

CHEMICAL WARFARE

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CHEMICAL WARFARE SERVICE

Of Interest To All Arms

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Edited By **STAFF, CHEMICAL WARFARE SCHOOL**

"Every development of science that makes warfare more universal and more scientific makes for permanent peace by making war intolerable." Brigadier General Amos A. Fries.

Editorial Comment.

'COMING AND GOING'.

The Third Class of Line Officers, United States Navy completed a six weeks course on February 21st. Eleven officers and two Chief Pharmacist's Mates, completed the course.

The exercises were held in the School Auditorium Saturday A.M., February 21st. Colonel Exton in a short talk congratulated the class for its exceptionally fine work and regretted that the period allotted was of such short duration.

He was followed by Captain Marshall, United States Navy, who made the principal address and presented the certificates.

On March 2nd, the Sixth Line and Staff Class reported for the regular ten weeks instruction. This class is one of the largest that has ever been assembled at the Chemical Warfare School. It is composed of thirty-six student officers from the Army and Marine Corps, National Guard and Officers Reserve Corps; of which 18 are from the United States Marine Corps, 2 Field Artillery, 1 Ordnance, 2 Infantry, 2 Cavalry, 1 Air Service, 3 Coast Artillery, 1 Signal, 1 Medical and 5 Chemical Warfare Service.

We are always glad to see them come because they are wide awake and interested in their work, bringing new life and new ideas, and keen to absorb Chemical Warfare and exchange their many and varied ideas with us.

We are also glad to welcome, in addition to the Sixth Line and Staff Class, thirty-nine Non-Commissioned Officers from the various arms of the service, who as the 8th regular class, are taking a one month course. It is a pleasure to welcome these men - who have so often been called "the backbone of the army." They are alive and keen for Chemical Warfare and are sure to be a credit not only to themselves and their organizations but to the service as a whole. We welcome you and hope your stay will be pleasant as well as profitable.

MAJOR GENERAL FRIES.

On February 24, 1925, President Coolidge signed the bill making the Chief of Chemical Warfare Service a Major General, and on February 28th, the Senate confirmed the nomination of Brigadier General Amos A. Fries as Major General for his present term as Chief of the Chemical Warfare Service and for four years beginning March 28, 1925. Although the above law is an expression of the value to the country of General Fries' services, it also places the Chemical Warfare Service in the position which it should have with respect to other branches of the Army, and is an additional indication of the importance of chemical warfare in national defense.

In connection with General Fries' promotion, the following remarks of Representative John L. Cable of Ohio, which appeared in the Congressional Record under date of February 24th, are of particular interest:

EXTENSION OF REMARKS of

HON. JOHN L. CABLE
of Ohio

in the House of Representatives
Tuesday, February 17, 1925.

MR. CABLE. Mr. Speaker, the Chemical Warfare Service, American Expeditionary Forces, on August 19, 1917, consisted of just one man. That man, however, possessed great energy, sound judgment, keen foresight, and leadership far above the average. After graduating from the United States Military Academy he served with engineer troops during the Spanish-American War and in the Philippine insurrection. Later he had charge of river and harbor work in several engineering districts, as well as highway construction in national parks. He helped win the fight for the city of Los Angeles in constructing its harbor, one of the finest in the world.

The man is Amos A. Fries. Early in his career, he was brought into contact with Gen. John J. Pershing. On one expedition in the hostile Moro country, Capt. John J. Pershing, United States Cavalry, who commanded the expedition, had First Lieut. Amos A. Fries with him as his chief engineer officer. No doubt the energetic way in which he performed his duties as engineer officer of this expedition had much to do with the choice made by the Commander in Chief of the United States Expeditionary Forces when, in France, he looked around for a man of sufficient initiative and capability to head a new department of his army.

At the time of his appointment the American Army had practically no knowledge of gas warfare, either offensive or defensive - no gas or chemically trained officer personnel. The American Army was not equipped with one single gas mask or any other protective appliance. Probably not 1 per cent of its personnel knew how to put a gas mask on or when it should be worn. With his appointment General Fries

went to work upon the gigantic task and the gas service began to grow. It was reorganized and on August 16, 1918, the Chemical Warfare Service was created and General Fries commissioned brigadier general, United States Army, and placed in charge as chief. He built up the service until on the day of the Armistice the overseas service consisted of more than 600 officers and 3,000 men. From apathy toward offensive use of gas, the Army had been converted to its extensive use. The shell program on the day of the Armistice provided for 25 per cent gas shells and also for the use with the Army of more than three times the first authorized number of special gas troops.

General Fries has been awarded the Distinguished Service Medal (United States); the commander of the Legion of Honor (France); and the Companion of the Order of St. Michael and St. George (England). His Distinguished Service Medal citation is as follows:

For exceptionally meritorious and distinguished services. As Chief of the Chemical Warfare Service, he was charged with the important task of training and equipping our troops for a form of warfare in which the American Army had had no experience prior to the present war. Both in securing proper defensive measures against gas and in developing new methods for its use as an offensive agency, he performed his arduous duties with marked success, thereby rendering valuable services to the American Expeditionary Forces.

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The House to-day in passing the bill giving General Fries the rank of major general is paying a just tribute to him for his loyal service to the United States.

WOMEN WAR AGAINST WAR.

From The Pathfinder, February 14, 1925.

Nine hundred women, representing nine national women's organizations with 5,000,000 members, met at Washington to probe "the cause and cure for war". Though not agreed as to how war may be ended, they were unanimous in the opinion that it can and should be outlawed. Mrs. Carrie Chapman Catt, general chairman, explained that the conference had no quarrel with the army or navy because "they represent the old system of defense, which must continue to be honored and respected until a safe and sane substitute is found".

"There is real danger that obsolete-minded generals, throwing stones at peace-makers, and hysterically-minded searchers for peace, hurling bitter words in return, may jointly create a barrage of vilification, which will obscure the real question", she warned. The nine women's organizations, she said, created the fact-finding body for their own education. With few exceptions the speakers advocated the league of nations. However, Mrs. Catt denied that the session was league propaganda.

