

# IS PROHIBITION OF GAS WARFARE FEASIBLE?

BY W. LEE LEWIS

## I

ONE of the most poignant pleasures of the human mind is that exquisite sensation of being misunderstood. In it youth justifies filial disobedience, and husband or wife condones a lack of noble loyalty. Through it the misguided artist finds solace and surcease of professional failure and human weakness, a foil for self-reproach.

Among the professions, that of chemistry is most misunderstood. But the chemist is neither immature, erotic, nor a failure. Consequently he does not enjoy being misunderstood. This atmosphere of mystery and misapprehension has ever enshrouded him and has defeated his most earnest effort to be simple and candid.

In the public mind he seems to have taken character from one Philippus Aureolus Paracelsus Theophrastus Bombastus von Hohenheim of the sixteenth century, and his modern spawn would be alchemists and sophists who essay to turn swamp grass into gold, and to explain the physical miracles of the Bible chemically.

Just now the chemists are being criticized for unanimously questioning the feasibility of eliminating warfare gases. Of them it is being said, 'As a man thinks, so he is.' Therefore, in still supporting that mode of warfare which, more than any other one thing through the ages, brought home to the public mind the power of his science, the chemist is backing his own interest.

It would seem that a lively imagina-

tion might equally well conclude that the chemist's convictions in this matter arise from his special knowledge of the field.

In order to approach this subject philosophically let us go back, even further than *Knickerbocker's History of New York*, to the very beginning of things.

Fighting with poisons did not originate with the Germans, nor is it a modern institution. It dates back to the time when our first very great-grandparents emerged from Silurian ooze and began to proliferate. As unicellular organisms, their wants were simple, competition slight, and wars absent.

But, as all living things must move either onward or backward, so this little globule of protoplasm grew tired of being all stomach one moment and, in the next, doubling in the rôle of protective or reproductive system. New cells were taken on and given special functions, such as nutrition, reproduction, protection, and so forth. In time, nutrition cells called for a more varied diet, reproductive cells for mates, and nerve cells begat temperament; and these things have been at the base of all animal conflicts, large or small. Then nature began to cast about for weapons for the protective cells, and the simplest things at hand were poisons. Thus snakes, spiders, insects, and even some plants, are equipped with poisons in stings, fangs, or nettles. It is a general weapon among creeping things of the

lower order. Ultimately, more sportsmanlike equipment, such as hoofs, horn, and teeth, was added to animal protection.

It is interesting to note that certain animals specialized in chemical warfare. The little bombardier beetle, with his tiny droplet of poison liquid hurled into the face of his pursuing enemy, was the original grenadier. The inkfish first used the principle of the smoke-screen. Then there is the ubiquitous polecat, than which there is no greater testimonial to the efficacy of German stink-gas. The skunk is a social failure, but a first-class fighting man. He never hurries or steps aside: he lets the rest of the world do that. He has a chemical equipment designed to make any dog too proud to fight. Have you ever, from a safe vantage-point, noted him threading his way unattended and unafraid along some woodland crest? Then surely you must have thought of those noble lines applied to Napoleon in his incarceration: 'Grand, gloomy, and peculiar!'

Man has a native equipment of low fighting-calibre. His untrained fists are puny; he cannot run fast or kick hard, and a projecting nose interferes with his biting proclivities. He, therefore, early supplemented his native equipment with artificial weapons, and poisons played a large part in early controversies, as in the poisoning of arrows and spears.

Among the earliest-recorded human use of noxious chemicals in war is the employment of pitch and sulphur, which were burned at the foot of the walls of the ancient cities of Belium and Plataea by the Spartans, in their wars with the Athenians, during the fifth century B.C. Later, we read of the use of stinkballs, apparently mixtures of asafetida and combustibles — little courtesies exchanged between ships fighting at close range. Prester John,

among many things, is credited with burning similar mixtures in metal effigies, much to the confusion of his enemies. Even the English during the Crimean War considered seriously, for a period, the plan of smoking the Russians out of Sebastopol with burning sulphur.

