ones. This means that C & B weapons are easily made available **by** smaller nations. It is believed that the Egyptians are working along these lines. It is rumoured that they may have used noxious gases in the Yemen campaign.

Britain's Germ and Chemical War Research is carried out at Porton in Wiltshire. There is at least one other establishment in this country so secret that it has never been mentioned in Parliament or in the press.

We do not want to scare, but just to bring home the facts. Research isn't going on for its own sake. These weapons are being field tested in Vietnam by American forces. The behaviour of gas in battle conditions is being studied. Chemicals have been used to destroy crops and for defoliation.

CHEMICAL WEAPONS

All conventional explosives from gunpowder to napalm are the result of a chemical reaction. However, in modern terms "Chemical Warfare" is normally taken to mean the use of gases or clouds of droplets or small particles which destroy or injure living organisms.

Brief History

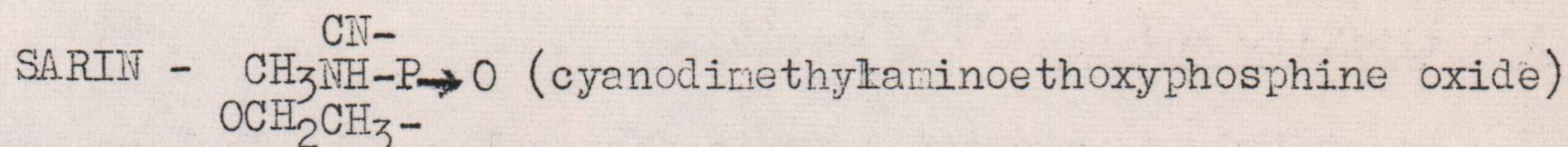
- 1915 - April 22nd - The Germans launch first large scale gas attack at Ypres. Chlorine released on a four mile front killing or incapacitating French and Canadian troops to a depth of 1 mile. **Casualties** 59,000.
- 1916 - December - Phosgene introduced.
- 1917 - Mustard Gas first used. Allies suffered more gas casualties in the first fortnight of encountering Mustard Gas, than in the previous two years.
- 1918 - March - During Somme offensive against British and French troops Germans conducted ten day artillery bombardment using 500,000 shells containing Phosgene, Mustard Gas, and other gases.
- 1919 - Both sides had planned to use gas more extensively if the war had continued. A new gas Lewisite would have been ready for use. The British had intended to load 20-30 per cent of all artillery shells with toxic chemicals, and the Germans planned for 50 per cent gas ammunition.
- 1925- The Geneva Protocol - an agreement banning the use of chemical and biological weapons. The United States and Japan signed this treaty but it was not ratified by the respective legislatures.
- 1932-34 - General Disarmament Conference - Failure to agree.
- 1935-36 - The Italians use gas against Abyssinians, principally mustard gas in the form of sprays and bombs. These attacks had a considerable effect on the unprotected soldiers and civilians.
- 1937-42 - Gas use by Japanese against Chinese, though not on a large scale.
- 1939-45 - World War II - Mercifully gas weapons were not used in this war. The reasons for this seem obscure, the only thing that may be said with any certainty is that both sides had stockpiled gas weapons and had them ready for use at any time. Wartime research resulted before 1944 in the German discovery of the nerve gas TABUN. The allies were not far behind with this discovery, and before the end of the war two other nerve gases SARIN and SOMAN had been developed.
- 1945 onwards - Research continuing all the time in strictest secrecy in all leading countries, probably all such countries now have nerve gases if not other gases.
- 1965 - Vietnam - Latest try out under battle conditions of American gas. These gases are of low toxicity, but their closely studied behaviour is giving valuable information, of interest no doubt to the originators at Porton.