THE SPIRIT OF SERVICE.

By Major Henry P. Fry, CW-ORC.

Prior to the passage of our National Defense Act of 1920, the military policy of the United States, as shown in the history of all of the country's wars, consisted largely of the practical application of the well-known maxim: "God takes care of children, drunkards, and fools!" Up to this time we had no military policy at all, and it is quite evident that had the United States not been a creature of manifest destiny the colonies would never have been separated from the mother country, the states would never have been welded into an indissoluble union, and we would not enjoy the enviable position among mankind we hold today.

In all of the splendid achievements recorded in American military history the one fact that stands out most strikingly is this: in all wars, the genius, the real leadership, the success of engagements, and the ultimate results came from the work of the professional soldier. We have had for years a splendid regular army, as far as the calibre of the personnel has been concerned. The trouble has been that there has not been the available numerical strength to handle adequately the problems of national defense.

Past history has demonstrated that the American people have failed to appreciate the fact that government is a business proposition, and that in any big business enterprise the work must be handled by experts in order to insure a maximum of efficiency. The World War proved that military operations, in order to become successful, must be carried out as any other big enterprise, as a business and professional undertaking. It not only showed the folly of hap-hazard military systems, but it threw them permanently - let us hope - into the discard. For the first time in the history of the United States the people learned to appreciate the value of the professional soldier, for the reason that the regular army was brought into intimate contact with practically every American family. The Army was accorded, in a measure, its just due, and under the Act of 1920 it now constitutes the brain of our country's national defense.

The War Department has wisely changed the status of the regular army from that of a group of policemen to that of a body of school teachers. Only one who has been in intimate contact with the regular service for the past twenty years can appreciate the great change that has been made in the status of our regular army. All over the country, the officers of the regular establishment are teaching the people the value and benefits of military training, and are inculcating the principles of higher and better citizenship.

As an auxiliary to this brain of the national defense, the Act of 1920 established the Officers' Reserve Corps composed of men of education and military leaning who might be competent in case of a national emergency of assuming command of troops or performing such other duties as might be demanded of them. From the lowest to the highest rank in the army commissions have been issued to men of all degrees of business and social standing and all kinds of mentality.

A commission in the Officers' Reserve Corps is an honor of which any man may well be proud, and it should instill into a man the SPIRIT OF SERVICE - service to his country and to his fellows. But, holding a commission in the Officers' Reserve Corps does not *ipso facto* make a man an officer, nor does it materially benefit the country. All men are more or less imbued with vanity, and it appeals to one's vanity to hold a commission in the United States Army, to a uniform, and to bear a title as "Captain" or "Major" or "Colonel".

As a business or professional proposition, however, neither a commission nor a title amount to anything whatever unless there is behind it the SPIRIT OF SERVICE that will make the officer endeavor to put himself in the picture as a vital, component part of the national defense. In other words, the actuating motive for being in the Reserve Corps at all should be to fit into the national defense machine according to that which is most adaptable to one's abilities, and to qualify - as far as one's occupation will permit - for the maximum degree of efficiency in a specific line of duty.

Holding a commission in the Officers' Reserve Corps is very much like carrying a bank account. One can withdraw from a bank only in proportion to what one deposits. Mere membership, holding a commission, or wearing a title is not enough. One must constantly make deposits in the shape of study, interest, cooperation, and self-improvement, or face the condition where one's check is returned from the bank marked "Insufficient Funds" or "No Account".

When an emergency strikes this country relative military rank will and should be re-adjusted. As a matter of plain common sense any man who devotes all of his time to the study and practice of a profession must necessarily know more about it than the man who follows that profession as a side-line. In other words, as a primary proposition a First Lieutenant or Captain in the regular army who devotes all of his time to his profession - assuming that he qualifies as an expert - is worth more to the country than an officer of higher rank in the Reserve Corps, whose service and interest are secondary to his normal occupation. Therefore, no matter what may be one's present rank in the Reserve Corps, say a Major or Colonel, for example, in a vital emergency calling for the employment of large military forces, the regular officer now serving as a Lieutenant or Captain will doubtless be commissioned to a higher rank, and with his experience and ability will be accorded higher command. This principle is sound business, and should be recognized by the entire Reserve system.

The SPIRIT OF SERVICE demands from the Reserve Officer a recognition of the fact that relative rank is a minor factor in the building of a system of national defense, and the ideal reserve officer is the man who knows that he is not too good to lay aside his rank altogether, if necessary, and take his place even as an enlisted man, if by so doing, his action will mean protecting his country from disaster.

In according to the officers of the regular service the priority of higher command in an emergency than that held by them in time of peace, this must not be construed as meaning that all officers

who are employed by this government are Gods of War or creatures of any superlative degree of ability or intelligence. They are most decidedly not. The officers of the regular service are a group of American citizens ranging in intelligence and ability about as the average of any other profession. In such a group there are necessarily a number of men of inferior ability. These men, in an emergency, will fall of their own weight.

The door to military advancement and leadership is not closed to the civilian soldier, however, even in the recognition of the first call that belongs as a matter of sound business to the regular officers. For the first time in our history the opportunity for advancement is open to civilians in the make-up of the Officers' Reserve Corps. With service and correspondence schools, chances for active service with regular troops, staff details, and numerous other advantages never before enjoyed by civilians, the door to advancement is very much open to any officer who wants to avail himself of the avenues of assistance. Securing this valuable instruction is a matter that is entirely up to the officer himself, and is limited only by the extent of his ambition and his facilities for self-improvement. Nobody is going to look him up and shoot military training into his body with a hypodermic syringe, but any officer who does not secure the latest and best things in the field of military education in the United States today has only himself to blame.

It must be admitted, however, that any reserve officer who endeavors to compete with a regular officer for advancement and the acquisition of professional skill starts off with a handicap, due to lack of time and experience in the work, but it is not beyond the bounds of possibility for a reserve officer to develop a degree of efficiency equal to that of his brother of the regular service. It depends entirely on the individual. If a Reserve Officer can develop his efficiency to the point of real professional ability, he will find that there is no group of people in the world more eager or more willing to recognize and acknowledge it and give credit where it is due than the regular officers of the United States Army.