The subject of chemical weapons on a vast scale continually arose in men's minds. The subject has always been fascinatingly terrible. An article in the *Popular Science Review*, in 1864, by B. W. Richardson, on 'Greek Fire,' is uncannily prophetic. During the early stages of the World War, many fanciful suggestions were received by the combatants for quickly ending the conflict with chemicals. It is a fundamental of psychology that thought tends to work over into action. Then came the German surprise, April 22, 1915.

With men's minds thus reverting to fighting with noxious chemicals, we can readily understand how the matter was taken up at the Hague Conference in 1899. At that Conference the assembled nations pledged themselves 'not to use any projectiles whose only object was to give out suffocating or poisonous gases.' This agreement was not signed at the time by the American or German representatives, though Germany signed it the next year — 1900.

The principle was reaffirmed at the Congress of 1907. Article 23, of the 'Rules and Doctrines for War on Land,' states: 'It is specially forbidden to employ poisons or poisonous weapons.'

The matter finds no further mention in international papers until the Treaty of Versailles, Article 171, on Armament, Munitions, and Materials, which reads: 'The use of asphyxiating, poisonous, or other gases and all analogous liquids, materials, or devices, being prohibited, their manufacture and importation are strictly forbidden in Germany. The

same applies to materials specially intended for the manufacture, storage, and use of said products or devices.'

This same clause was read into the treaty of St.-Germain with Austria, of Neuilly with Bulgaria, of Trianon with Hungary, and of Sèvres with Turkey. This may be taken as a reaffirmation of the Hague principle and it played a strong part in the events at the American Conference.

## II

On January 6, 1922, Secretary Hughes presented the following resolution to the Disarmament Conference, in favor of the abolition of poison gas in international warfare:—

'The use in war of asphyxiating, poisonous, or other gases, and all analogous liquids or materials or devices, having been justly condemned by the general opinion of the civilized world, and a prohibition of such use having been declared in treaties to which a majority of the civilized powers are parties; now, to the end that this prohibition shall be universally accepted as a part of international law, binding alike the conscience and practice of nations, the signatory powers declare their assent to such prohibition, agree to be bound thereby between themselves, and invite all other civilized nations to adhere thereto.'

Simultaneously, Secretary Hughes read three reports: that of the Conference's expert committee on poison gas, declaring against prohibition, and those of the Advisory Committee of the American delegation and of the General Board of the United States Navy, favoring prohibition.

The best reasons for the resolution should be found in the reports of these committees and the resulting discussion.

Secretary Hughes was undoubtedly

greatly influenced by the clause read, appearing in the several peace treaties; for Mr. Root brought out in the discussion that these treaties 'presented the most extraordinary consensus of opinion that one could well find on any international subject.' However, it seems a bit anomalous to find, in the terms visited upon a defeated enemy, principles and rules to apply to future international military relations. The same argument would justify the universal destruction of fortresses and aircraft, the yielding-up of records and secret methods, and the destruction of fleets; for these also were largely visited upon the defeated nations.

The main arguments on which the resolution found support were based upon these principles in warfare: (1) That unnecessary suffering in the destruction of combatants should be avoided; (2) that innocent noncombatants should not be destroyed. It was claimed that the use of gases in warfare violates both these principles, and is therefore universally condemned.

As to the relative amount of suffering involved in death by gas and death by disembowelment with a bayonet, it is obvious that we can collect no scientific data, owing to the nature of the experiment. The point may, however, be safely left to the imagination. It is significant in this connection, that the American statistics show that a gas casualty has twelve times the chances of recovery of a casualty resulting from an encounter with such Christian weapons as high explosives, bullets, shrapnel, and the like. The relative chances of being maimed or disfigured for life are obvious. Observation of gassed soldiers, over a considerable period of time, by the Surgeon-General's office, did not reveal any predisposition toward pulmonary trouble, which is contrary to the popular opinion.

The question of the involvement of

civilian population is important, and there is here some misapprehension. The non-technical mind looks upon a gas as something that travels stealthily, and devastates all animal and vegetable life over a large area; something that may be carried by the wind a long distance. As a matter of fact, the great problem in gas warfare is to build up a concentration, namely, to liberate on a certain objective a sufficient amount of gas to maintain a lethal amount for even a very short time. It was this difficulty that caused the change in gas-warfare methods from the cloud-attack, where vast quantities of gas are released from cylinders in the front-line trenches, to artillery gas-shell. With the latter, the objective may be smaller and more definite, and the placing of the gas more accurate. It is a mistake to suppose that any of these gases may be blown any considerable distance from the point of the burst, in any concentration that will kill. The practical limits of drift are a few hundred yards. As General Fries has stated: 'To produce a cloud that would drift six miles would require twenty pounds of liquid gas per foot of front, or fifty-three tons per mile, two miles or more in length.' This is a prohibitive amount.