Adaptibility and use

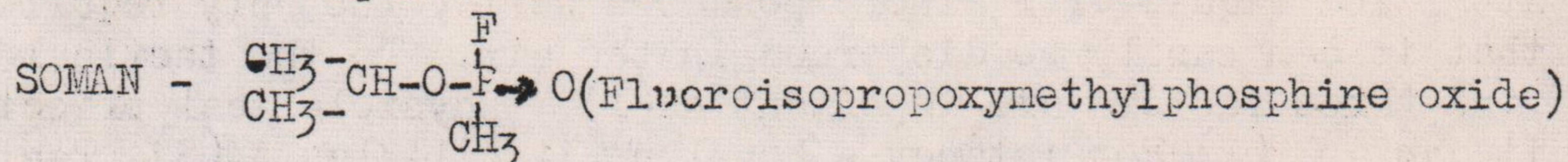
As stated on page two a toxic chemical can be deployed as a gas or an atomized liquid or a finely powdered solid, the only requirement being that it can easily be dispersed in the air. To the tactical military mind three factors are important - (1) A physiological effect - the damage it can do (2) Persistancy - how long it will last (3) Tactical use - how it can be fitted into the general strategy of attack.

The Chemical Arsenal

- Choking Gases** - These gases attack the respiratory system and are often lethal. e.g. Chlorine, Phosgene, and Diphosgene.
Phosgene (Carbonyl chloride) - colourless gas - affects Lungs - victim dies from oxygen deficiency. Non-persistent - rate of action immediate to three hours - smell of new mown hay.
- Blister Gases** - Attack any exposed part of the body especially if moist, causing irritation and later blistering of the skin. These have a delayed effect. e.g. Mustard Gas, Lewisite, Ethyl-dichlorarsine.
Lewisite - dark oily liquid - fatal if inhaled - a small quantity on the skin produces almost certain death - will penetrate cellars and dugouts. Immediate irritation and delayed blistering. Smell of geraniums.
- Sneeze gases** - These are really minute solid or liquid particles which cause sneezing, intense pain in the nose, throat and chest, followed by violent nausea. They are not normally fatal. e.g. Diphenylaminechlorarsine
- Tear Gases** - Attack the mucous membrane around the eyes. e.g. Chloroacetophenane.
- Blood Gases** - Gases which affect the action of the heart, nerve reflexes, or interfere with the body's ability to assimilate oxygen. e.g. Carbon monoxide, hydrogen cyanide. However, both of these gases are lighter than air and are not therefore suitable for use on the battlefield.
- Vomiting Gases** - DM (Adansite diphenylaminechlorarsine) - one of the gases used in Vietnam. Yellow to green solid - causes in progressive order, irritation of the eyes and mucous membrane, nasal discharge, coughing, severe headache, acute pains and tightness of the chest, nausea and vomiting. Non-persistent - rate of action one minute. No smell.
- Nerve Gases** - The most potent gases of all, about which much information is still secret.
 - CN
 TABUN - P - N(CH₃)₂ (cyanodimethylaminoethoxyphosphine)
 - O CH₂ CH₃
 a colourless to brown liquid - persistent - rate of action is immediate to fifteen minutes - no smell when pure but otherwise is faintly fruity. Inhalation produces, vomiting and diarrhoea followed by muscular twitchings and convulsions. Finally causing a breakdown of the nervous system and death.



Colourless liquid. Effects the same as Tabun.



Colourless liquid with similar effects to Tabun but faster acting and more potent

Definition - of Persistancy - 10 minutes effect.

Delivery Methods

Chemical weapons may be adapted to the normal delivery methods such as missile warheads, bombs and artillery shells. They can also be sprayed from low flying aircraft or helicopters or propagated by an aerosol mist. An aerosol is a suspension of very fine particles - too small to be seen through a microscope - in air. Rain or high wind will cause the aerosol to separate out or disperse too quickly. Given the right weather conditions however, they will stay in suspension and carry for many miles.

Effectiveness

As can be seen from the list of uses, the effects of exposure vary from irritation and vomiting to almost instant death. This range gives them no end of tactical use and lends the most deadly of them to use in a strategic role.

On the battlefield a gas shell or a bomb has weight for weight a far greater casualty effect than ordinary high explosive. With the increased potency of these weapons the potential fatality rate has now greatly increased.

The effectiveness of the nerve gas Sarin has been estimated by Sir Robert Watson-Watt, in his book "Man's Means to His End", we quote :-

"A ten ton bomber load, distributed with an efficiency of 25 per cent and delivering one tenth of a milligram of Sarin as vapour per litre of air, would spread a dosage lethal in one minute exposure, over an area of 25 square kilometres. Translated to other units, these figures mean roughly a third of a millionth of an ounce per quart of air, lethal in one minute over an area of 10 square miles."