We, who have been honored by being given commissions in the Officers' Reserve Corps, owe it to ourselves and to our country to inculcate in our minds the SPIRIT OF SERVICE.

The Regular Army is now a big school; its officers are school teachers; we, as a matter of fact, know but very little about our respective jobs; and the sooner we all of us get down to brass tacks and take stock of ourselves and our short-comings, the better reserve officers we are going to make.

Summing up the situation in common parlance: IT IS'NT WHAT YOU'VE GOT ON YOUR SHOULDERS THAT COUNTS; IT'S WHAT YOU'VE GOT IN YOUR BEAN.

So let us all go to school and study and learn all we can learn about our little part in the national defense, and let us see if 1925, when it comes to a close will not be able honestly to record:

The Officers' Reserve Corps has justified itself because it has made good - because it has learned the SPIRIT OF SERVICE.

THE PRESENT INTERNATIONAL SITUATION AS REGARDS CHEMICAL WARFARE AND THE IMPOSSIBILITY OF SECURING THE ASSURED ABOLITION OF THE USE OF GAS IN FUTURE WARS.

By R. D. McLeod, Jr.

Theoretically Chemical Warfare was abolished at the Limitation of Arms Conference held in Washington on February 6, 1922. At this time the leading powers of the world (except France) agreed not to use toxic gases or other analogous materials against each other in any future war which might occur. However, Chemical Warfare has a very active ghost which seems to prosper as the years go by, every article we read which discusses future wars lays special emphasis on either Airships or Chemical Warfare. While the use of chemical agents has been forbidden, the manufacture and research of both offensive and defensive chemical agents is allowed and every year brings forth new discoveries and improvements which vastly increase the power of Chemical Warfare. At the present time there is no doubt but that the finest trained and equipped army in the World if it lacked protection against gas would suffer heavy casualties and be transformed into a fleeing rabble by a series of well executed gas attacks.

It is absolutely impossible and even undesirable to stop the growth of Chemical Warfare as it is but an offshoot of the great age of chemistry into which we are now passing. The whole World is turning to chemistry as the foundation of all commercial prosperity. The controlling hand in our modern industries is no longer the manager of the mill but is the chief chemist who tells the manager when the process is at fault and gives the proper remedy to be applied. The development of Organic Chemistry with its coal tar and petroleum industries is one of the most important and far reaching epochs in the history of the World.

Industrial developments have always been followed by similar developments in weapons of War. This has greatly advanced the progress of civilization by giving victory to the people whose higher intellect enabled them to produce superior arms. The better weapons of the Romans forced the civilization of Rome on the physically stronger and more numerous tribes of Northern Europe. The superior arms of the descendants of those same North Europeans, obtained through knowledge based on that received from Rome enabled them to conquer the Earth. As Rome fell when her slaves gained the knowledge with which she held them in bondage so will the White races fall if the colored races are able to surpass the Whites in the use of the latest creations of science.

While industrial advances have always been followed by advances in arms this does not take place over night. The military authorities are notoriously conservative and look with disfavor upon new methods of waging war until actually forced to adopt them by a more progressive enemy. Napoleons great victories were largely due to his ability to mingle new weapons with old tactical principles producing a combination which was unbeatable until his enemies learned his methods, after which their superior resources gave them the victory.

It was many years after the first introduction of steel before brass was discarded in arms and armor. Gunpowder was likewise slow in winning its place as king of battles and was denounced as being inhumane, unchivalrous, and even considered impractical. Even the change from sail to steam was a slow process and our Navy still retains a few cruisers in active service which have sails as auxiliary power.

In the late World War modern industry brought forth three new developments of prime importance: the airplane, the submarine, the use of chemical agents. Two of these being developed by the Germans became the victims of the Allied propaganda which reached such a high state of development during the war as to almost win a place among the new weapons. As a result of this propaganda there was a strong demand, after the war, to prohibit the use of Chemical Warfare and Submarines despite the fact that they merely accomplished in a new way the objects to be obtained by any other means of warfare, namely, the destruction of enemy forces and the weakening of his power to resist.

After the war attempts were made to abolish submarines and Chemical Warfare but they have been found as hard to eliminate as war itself. If rules of war could be enforced the first rule to be made would probably be that no more wars would be fought, after which further rules would be useless. Minor regulations which it is to the advantage of both sides to respect and which could cause no radical change in the outcome of the war if broken such as protection of hospitals, prohibition of use of dumdum bullets, etc., can be enforced. However either submarines or gas could easily change the course of a war and will undoubtedly be used as a last effort by a nation on the verge of defeat or as the first stroke by a nation bent on aggression and desiring to crush its enemy at the start.

It is impossible to conceive of any people failing to use any weapon at their disposal which will save them from defeat, particularly in the case of a war between races where the very existence of their civilization, pride of race, sanctity of home and religion would be at stake. We cannot halt the advance of progress. Science has forged a new weapon which we must learn to use and protect against if we are to survive. Therefore it is imperative that we come to the realization that Chemical Warfare has come to stay.

CHLORINE GAS CURES MANY.

Chlorine gas is now curing more persons suffering from respiratory diseases than were killed by the gas the Germans used against the Allies in 1915, according to Brig. Gen. Amos A. Fries, Chief of the Chemical Warfare Service of the United States Army, in an address last night before the Brooklyn Institute of Arts and Sciences at the Brooklyn Academy of Music.

"In 1915 on Flanders fields," said General Fries, "gas was used as a deadly weapon to mow down men by the thousands. Today instead of human lungs being the target, it is waging war on the germs responsible for so many of our colds. If the future vindicates the indications of the present, and we have no cause for doubt, it is believed that this chlorine gas will save in peace more lives each year than gas destroyed in the entire World War". *From The New York Times.*

"WINTER PLATTSBURG" 2ND CORPS AREA - RESERVE OFFICERS.

The Corps Chemical Officer, Captain Adrian St. John, delivered a short, impromptu talk on Chemical Warfare to the Reserve "Line and Staff" Class at their Central Conference on the evening of February 5th.