In this connection, gas offers no more dangers to civilian population than air-bombs, long-range guns, or torpedoes, which have been qualified, but not abolished.

In the report of one of the committees, it was stated that chemical warfare is 'a cruel, unfair, and improper use of science.' The answer to this statement is: 'So is all warfare.' In so far as modern warfare differs from a combat between two naked unarmed aborigines, it is an abhorrent misapplication of science, whose progress is intended to bring fullness and richness into human life, instead of death and destruction. Why single out the science

of chemistry? As well condemn sanitary science on the ground that it alone has made possible the safe assembling in camp of the mammoth armies that characterize modern war.

If we concede that might does not necessarily make right, except in a pragmatic sense, then scientific warfare might be more nearly on the side of right, because advancement in science characterizes an intelligent nation, and such a nation will presumably be right more frequently than wrong. Thus its introduction into warfare might be presumptive of a faint growth of righteousness in this imperfect world.

A further reason advanced in the Conference for the abolishment of warfare gases was, that such 'warfare threatens to become so efficient as to endanger the very existence of civilization.'

Aside from whatever merit there may be in the proposition that the best way to end war is to make it grotesquely horrible and illogical, certainly that clause is no recommendation to a nation at bay, with its back to its capitol walls, to go down with the sublime comfort of having kept a parlor agreement.

Emasculated warfare is no deterrent to a belligerent nation. The knowledge that the opposed will put up a deadly defense is a more powerful deterrent. Such a nation, under such conditions, might well find justification in the fact that the after-gas of many explosives produces deadly carbon monoxide and prussic acid. An enemy seeking justification for retaliation with gas could easily find doubtful instances from this source, and spring a super-gas prepared as a defense precaution in times of peace.

In the debate following the presentation of the resolution, M. Sarraut and Mr. Balfour admitted that military chemical research, with defense as the main object, could not yet be discontinued. Thus we have the ridiculous

picture of the United States forswearing gas warfare, and yet maintaining an elaborate experimental plant in war-gases at Edgewood, Maryland. The fact that the activities of this splendid plant are now purely 'defensive' will not alter its work. Whether military measures are offensive or defensive is purely a matter of the point of view. Thus, no nation ever raised its mailed fist against another except in defense of something; and of course all preparedness of peace times is avowedly defensive only. Surely no thinking person can reconcile poison-gas research in peace times with the position of the high contracting parties to this pact. Such a lack of consistency and good faith will defeat the purpose in hand. The measure will simply resolve itself into an agreement not to use gas until the other fellow does and, in the meantime, get ready for him. We do not believe in shooting, but we're going to carry a gun. Where there are guns, there is likely to be a little shooting, as our people have good reason to know just at this time.

If this is a mere restatement of international law that has already failed of support in the test of conflict, then it is a diplomatic platitude that will weaken the whole structure of the Conference labors.

It is interesting to note that America's experts were against the resolution, that Great Britain was skeptical, that the French delegates showed more active approval, and that the Japanese and Italians were enthusiastic. In fact, an Italian representative first proposed the resolution in the subcommittee. It has been remarked that the sentiment against the resolution among the other powers was inversely as their chemical resources. It would be interesting to know Germany's attitude. It is also significant that, while the Conference conceded that no declaration

could be made as to naval warfare unless England, the leading naval power, was a party to it, yet gas warfare is outlawed by mere fiat, without Germany, which is still the greatest potential military power, chemically. At the beginning of the war there were less than half as many chemists in America as there were in Germany; less than one fifth in England, and less than one tenth in France.