Sir Robert also describes the now obsolete Tabun which is similar in its effect to Sarin.

"Released against a herd of goats, it (Tabun) made them first violently ill physically, thereafter rampant maniacs mentally, the demonstration ending with the killing of goat by goat in a fury of uncontrollable destruction."

PROTECTION

Generally a gas mask and protective clothing are required. Although the nerve gases will penetrate clothing there is an effective antidote in Atropine. Atropine however, can not be used as a blanket cover before a nerve gas attack, as it will cause serious illness unless countered by the nerve gas. Here we run up against the usual problems of Civil Defence. The longest the nerve gases take to act is 15 minutes, and in this time the gas must first be identified, then the Atropine distributed and 50 million people injected. The nerve gas may be both colourless and odourless.

For other gases the same problem of identification arises. The right filter for a gas mask can not be selected until the gas being used is known, by which time it will have taken effect. If several gases are used, each requiring a different filter, even troops who have some protection on hand will find it impossible to cope.

If one of the nerve gases was mixed with a very quick acting gas, so as to incapacitate immediately while allowing the nerve gas more time to act, the effect on civilians and troops would be considerable.

CONTROL

The manufacture of toxic chemicals does not require the complicated engineering and scientific processes needed for nuclear weapons: a chemical plant of the type used in the insecticide industry is all that is needed. This means that many small nations are well able to produce these weapons.

For controlled disarmament there are many difficulties to overcome. With so many possibilities for conflict existing, even if inspection could be agreed upon in principle how would it be put into practice? Many ideas have been put forward, such as, placing the chemical industry of every nation under international control; questioning scientists likely to be engaged on this work; looking out for large concentrations of scientists in any particular area; or watching for field tests and/or troop training.

All of these suggestions amount to a general disarmament and inspection agreement. Yet after sitting at Geneva for years the politicians can not even agree as to how many unmanned black boxes could be used to monitor nuclear tests. The degree of inspection needed for chemical weapons is infinitely greater than this. In fact due to this ease of manufacture of toxic gas it is extremely unlikely that any inspection system would be practicable. The startling fact that chemical weapons are no longer discussed at disarmament conferences makes such negotiations farcical.

PSYCHO-CHEMICALS

There is little definite information available on these chemicals, which are sometimes cited as the weapons that will win wars without killing the enemy.

These chemicals - some of which are derived from lyseric acid L.S.D. - can have both psychological and physiological effects. They may cause dizziness, anaesthesia, nausea, mild paralysis, or temporary blindness: these effects are not normally permanent, although a few exceptions are believed to have occurred. Possible uses could be to disorientate an enemy or to cause panic, but at present their effects are thought to be too unpredictable for military use. Nevertheless, much research is being carried out at Porton and elsewhere into these drugs and expenditure on these establishments is rising each year.

BIOLOGICAL WEAPONS

Naturally occurring diseases have frequently played their part in war; many battles have been lost because the vanquished suffered an epidemic. Minor incidents involving the deliberate dissemination of bacteria have taken place, although there is no recorded history of any large scale attacks. It would, in any case, be extremely difficult to say whether or not an epidemic had started naturally.

Biological agents may be spread by insects, by water or food contamination, by contact (contagious) or by air distribution. Because of the versatility of these weapons they may be employed either to weaken the morale or the economy of a potential enemy, or as an integral part of total warfare. To have a weakening effect on morale or the economy, plants and animals could be infected by saboteurs. Human diseases could be similarly spread; the difficulties involved in detecting such an attack would be tremendous. Even if it was suspected that attack had been made by saboteurs, their country of origin could be any one of a hundred.

HISTORY

As already stated naturally occurring disease has affected many military campaigns. A few examples are; plague afflicting the crusaders at Jerusalem; typhus hitting the Moors in Spain; and dysentery thinning Napoleons Grand Army in Russia. In the Boer War typhoid was said to claim more victims than did bullets, and in the early days of the Second World War, Allied troops in the South Pacific suffered from Malaria and shrub typhus.