Captain St. John, in brief stated as follows:

"I am going to attempt to tell you something about Chemical Warfare in the 15 or 20 minutes allotted me but I feel that even with this limited time to jump right in to what the Chemical Warfare Service is doing without explaining its position in our National Defense Policy or its position in international negotiations would be a complete waste of effort. Everyone knows that as far as paper documents go Chemical Warfare is wiped from the field of battle. Sensible people who make their living by occupations other than legal or international law realize that paper documents are only as definite and as compulsory as their signers. There has been but two new ideas developed in international negotiations within the last 200 years and these two, namely, the World Court and the International Chamber of Commerce have absolutely no effect on the use of chemicals in war. Therefore we are concerned with documents which have been tried and found wanting in the past. We are concerned with things that we know to be useless when the crisis arrives.

History records Leagues to prohibit war as early as 1345; and even before that time there were negotiations which had that basic idea. Although the papers boomed our Limitation of Armaments Conference and tried to impress on the American people that it was a brand new idea conceived by an American mind we know that such conferences are as old or older than the U. S. itself. It must be admitted that some of them were successful, but most of them were failures. The most important and successful one that very closely parallels the American Disarmament Conference was the one negotiated between Argentine and Chile between 1893 and 1902. This Disarmament Conference together with other documents calling for compulsory arbitration, perhaps better known as the "Argentine Formula", has been lived up to to the present time. This is the most successful of all the conferences and its success is due to the fact that all arrangements were made by British and Argentine financiers, negotiated with bankrupt countries and by their control of finances forced the signing nations to live up to the agreements.

There is no parallel to this in our last Disarmament Conference. There is nothing in our Disarmament Conference that makes it any more binding than the past Hague Conferences. The clauses concerning the use of chemicals in warfare as laid down in the Hague Conferences of 1898 (signed 1907) differ in only a few words from the clauses on Chemical Warfare as now incorporated in the Limitations of Armaments Agreements.

That fact of history proves that in a crisis for national existence the very lawyers who made their living by drafting up the original clauses will be called in and make double the amount to pick flaws in the same clauses when it is necessary to break them. Whether or not the lawyer mind will be satisfied, if national existence requires the clauses will be broken.

The National Defense Act of 1920 organized as a separate branch of our army the Chemical Warfare Service and allotted them definite duties. These duties have been augmented and changed considerably since the act was passed due to changing circumstances in world affairs. Briefly, the present War Department policy in regard to Chemical Warfare is this: - The service is charged with preparing an adequate defense against the use of chemicals and in so preparing defense they are permitted to investigate offensive war gases and their tactical use. In order to solve the defense problems against such an offensive the Chemical Warfare is also charged with the training for the defense against chemicals of the entire army. They are to be so organized that after hostilities start they shall be able to use gases offensively if the enemy should instigate such use.

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In the event of war the Chemical Warfare will move to supply points sufficient defense equipment to supply 10% of the mobilizing units. With this 10% equipment they will train all the mobilized units in defense prior to the time they use the Concentration Area. The defense equipment will remain at the Concentration Area and the troops when they reach the front will be supplied with every gas defense equipment if the occasion demands. At the outbreak of hostilities one Chemical Regiment, war strength, will be organized and trained ready to take the field. The basic training, however, will be entirely in the use of Smokes and Incendiaries which are the chemicals not prohibited by any treaty. This regiment, however, will not take the field until the enemy has started its use of chemicals. Up to this time Smoke in chemical weapons may be used in battle by all branches of the army, but this is not definitely determined. Smoke will be used in Candles and Grenades and in certain Artillery S shells.

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A brief summation of the tactical use of lethal chemicals in war will now be given. During the World War there were 54 different gases in use. Toward the end of the war this number dwindled to approximately 12 and further research and development since the war have permitted us to retain approximately 8 good war gases. For the purpose of getting a quick conception of their uses we may divide lethal gases up into two classes, persistent and non-persistent and then consider under each of these classes the king gas of the crowd. The non-persistent gas means one that dissipates rapidly in the air. It is difficult to retain its concentration. It requires enormous quantities to build up the concentration, but the

concentration once built up will kill quickly. The king gas in this class is Phosgene which kills in three seconds when the proper concentration has been built up. It disappears in 3 to 6 mile winds in about five minutes in the open and in about fifteen minutes in terrain covered with brush or woods. In hollows where the air circulation is bad it will remain about one-half hour. It only requires a small amount of the gas when this amount is in the proper concentration to cause death, in fact the quantity that can be scooped up in the face piece of a mask when putting the mask on is sufficient to kill. That is one of the reasons why the mask is "cleared" after it is adjusted. Phosgene can only be used in large capacity weapons and weapons that have a fairly rapid rate of fire.

Persistent Gases mean that gases that persist in staying where they are put in spite of weather and other conditions. The king gas in this class is Mustard Gas. Mustard Gas under weather conditions such as we find in the vicinity of New York during October and November will remain on the ground 13 or 14 days. There is a specified quantity for 100 x 100 yard area and when this quantity is placed it will saturate the air passing over this area for the full 13 or 14 day period. The air moving along with the wind currents will carry the gas along over 1,000 yards losing its gas concentration as it proceeds. Air with small concentrations of this gas if breathed for a long length of time, will kill or air with a large concentration of gas if breathed for a short length of time will kill. Experiments to date have not definitely fixed on these concentrations or time necessary to kill, but it is definitely certain that the concentration 500 yards down-wind if breathed for one-half hour will cause death. It is thus seen from this that an area properly saturated with Mustard will protect or defend an area 500 yards down-wind.

Mustard Gas is the greatest defense weapon known in warfare to-day bar none. There has never yet been any other weapon that can be deposited by man and left to continue its defensive action for two weeks without any regulation or control by man-power. This fact was known and made use of by the Germans in many places during the war. It was the main consideration that permitted the Germans to conserve man-power in the defensive sectors and withdraw them and place them in the area to aid in the main attack. It is a concrete application of the principle of economy of force.