In this connection, the views of an eminent English authority are well expressed in a recent book by Major Lefebure, entitled *The Riddle of the Rhine*. To Major Lefebure, the Riddle of the Rhine is the ominous, impenetrable potentialities of the German chemical trust, bristling along the Rhine and its tributaries. 'It has added economic cohesion to technical efficiency, and is to-day the largest technically efficient potential instrument of war in the world.' The author avowedly believes in the chemical disarmament of Germany, and points to the failures and difficulties in enforcing the Treaty of Versailles in chemical matters. The inherent difficulties in the inspection by a league, under agreement to refrain in times of peace from chemical preparedness, are searchingly presented. In fact, the logical end of the author's argument is a world-balance of chemical power, either through competitive militarism industrially disguised, or through agreed ratios.

Sir William Robertson, Chief of the Imperial General Staff, and later Commander of the Army of the Rhine, discusses this same subject in the following words: 'Unless and until some control is exercised over the activities of chemical factories, — which are really arsenals in disguise, — prohibitions, resolutions, and similar pious aspirations for abolishing chemical warfare will be not only futile but dangerous, in that they will lull the nation into a feeling of

security, for which there is no scientific justification.'

Robertson recognizes that chemical peace-industries cannot be prohibited; but because of their military significance, thinks that they might be reduced, and restricted to the peace-time requirements of their respective countries, *plus* an appropriate share of the world trade. In this connection it should be remembered that in 1918 Germany's dyestuff capacity was more than double that of all the rest of the world.

An attempt to avoid the tremendous advantages to an outlaw nation, highly industrialized chemically, of deliberately using gas in warfare, by trying to distribute or control the chemical activities of the several nations, is futile.

The Committee of Technical Experts, seven in number, reported against the resolution, giving as their chief reason that research and production of warfare gases, many of which have industrial uses, could not be prohibited, and that therefore 'no nation dare risk entering into an agreement which an unscrupulous enemy might break, if he found his opponents unprepared to use gases both offensively and defensively.'

This same reason was advanced for deferring air-craft limitation, and was deemed a sufficient reason, although less applicable to air-craft than to chemistry.

### III

In placing a ban upon gas warfare, and limiting the military use of submarines, the Washington Conference drifted far from its original scope.

The Conference had its origin in a problem primarily economic, namely, the need of releasing the nations from the burden of military preparedness, to the end that they might rehabilitate themselves from the effects of the World War. Furthermore, in dealing with

naval limitations and the Far East problems, the Conference was dealing with matters which could be undertaken at once. In the nature of things, there will be little change in the authority of nations within the next ten years; therefore, the Conference was here dealing with matters which not only were immediate, but which would find their fulfillment during the period when the five contracting powers would continue in all probability as the strongest international influence. It is not likely that, within the next ten years agreed upon, any single great world-power or combination of nations will arise to question the authority of America, Great Britain, France, and Japan, especially in matters in which they are primarily concerned geographically.

In attempting, however, to lay down rules for governing all future warfare, especially when these rules, as applied to the use of gas, are debatable on intrinsic grounds, the Conference was dealing with the matter of conducting future wars, and laying down dicta for all nations, for all times, notwithstanding that other powers, or combination of powers, not bound by this agreement, may dominate the world when that next war comes.

It is especially regrettable that no exceptions were made, in the wholesale condemnation of chemical warfare, to the use of smoke and nontoxic tear-gases. These are distinctly human agencies, which save life in the attainment of a military objective, and make of military tactics a game of the highest scientific skill. Natural and artificial obstacles and topographic features have ever been the legitimate agencies of the skilled commander. Think of the possibilities, through the neutralization and obscuring of certain areas with gas and smoke, in marvelously extending such legitimate strategies. And think of the humanity and efficiency of

such nontoxic gases in lowering the physical efficiency, and therefore the power to kill, by 50 per cent, through the mere enforced wearing of the gas-mask; an army of 100,000 men reduced to 50,000, and not a man scratched. While conceding the force of this argument, the fear was expressed in the Conference that the line could not be safely drawn between various types of gases.

If we assume that fighting with warfare gases is uncivilized, cruel, debasing, and on a par with fighting with dum-dum bullets and disease germs, then it is most proper that it should be outlawed. Then any nation resorting to methods which are universally condemned would find itself in the position of Germany, when she violated Belgian neutrality and torpedoed passenger ships. These very acts defeated her, for they brought America into the war, and united almost the entire world against her. It is also pointed out that sentiment effectively prevented the use of dum-dum and explosive bullets in the last war.