All these attacks have been natural but occasionally disease has been spread deliberately. Napoleon flooded the ground around the city of Mantua in Italy in the hope that malaria would force surrender.

During the first World War, German agents infected with Glanders, horses of the Rumanian Cavalry and U.S. livestock, about to be shipped to Europe.

THE BIOLOGICAL AGENTS

To be suitable for military use an agent must meet certain requirements.

- 1) Highly contagious.
- 2) It must remain potent when stored and be resistant to destructive forces such as sunlight, heat, and explosive charge if the agent is to be carried in a missile warhead or a bomb.
- 3) It must be effective in small doses and capable of rapid dissemination.
- 4) It must be difficult to detect, and have a high initial mortality rate or a lasting debilitating effect, against its intended victim be it man, animal, or plant.
- 5) It should preferably be an agent alien to the part of the world against which it is directed to avoid natural immunity preventing the disease from spreading.

Suitable agents for military use include ANTHRAX, PLAGUE, CHOLERA, SYPHILIS, YELLOW FEVER, PSITTACOSIS, SMALLPOX, and INFANTILE PARALYSIS. The best agent adaptable to rapid dissemination is PSITTACOSIS (parrot fever). This highly contagious disease has been described as the "greatest danger" amongst the biological agents, by the American Association of Scientific Workers. It is easy to distribute and American scientists estimate that an unpurified preparation of the PSITTACOSIS virus contains enough respiratory doses per quart to infect seven thousand million human beings, or approximately three times the population of the world. This figure assumes a perfect distribution, which is practically impossible but it serves to show the tremendous potential of this form of warfare.

Some of the diseases already mentioned, ANTHRAX for example, affect animals as well as humans. Other diseases which could be directed against animals include HOG CHOLERA, FOWL PEST, RINDERPEST (Asiatic Cattle Plague), FOOT AND MOUTH, and GLANDERS. It is worth noting that many pharmaceuticals are obtained from animals. e.g. adrenalin, liver extract, and insulin. Should a general attack be made on both man and animal these drugs would not be available for medical use.

Crops may be infected with a variety of plant plagues, blights, and pests. Pests such as the Japanese beetle, or the boll weevil would probably be very effective if introduced into a foreign environment.

The Botulinus Toxin

The botulinus toxin (common food poisoning) is the most deadly poison known to man. It is one thousand times more toxic than the nerve gases. Some otherwise harmless bacteria excrete tiny amounts of highly poisonous substances (toxins) - these toxins are pure poisons and are not contagious.

The toxins of tetanus and diphtheria can be particularly damaging. Again assuming perfect distribution (i.e. by injection), only $8\frac{1}{2}$ ozs of the toxin would be needed to kill everyone on earth. The botulinus is cheap and easy to make, and may be distributed by air in a fine powder form.

There is however, an antidote which is effective for at least a year. The antidote which has to be administered in two doses, was given to each man involved in the D-Day landings to convince Hitler that the Allies were ready for toxin warfare. It had been expected by those who were in a position to know that the V I flying bombs would be carrying the toxin. The toxin will kill within six hours, and is oxidised by the air in twelve, leaving the area habitable to the invaders.

Although an antidote exists it has not been generally distributed, to do this once the toxin has been used is yet another impossible task for the Civil Defence.

OTHER POSSIBLE POISONS

Other naturally occurring poisons exist which are more toxic than the nerve gases but not as potent as the botulinus toxin. They include clam poison (2), curare (3), used on arrow tips by the South American Indians, the carbanates (6), and snake venom (50). The figures in brackets show the relative toxicity of the poison to the nerve gases. e.g. curare is three times as poisonous as the nerve gases.

The French according to the Sunday Citizen 28th March 1965, are leading the poison gas arms race by the manufacture of the carbanate poisons. The other poisons mentioned above are obvious choices for investigation but no concrete information has come to hand.

DELIVERY

The usual array of bombs, sprays aerosols, and missiles are available. Small quantities of a particular culture could possibly be introduced by saboteurs, to cause a crop failure or an epidemic. Any disease started in this way would suffer from the disadvantage that it must occur naturally in the area to avoid suspicion, and this would to some extent limit the spread of an epidemic.