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There are other gases which will not be considered here and Smoke and Lachrymators will not be mentioned because we figure that you are all fairly familiar with their uses. It might be interesting to consider the defense methods and the First Aid Treatment necessary for vesicant gases such as Mustard and Lewisite. It first must be understood that it is gas vapors that cause the greatest amount of damage and that the vapor from vesicant gases will penetrate clothing or any building where air penetrates. The soldier in the

ordinary uniform who remains in this vapor for any length of time will receive burns over the body. The most severe burns being in the more tender places and parts of the skin that are most moist. The gas mask will protect the respiratory system and face and eyes, but naturally can not protect the body. During the war the protection against this vapor was oil suits which were about as deadly as the gas itself. Men could not move in them or do any work without becoming exhausted, air could not get in and the skin could not breathe. Very few of these suits were issued and consequently we received large numbers of casualties from body burns. The vapor also contaminates food that is not in air-tight containers; this also caused considerable difficulty during the war.

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Once the burn has been received it is impossible to cure it in any short space of time. There is no definite known cure to date. The burn first appears on the flesh in a red blotch similar to sunburn. This develops later into a water blister which is puffed up with water containing some of the gas and this continues to eat on down into the skin and into the bone. If the burn is treated immediately and before the blister appears its action can be considerably retarded. The method of treatment in this case is simple as it merely consists of washing the affected part with lye soap and water or in rubbing the spot with kerosene oil and a cloth, then throwing this cloth away and repeating the operation. It is not well to rub too long with the same cloth as this many times re-affects the skin. Methods of covering the affected area with paraffin, etc., which were used during the war were found to be useless. The latest method recommended now is Dakin's Solution, which is 5% strength Hypochlorous Acid or where the wet dressings are not practicable, Chloramine -T in sodium stearate.

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It is very essential that every Reserve Officer know something about Chemical Warfare. The Reserve Officers in the T. A. Group will be ordered on active duty immediately on the outbreak of war. Mobilization and Basic Intensive Training in the essentials of their separate arms will be paramount. Very little time can be devoted to Chemical Training and not only that, but it is doubtful if the present system will train all the men in just putting on and taking off the Gas Mask much less train them in what to expect from chemicals. When they reach the front they will be in the same position as regards Chemical knowledge as the British and French were at the time of the first gas attack. The Gas Mask and the Gas Mask Drill is only a small part of the defense methods against chemicals. The bulk of our troops will have to learn every defense procedure from actual experience in action should the enemy use chemicals. Once the enemy initiates the offensive use of gas then the balance of the men of course will receive full training. It is therefore essential to self protection that each officer know what the gases do and how to take care of himself should he be unfortunate enough to become gassed.

A LETTER FROM CLEVELAND.

8311 Decker Ave., Cleveland, O.
February 12, 1925.

Dear Comrade:

The annual "Get-together" of the gang in and near Cleveland was held this year the Saturday before Armistice Day at Hotel Winton. Our usual good time was had, and all were in favor of making next year a great time for a greater reunion.

The following letter was sent to Brig. Gen. Fries by telegram, "The First Gas Reg't Ass'n. of Cleveland representing the six companies in France, at their annual meeting tonight send greetings and best wishes to you. We cordially invite you to be with us next year and trust it will be possible for you to do so".

Gen. Fries replied, "I was indeed glad to have the telegram of the First Gas Ass'n of Cleveland at their annual meeting Nov. 8th. Nothing could give me greater pleasure than to be able to be with you next year, and I shall shape my plans accordingly. In the meantime, if any of you get to Washington I trust that you will not fail to come in to see me.

Very sincerely,
Amos A. Fries".

Twenty years from now we will travel across the continent to get to a reunion.

We are going to have a great reunion here at Cleveland this coming year, but we need co-operation, and above all to get this we need the *correct addresses* of all the fellows in and around Cleveland. So help us out, it will only take a few minutes to give us yours and any that you may know. It will take several months to correct this, but once we do we will mail one list to all the ones that are on the list.

Our meetings have always been great successes, and of course most of the time was spent in fighting the war over again - "Major Weinberg's Badger Fight", "Baldy Lenzeni's Laundry", "Dick Spires Bath", "B Co's Mutiny at Helfaut", "The Marines at Chaumont", "Charley Streets - The Major" (you know the word that fits here), and dozens of others that are familiar to the whole gang.

Plan to come this coming year, and you've got almost a whole year to arrange for it, so let me hear from you as soon as you can.

One of the old gang, Stuart H. Prescott (B Co) who died in France lies buried in Brookside Cemetery here in Cleveland. A great many of us knew Prescott and it would be altogether fitting if we placed some kind of a wreath, or some thing of the sort, in memoriam on his grave this Memorial Day, May 30th.

So let us know how you feel about this when you send your address.

Yours for a great meeting,
(signed) John F. Straub
Sec'y, Cleveland Assn.
First Gas Regt.

THE WEATHER MEN OF THE ARMY.

By Lieut. I. Sass, S. C.

Reprinted from Recruiting News, February 1, 1925.

One phase of Army Training which rarely receives much thought is the training of meteorologists or weather observers. Since this phase of training was handed over to the Signal Corps a regular course in Meteorology has been incorporated into the Signal School at Camp Alfred Vail, New Jersey.

This course is designed to teach a man in five months' time to become a proficient observer and to arouse his interest sufficiently for him to continue his studies along theoretical lines. The greater part of the school time is devoted to actual practice in observing, computing, making messages, cleaning and repairing instruments, etc. However, physics, theoretical meteorology, algebra and trigonometry are also taught, as their proper appreciation helps to make a man understand the why of his work.

Many civilians do not really appreciate the value of meteorology in relation to the Army in general. Weather forecasting to most people means merely a "guess" as to whether or not it will rain the day following. However, it must be considered that present weather observations not only forecast state of weather, but also winds, temperature, storms, and even wind conditions in upper strata of the air. The last named is especially desired by the Air Service and the Field and Coast Artillery (since modern projectiles spend most of their time in flight at considerable altitudes).