But there is this difference between gas warfare and such measures as the use of disease germs, and dum-dum and explosive bullets, and the sinking of hospital ships and passenger vessels. The latter have no practical military value. They may be part of a reign of terror, of an avowed programme of *Schrecklichkeit*. Moreover, as in the case of dum-dum and explosive bullets, there are substitutes which are permissible, and which make these condemned articles unnecessary.

Poison gas stands in a military class by itself. It is the most efficient, most

economical, and most humane, single weapon known to military science. It is no longer a theory, but a thoroughly demonstrated, powerful reality. It positively has no substitute. Its abandonment detracts irreparably from decisive, expeditious trial by warfare — an institution which the most sanguine do not claim that we can yet eliminate.

The chemist is a rational pacifist. He has no brief for warfare gases simply as killing agencies. He does believe that, for a generation or so to come, there must continue a measure of national defense; and chemical preparedness secures this defense with the greatest economy, efficiency, and humanity. He regrets that popular education on the subject of gas warfare dates from the early days of the World War, when, for purposes of creating anti-German sentiment, it was condemned in scathing but unscientific terms. This education has since continued through overzealous peace-societies and press exaggeration, until the most irrational views prevail upon this subject. In this manner, Lewisite, by an accretion of superlatives, has acquired powers compared with which his Satanic Majesty becomes an angel of mercy.

To the chemist, therefore, this half-hearted attempt on the part of a few nations to regulate the chemical methods of all future warfare is ill-advised and dangerous. The reasons given in the reports and debates are insufficient and illogical, and not in keeping with the historical facts, or with the high accomplishments of the Conference.

The record of the last war is too eloquent. If we would make warfare safe, we must take the soldiers out.

# THE BOY AND THE PIG WHEN THE KINGS ARE GONE

BY WILBUR C. ABBOTT

## I

AMONG those bitter, vigorous cartoons with which Raemaekers helped rouse the world against the German threat, not many years ago, one of the most striking was an adaptation of a mediæval theme, the Adoration of the Magi. Against a background of knights and men-at-arms in fierce conflict, stands a rude hut which shelters the Holy Family. Before them kneel the Three Kings from the East, offering gifts to the affrighted Child — the Emperor of Germany with a shell, the Emperor of Austria with a howitzer, the Sultan of Turkey with a scimitar!

It was a bitter jest, and it recalls another of like sort. This same theme of the Three Kings was a favorite episode in the mediæval miracle-plays. Between their moral and religious scenes were often interposed comic interludes to relieve the feelings or sustain the interest of the audience. Among the stage directions for these, still preserved to us, is one which reads, 'The Boy and the Pig when the Kings are gone.' The kings are gone, and there appears upon the stage of politics — the Bolshevik!

He is, indeed, no comic interlude. He is the spirit of the grimmest tragedy, and we see the world deeply moved by his activities, but not to laughter. For he represents more than himself, more than the Russia he has wrecked. He is the type and symbol of a great force among us; he is the living exponent of the subversive element in every land; the symbol, if only by exaggeration, of

world discontent — and he has many sympathizers in the audience. Nor is he to be driven from the stage by mere disapprobation, as we may have thought. He and the forces which he represents must be considered seriously and studied dispassionately, even scientifically, if we are to see where we stand in this crisis of the world drama.

And, in considering him, let us lay aside all the traditions of our race, all the commandments based on the sanctity of life and property — thou shalt not kill, thou shalt not covet, thou shalt not steal. Let us admit that revolutions are not made with rose water, that omelets are not concocted without breaking eggs, that what is one man's loss is another's gain, with all the other arguments for the use of force in politics. Let us omit the categorical moralities, the doctrines of Christianity, the principles of law and equity, the precepts of order and of peace, the standards of civilized society, and meet Bolshevism on its chosen ground.

What are the facts? The first and most important, when he came on the stage, was disorder. And if the thing is good, we cannot complain of that. Democracy is the child of revolution; our own liberty was obtained by force; and we long ago agreed that, if men's grievances seemed to them unendurable, they had the right to rise in arms — and die. We must not forget Cromwell, the Jacobins, and the Sons of Liberty. Nor must we forget that the established