EFFECTIVENESS

Included in the properties sought in a biological agent are that it should be difficult to cure and to identify.

The procedure for selecting an agent is probably as follows. A sample of the virus is subjected to the vaccine or antibiotic known as a medical cure (assuming a medical cure is known). Any virus the vaccine fails to kill is separated out and attempts made to grow it as a new culture. If this culture resists any other attempts to kill it, a weapon exists against which there is no known defence. In this way the vaccines and antibiotics used by medical science to cure sickness will be rendered of no use in combating these man cultivated diseases.

Although the potential of these weapons is not in doubt their behaviour is. Only small scale field testing has been done, leaving their large scale applications uncertain. As such large scale testing would require another war, the old adage, "shoot first and ask questions afterwards", would probably be brought up to date.

PROTECTION

Major General Brock Chisholm¹ in a speech made in Switzerland in September 1957 referred to a biological agent - unspecified but probably the botulinus toxin - developed at the end of the last war, in the following terms :-

"We knew that if the Germans used this biological in their flying bombs they could kill millions of people and perhaps everyone south of the Tweed, within six hours, and there would be nothing, repeat nothing that we could do about it".

The situation can only have changed for the worse.

CONTROL

Control of biological weapons involves all the problems of chemical and nuclear inspection and more. A very small team of competent biologists could manufacture sufficient quantities of virus or toxin for use in war. The inspectorate required for control of all biological laboratories in the world would be enormous.

As with nuclear weapons control of the delivery methods show the most promise but leave a lot to be desired. Dispersal of an agent by saboteurs, perhaps using an aerosol, would always remain a possibility.

1. Major General Chisholm was Director-General of the Royal Canadian Medical Corps during World War II, at the end of which he became the first Director-General of the World Health Organisation.

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THE ESTABLISHMENTS

Because of the general horror image which rightly exists in the public mind, of germ and chemical warfare, the establishments connected with this tend to be kept secret or located in remote places, and are heavily guarded. Their existence is given scant or no publicity, and it is often only the occurrence of a serious accident or a deliberate protest or demonstration by a peace movement, which brings these places into the news.

To bring these weapons up to operational effectiveness requires three types of establishment, i.e. Research Laboratories, Proving Grounds and Manufacturing Facilities. The relatively small amounts of Biological agents required for a large scale attack, allows research and manufacture to proceed at the same place and under the same staff. Chemical weapons, however, once a pilot process has been developed require the full potential of a chemical plant for bulk production.

In Britain, the United States and possibly some other European countries, these are made almost exclusively by private enterprise, alongside normal peaceful production.

The manufacture is carried out under secret contract with the governments concerned, and workers and management are bound by the usual secrets laws from disclosing details to the public or to shareholders. In the United States the making of bacterial poisons is also farmed out considerably. About 65% of the chemical and biological research budget goes to private enterprise. The giant chemical and drug combines of the Western world find these two forms of mass murder a profitable line - Complete secrecy, near monopoly and an assured market.

The Daily Mail reports that here in Britain at Newdigate in Surrey, the firm of Schermuly Ltd is with the cooperation of Whitehall, making gas cartridges and special pistols for export to 25 countries. Its normal production is of life-saving apparatus!

Proving grounds may be specially created, as in Canada during world war 11 when vast areas of prairie were taken over, and tethered animals were sprayed with poison from the air, and as at the extensive ranges at Porton, in Britain. Otherwise proving may be done on ordinary military trial grounds or ranges. Proving

under genuine combat conditions, with real live casualties, is now taking place in Viet Nam.

In the United States several establishments are known to exist. One is at Fort Detrick, Maryland. Here part of the immense chemical and bacteriological budget of 125,000,000 dollars a year is spent. There are believed to be 8,000 civilian employees and 5,000 men of the U.S. Army Chemical Corps here, directed by 138 Ph.D.s, 20 M.D.s and 47 microbiologists. This establishment is linked with the chemical warfare proving grounds at Dugway, Utah. Centres at Newport, Indiana; Edgewood, Maryland; Pine Bluff, Arkansas, and Denver, Colorado; are involved on the production side of the gases. These fantastic war preparations have so far resulted in three accidental deaths and 715 cases of illness ranging from severe to moderate - an infinitesimal fraction of the numbers they could kill or disable were they put to their intended use.