It is apparent that Chemical Warfare Service activities are largely dependent upon surface wind data for their proper functioning. A concentration of gas, upon the enemy supposedly, can easily become a disaster in boomerang fashion if the wind shifts considerably in direction, an event which is by no means uncommon. A gas attack can also hold up the advance of one's own front line troops by the failure of the gas to dissipate within a certain time after coming within enemy territory. Such gas dissipation depends not only upon the wind, but upon conditions of the ground surface, of humidity, and of temperature.

In artillery firing, especially anti-aircraft and long range, current data as to wind directions and speeds at various air levels are extremely important. All firing tables are computed with extreme care, but they lose a large percentage of their value when guesswork has to be relied upon for wind data. For use in arranging such data for the artillery's purpose, the meteorological equipment at all observation stations includes a special plotting board and special protractors, and the data are arranged in a separate code containing the information desired in terms of "mils" and "zones" as these terms are used in artillery computations.

The Quartermaster Corps, whose responsibility in feeding, clothing and sheltering the Army is a vast job, is very largely dependent upon statistical, rather than current meteorological data, especially in field operations in unknown or foreign territory.

How many blankets will each soldier need - in winter, in summer? What kind of clothing, woolen or khaki, or both? How about rain-coats, overcoats? And what kind of foods will be needed? And if perishables are needed or are feasible, what are the facilities for their preservation? Refrigerators? Will ice be available? And is the climate suitable for tents or will barracks be necessary? And the question of fuel, etc. Questions without end, and all of importance, present themselves. Their answer depends almost entirely upon compiled meteorological data covering a period of years.

The Air Service, during both peace and war, especially the former, is a constant user of meteorological data. As a matter of fact, it is safe to say that about 75 per cent of the work of the meteorological section of the Signal Corps during peace time is for the direct use of our fliers. The latter are indeed forbidden to "take off" without consulting their respective operations officers about "wind aloft" conditions and storm forecasts. This action constitutes another large step in the efforts to minimize the hazards of flight. Statistical data are used for two purposes chiefly, first, in planning the erection of airdomes and flying fields, and second, in connection with extensive flights. During the "Round the World" flights, for instance, it was not generally known that some of the Army's best meteorological personnel was on duty all the time during the flight, stationed at various points along the route and adding their "bit" (and quite a helpful bit it was) toward the successful execution of that enterprise.

And thus it is with many other, though smaller, users of meteorological data. Extensive field operations of any body of troops depend a good deal on the weather as well as characteristics of the terrain.

For all the reasons mentioned above, considerable attention is devoted at the Signal School to the perfection of quick and accurate observers. They, in conjunction with radio operators who send the data in, and forecasters at Washington, compose a highly trained team.

Regarding the instruments used, since these are precise, delicate and quite expensive, it is necessary for the man handling them to be accurate, careful and thoroughly trained in method. One of them, the theodolite, is a converted telescopic arrangement mounted on a tripod and used for sighting on moving balloons sent up for upper air data. The barograph and barometer are used for atmospheric pressure measurements. Thermometers of all sorts and thermographs are used for temperature determinations. The quadruple register, an ingenious clock-driven mechanism, automatically registers on a time graph, wind direction, wind velocity, sunshine and rainfall. All these instruments are of standard make and are practically, if not actually, identical to those used by the U. S. Weather Bureau.

Statistics are kept on all data registered and periodical reports are sent in by mail, telegraph and radio. Various forms are in continual use.

For the man who desires a fairly broad scientific education, equivalent to that covered in high school, and who, in addition, is desirous of getting in "on the ground floor" of a fairly recent

technical occupation, the Meteorologists' Course is just the thing. In addition to fulfilling an obligation to his Government the man is benefiting himself by obtaining free of charge the theoretical knowledge of a new science, one that is bound to become more and more a factor of importance as flying becomes more general.

GAS WARFARE NOT FORBIDDEN BY ANY INTERNATIONAL AGREEMENT.

From Army and Navy Journal, February 7, 1925.

The idea prevails in this country that the treaties emanating from the Washington Arms Conference operate to prevent the use of gas in the next war. This is an erroneous belief which is extremely dangerous to our national defense. The clauses having to do with gas do not operate unless ratified by the various countries concerned. They have not been ratified. Therefore, the other countries are free to use gas. It is a well-known fact in the Army that in spite of the efforts of the Chemical Warfare Service, even the few Regular and National Guard troops we possess are not equipped to defend themselves against a gas attack. What gas can or cannot do in war is a question of the development of new gases, the ability to supply gas in quantities and its tactical uses on the battlefield. All of these questions, as important as they are, are subsidiary to the main one which is that today we are not properly prepared to protect ourselves against the use of gas on the part of other powers, who, according to existing international agreements, are perfectly free to use it.

INITIATIVE.

From The Come-Back.

The world bestows its big prizes, both in money and honors, for but one thing. And that is Initiative. What is Initiative? I'll tell you: It is doing the right thing without being told. But next to doing the thing without being told is to do it when you are told at once. That is to say, carry the message to Garci: those who can carry a message get high honors, but their pay is not always in proportion.

Next, there are those who never do a thing until they are told twice: such get no honors and small pay.

Next, there are those who do the right thing only when necessity kicks them from behind, and these get indifference instead of honors, and a pittance for pay.

This kind spends most of its time polishing a bench with a hard-luck story. Then, still lower down in the scale than this, we have the fellow who will not do the right thing even when some one goes along to show him how and stays to see that he does it; he is always out of a job, and receives the contempt he deserves, unless he happens to have a rich Pa, in which case Destiny patiently awaits around the corner with a stuffed club. To which class do you belong? - The Vocational Messenger.

NEW FORMS OF WAR GAS.

From St. Louis Globe Democrat, January 23, 1925.

In its ability to make New York laugh the theatrical craft may be but a poor second to the Chemical Warfare Service. For it has a gas, intimated a speaker who recently addressed the Foreign Policy Association in that city, which would literally make the New Yorkers laugh themselves to death. There is not the slightest possibility, of course, that this gas will be used to dim the popularity of Will Rogers and others, but it is important as further evidence that future warfare would be in no wise a laughing matter.