Similar work goes on in Canada at Suffolk in Southern Alberta and in Russia near the Caspian Sea. It is not known whether the station set up in Manchuria by the Japanese in the 1930s is still operational and serving the dialectic dictates of the Chinese regime.

In Britain the four establishments, which can be described comprise ranges, laboratories, camps and other buildings set in fenced-off and closely guarded area of Salisbury Plain, measuring some six miles by three near the village of PORTON. The units are, The Joint School of Nuclear and Chemical Ground Defence, The Microbiological Research Establishment, The Chemical Defence Experimental Establishment, and Allington Farm. Whereas the names of the first three are self-explanatory, that of Allington Farm conceals its sinister import. It is from here that some of the revolting cruelty at the first three places.

The number of staff employed at Porton is secret, but it is believed to total about 1,100 of whom about 100 are Scientific Officers, thus making Porton second only to Fort Halstead in Kent in concentration of top scientific brain power under army control. Staff off duty in Salisbury do not talk about their work - they are in fact forbidden to do so by the Official Secrets Act - and prefer to keep conversation away from subjects related to war.

Strict security is continually maintained. Army police with dogs and landrovers, and controlled by special security officers constantly patrol the roads and ranges and each building is carefully guarded.

The precautions preventing the escape of deadly organisms and toxins are as thorough as those preventing the escape of information. All the windows are double glazed, all liquid waste is sterilized in a special plant, all air extracted from the laboratories is carefully filtered and elaborate safety rules have to be observed by the staff.

Although Porton was first set up in 1916 when chemical warfare was being used by both sides in World War 1 on a moderate scale, the main buildings were put up under maximum security in 1951. With World War 2 a bitter memory and with the cold war hardly started this indicated a spirit of maximum cynicism and dishonesty in the Government.

These buildings are known to comprise laboratories fitted with the best of equipment, including a computer to handle the complex mathematics of mass destruction, libraries, a cinema and a lecture room. To prevent maintenance workers who are not considered sufficiently reliable from entering these places all electrical fuses and connections and points for other services are located in the roof.

Near to this new building is a village of dwelling houses accommodating some of the staff. It is believed by some that among the residents here are scientists of German or Japanese origin who, during the last war helped prepare these weapons for their own countries, living under assumed English names.

The unpublicised, or secret work at Porton, includes research into about 40 types of micro-organism, among which are those of Cholera, Typhus, Pneumonic Plague, Q - fever, Polio, Dysentery, and Anthrax, and their means of dispersal and propagation. To provide broth on which to grow cultures of these germs, 150 Pounds of Beef are used each week.

To perfect the Germ and chemical weapons, animals from Allington Farm are used in large numbers. In 1959, there were supplied 85,566 Mice, 7,695 Guinea Pigs, 2,005 Rabbits, 720 Chicks and 9 Rats. The provisions of the 1876 Cruelty To Animals Act do not apply at Porton. No inspector of the R.S.P.C.A or other animal welfare body is allowed in. There is a horrible story concerning a monkey which was seen by an electrician who, despite precautions, was able to get inside.

Three accidents have within recent years occurred at Porton. Two were explosions connected with steam and ether. In the third, Geoffrey Bacon, a scientist, working on pneumonic plague was infected by the organism and died of the disease. Such was his apparent fear of contravening the Secrets Act that it was not until his resulting fever had been running for several days, watched over by uncomprehending, and perplexed doctors, that he could bring himself to mutter *Pasteurella Pestis*. By this time the disease had gone too far and he could not be saved.

Demonstrations, pickets, and propaganda by the peace movement have further focussed the public's attention on Porton, and increased its awareness and disquiet.

Torried by the bad image, the War Office in May 1964 invited in a carefully screened party of journalists. They were shown only the so-called defensive and non-military aspects of the research. This visit was followed by a series of hitewash articles, in the local and national press, which did not delude the more observant of their readers.

Porton continues working behind its veil of secrecy. Some of its work is not directly connected with warfare. But the advertisements put out from time to time for scientists with experience in particulate clouds, in nuclear radiation and the usual microbiological subjects leave no doubt in the minds of anyone who reads them as to the lines of research. It is regarded by the public locally as a sinister place, the subject of some wild rumours, which are neither confirmed or denied by the Ministry of Defence into whose hands it has passed.

Although research and development centres are known in Britain, the United States, Canada, and Russia, it should not be assumed that they exist in these countries alone. It cannot be imagined that Egypt which has been supplying gas for the Yemen has not some facilities of this kind, or that France and China the latest entrants to the nuclear club are not under effective secrecy preparing for this other kind of war. So too may be Western Germany and some iron curtain countries other than Russia.

CONCLUSIONS

The conclusions have nothing for our comfort. Unlike nuclear weapons, germs and chemicals take so many different forms that a universal defence does not exist. Shelters may protect from fall-out while it lasts, but germs and gas can penetrate the best constructed of these and no Geiger counter can tell when an area is free of infection.

Again unlike nuclear weapons, they may be developed and made by any small country, which has some amount of chemical industrial plant, or which can draw together a top-rank microbiologist with a team of assistants. The effort required for this is small in comparison with the prodigious work needed to launch a nuclear bomb.

It is therefore true to say that the nuclear strategists phrase 'the nth power problem' already exists. The top power countries are as we have seen deeply committed to these weapons and many smaller countries are now also committing themselves. The escalation of research is far ahead of that of nuclear weapons and

it may well be that the germ and gas club, approaches 100 per cent membership. Mankind is now potentially at the mercy of any country or group prepared to use these weapons in a fit of pique or an insane bid for world power.

So far for a variety of reasons germ and chemical weapons have not been used to their full extent - we should not be alive now if they had! But it is possible that the advanced powers of the world are now threatening each other round the clock with missiles containing nerve gas and botulinus toxin.

The situation today is somewhat like that of 1945, when atomic bomb research was under way in America, Britain and Germany. A concerted action by scientists and by the public, if they had known what was afoot, could have prevented the holocausts of Hiroshima and Nagasaki, and the threat of the mushroom cloud, under which we have lived ever since. Concerted action now by all peoples and all scientists in all countries could stop these weapons proliferating and end them for good.

There is no test ban treaty or glare of world publicity to restrain any government from indulging itself to the limit with these weapons. It is now that action should be taken. Here in Britain we must urge the Government publicly to renounce Germ and Chemical war, to stop at once this work at Porton and elsewhere, to end the secrecy there and turn the establishments over in their entirety to research into the pressing problems of suffering humanity, under W.H.C. control.

We must all, ordinary people and scientists alike, resist in every way we can, the preparations being made at our expense by our governments for this kind of war. We must do this now and everywhere, before advanced techniques spread and the last crumbling moral barriers are down. The conspiracy of silence must be broken.

NOTE

This survey of Germ and Chemical Warfare, which succeeds the earlier "Silent Death", published jointly by Cambridge University CND and the Putney & Wimbledon working group C'ttee of 100, does not claim to be final or exhaustive. There is much more to be said and there are more conclusions to be drawn. It is hoped within a few months, when more facts are available, to bring out a second and fuller edition.

In this shadow-world of secrecy, uncertainty and suspicion, facts are hard to come by. If you know of anything relating to this kind of warfare, which you are able to tell us, we shall be pleased to hear from you. With your help we can present a fuller picture.

Printed and published by the Germ & Chemical Warfare Study Group, London Committee of 100, 13 Goodwin St, London.N.4.

**PROHIBITED PLACES
In the neighbourhood of
PORTON DOWN**

PORTON

A — Joint School of Nuclear and Chemical Ground Defence.

B — War Department Range.

C — Microbiological Research Establishment.

D — Chemical Defence Experimental Establishment (Surrounded by high security fencing).

E — Allington Farm—Animal Farm for M.R.E. and C.D.E.E.

F — Boscombe Down Armament and Aircraft Experimental Establishment.

G — R.A.F. Old Sarum.

The shaded part of the map is the Restricted Area, surrounded by four strand wire fencing and notices saying 'Danger, Keep Out.'