A still clearer impression of war as it might be is conveyed by statements of Captain Adrian St. John of the Chemical Warfare Service. In addressing the New York chapter of the American Association of Engineers, he declared that all but twelve of the fifty-one gases used during the world war had been discarded. But the United States, he said, has two gases that will penetrate any gas mask now in use. Although not fatal in the quantities entering the mask, these gases would cause sufficient dizziness to force the wearer to remove the mask and expose himself to certain death.

There would be little reason for concern in this development of the chemistry of warfare if it were confined to the laboratories of the United States. But deadlier gases are being developed in other countries, just as they are here. Occasional statements as to the progress that is being made by our own scientists simply serve as a reminder that those of other countries have been working toward the same end. It is not necessary to picture New York laughing itself to death, or other cities of this country suffering from the effects of gas let down by enemy planes, to appreciate the fact that the destruction wrought by chemicals in any great war of the future might reach a scale unapproached in the World War. Views as to what gas could do to New York, however, are interesting.

That it would become a "burning charnel house" under an attack of poison, asphyxiating and incinerating gases, is the assertion of Brigadier General Lord Thomson, Secretary for Air in the recent British Labor Cabinet. "In future Wars", he added, "we will have to give the civilians gas masks and train them to use them". And, says Capt. St. John, planes flying over New York "could spray mustard gas on the ground in such a manner that it would give off its vapors for thirteen or fourteen days, and any person in the vicinity probably would die".

Leaving New York out of the picture, it is possible through these statements to gain some faint conception of the unmerciful disaster that would befall participants in another war. The old saying that men always have and always must display their fighting spirit does not mean much when this wholesale slaughter of noncombatants, men, women and children, is envisaged. Nothing argues so strongly for determined effort to end war as the simple facts as to the development of chemicals as war weapons.

CHEMISTRY WINS RECOGNITION.

From Industrial and Engineering Chemistry, March 1925.

Among the acts of the present short session of Congress which we may heartily approve is the one advancing the chief of the Chemical Warfare Service to the same rank as the chiefs of other service departments and the reappointment of Brigadier-General Amos A. Fries as chief of the service for the ensuing four years. Both actions are victories for chemistry and are significant.

Those who have looked upon the Chemical Warfare Service as an insignificant and temporary branch of the service to be ultimately combined with some of the well-established branches, must now recognize that the service has come to stay and that they must adjust themselves to the new order of things. The bill to make the chief of the service a major-general was passed, not because that chief happened to be Brigadier-General Fries, but because Congress and many of our military authorities have become better acquainted with the real status of a service that has suffered much from prejudice and misrepresentation. However, had not the present chief served so well under trying conditions, the change in rank might have been made with much greater difficulty.

Brigadier-General Fries has been reappointed because he has developed with his job. His early training did not include chemistry, and when in France he was ordered to create a Chemical Warfare Service he saw the wisdom of surrounding himself with men who knew chemistry and devoted such time as he could spare from administration to the development of tactics in the field. His continued contact with chemistry has given him unusual insight into that part of the science involved in chemical warfare and he has gained much by observation. From the viewpoint of technical men he has become invaluable to the service, since he appreciates to a greater degree than most men of the regular line the methods and idiosyncrasies of men engaged in research. He has put up a good fight for the service in many quarters and, though funds have been inadequate, has been able to keep together a competent staff and press the more important problems of the service.

But notwithstanding these victories for chemistry the Chemical Warfare Service is still being treated like a step-child by those in charge of Army appropriations. The funds available for the service are about one-third of one per cent of the total Army appropriations and have made necessary such reductions in the technical staff that essentially new things cannot be undertaken and much peace-time development work must be entirely neglected. Let us look at the facts.

Perhaps you have forgotten that before the treaties drawn at the Limitation of Armaments Conference in Washington were to become binding they were to be ratified by the various signatory powers and certified copies of the ratification deposited in Washington. It is now several years since that conference. None of the ratifications have been deposited in Washington, and the treaties respecting

submarines and chemical warfare have not been ratified by one of the powers participating in the conference. The United States is not a party to the Hague Conference nor one of the powers signing the Treaty of Versailles. In so far as treaties are concerned or might be observed, we are therefore open to attack by any nation at any time with such weapons as they may choose to use. The appropriations for research and the maintenance of the Chemical Warfare Service have concurrently decreased from \$1,350,000 in 1922 to \$700,000 in 1925, to which latter figure should be added \$207,980 on account of reclassification, which means that this sum is to be added to salaries and does not provide additional staff, equipment, or supplies. There has been a steady decline in such reserves of material as were on hand at the close of the war until the place has been reached where the annual appropriations for the service must be substantially increased if the present level is to be maintained.

But would the present level suffice? A correspondent in a recent popular weekly states that Germany has stored, ready for use, sufficient modern gas masks to provide five for every soldier authorized by the treaty. In the United States we have one modern gas mask per hundred enlisted men in the Regular Army and National Guard.

Italy, shortly after Mussolini came into power, established a chemical warfare service modeled along the lines of our organization but with twice the number of officers. England appears to be giving chemical warfare the same importance as its three great arms of national defense - Army, Navy, and Air Service. Chemical warfare has been placed under a committee headed alternately by a high ranking officer of the Army and Navy. Russia, like England, has placed chemical warfare on the same plane with other important branches of her service. Japan has shown great activity along chemical warfare lines, and it is stated that four divisions of troops have been abolished so that the funds thus made available can be spent on the Air Service and the Chemical Warfare Service. Japan has been buying large quantities of chemical warfare supplies from Germany and elsewhere, and is known to be availing herself of the services of the ablest scientists from the German chemical field. France is perhaps as well prepared to use chemical weapons in war as any other nation, though less is known about her plans and actions than any of the other powers. Spain, Switzerland, Poland, Czechoslovakia, Sweden, all have chemical warfare service in one form or another, and it will be recalled that Spain used gas against the Moors in one of her campaigns last year. Even Mexico and certain countries in South and Central America are showing a growing interest in chemical warfare.

Contrast with this the difficulty we have experienced in obtaining funds for stand-by condition. Should war come upon us our troops would be required to fight the first six months inadequately protected with modern gas masks. Meanwhile, we spend \$1,347,580 to feed the 9230 horses in the cavalry and at the ration allowed for horses - 40 cents per day - the 45,000 horses and mules in the entire Army cost \$6,570,000 for forage alone, not to mention housing, harness, care-takers, and replacements. There are 122 veterinary

(Continued on page 26)

CHANGES - CHEMICAL WARFARE OFFICERS' RESERVE CORPS.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
LT. COLONELS		
Howe, Harrison E.	O.C., CWS	2702 - 36th St., N.W., Wash- ington, D.C. Prom. from major 2/7/25. Tech. Div., OC-CWS.
Keyes, Frederick G.	O.C., CWS	12 Prescott St., Cambridge, Mass. Apptd. 12/5/24; acctd. 12/18/24. BA Group, E.A.
Somervell, Woodruff M.	9th C.A.	Add. chgd. from: 1004 Elden Ave., Los Angeles, Cal. to: 706 Hibernian Bldg., Los Angeles, Cal. TA Group.
West, Clarence J.	O.C., CWS	c/o Nat'l Research Council, 21st & B Sts., N.W., Washington D.C. Prom. from major 2/26/25. Chemical Div., E.A.
Willard, Frederic W.	O.C., CWS	224 So. Ridgeland Ave., Oak Park, Ill. Apptd. 1/6/25; ac- cptd. 1/13/25. BA Group, 4th C.W.S. Procurement Dist.
MAJORS		
Auer, Charles I.	Unassigned	2729 Pershing Drive, El Paso, Texas. Apptd. 1/28/25; acctd. 2/16/25
Clark, Arthur J.	Unassigned	East Lansing, Mich. Apptd. 1/26/25; acctd. 2/12/25.
de Holl, Henry R.	O.C., CWS	4120 Parish Ave., East Chicago, Ind. Apptd. 1/9/25; acctd. 1/17/25. BA Group, E.A.
Kendall, William E.	O.C., CWS	228 So. Ridgeland Ave., Oak Park, Ill. Trans. from Med-ORC 2/6/25. BA Group, Medical Div., OC-CWS.
Lawrence, Ruben B.	O.C., CWS	62 N. Harrison Ave., Belle- ville, Pa. Apptd. 1/14/25; acctd. 1/21/25. BA Group, Technical Div., OC-CWS.
Loevenhart, Arthur S.	Unassigned	40 Roby Road, Madison, Wis. Apptd. 2/9/25; acctd. 2/16/25.
McKee, Mark T.	O.C., CWS	70 Lodewyck St., Mt. Clemens, Mich. Prom. from 1st Lt. 2/24/25. Admin. Div., E.A.
Miller, George E.	O.C., CWS	Edgewood Arsenal, Md. Apptd. 1/5/25; acctd. 1/10/25. BA Group, E.A.
Namm, Benjamin H.	Unassigned	Hotel Ambassador, New York City. Apptd. 1/21/25; acctd. 1/28/25.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
MAJORS (Cont'd)		
Riegelman, Harold	O.C., CWS	166 W. 87th St., New York City. Apptd. 1/28/25; accptd. 2/5/25. BA Group, Executive Div. OC-CWS.
Van Keuren, Edgar E.	O.C., CWS	116 No. 60th St., Birmingham, Ala. Apptd. 1/7/25; accptd. 1/31/25. BA Group, E.A.
CAPTAINS		
Bray, John L.	O.C., CWS	Purdue University, Lafayette, Ind. Apptd. 1/9/25; accptd. 1/21/25. BA Group, E.A.
Brockman, Charles J.	O.C., CWS	336 Hill St., Athens, Ga. Apptd. 1/6/25; accptd. 1/17/25. BA Group, E.A.
Calderwood, Howard N.	Unassigned	6 So. Randall Ave., Madison, Wis. Apptd. 1/26/25; accptd. 2/19/25.
Chance, Clifford, W.D.	O.C., CWS	P.O. Box 1415, Bisbee, Ariz. Apptd. 1/14/25; accptd. 1/24/25. BA Group, E.A.
Couch, James F.	O.C., CWS	Bureau of Animal Industry, Washington, D.C. Apptd. 1/9/25; accptd. 1/19/25. BA Group, E.A.
Hamlin, Willard B.	O.C., CWS	47 Manning St., Needham, Mass. Apptd. 2/4/25; accptd. 2/12/25. 1st CWS Proc. Dist.
Howson, Charles R.	5th C.A.	527 East 114th St., Cleveland, Ohio. TA Group, Commission exp. 2/9/25.
King, Arthur G.	O.C., CWS	Room 1808, 342 Madison Ave., New York City. Trans. from Training Div., E.A. to First Gas Regt.
McClure, John	Unassigned	1312 No. Pennsylvania Ave., Roswell, N. Mex. Apptd. 1/26/25; accptd. 2/4/25.
Nair, John H.	Unassigned	193 Jasper St., Syracuse, N.Y. Trans. from SC-ORC to CW-ORC 2/24/25.
Naudain, Glenn G.	Unassigned	Mellon Institute, Pittsburgh, Pa. Apptd. 2/16/25; accptd. 2/24/25.
O'Callaghan, John A.	O.C., CWS	Indian Head, Charles Co., Md. Apptd. 1/22/25; accptd. 1/30/25. BA Group, E.A.
Riker, Carleton B.	O.C., CWS	190 Montrose Ave., So. Orange, N.J. Apptd. 1/16/25; accptd. 1/23/25. BA Group, E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
CAPTAINS (Cont'd)		
Sturdevant, Earl G.	6th C.A.	176 N. Humphrey Ave., Oak Park, Ill. Apptd. 2/10/25; acctpd. 2/16/25. TA Group.
Wilkins, Merritt O.	6th C.A.	836 Wellington Ave., Chicago, Ill. Apptd. 2/4/25; acctpd. 2/12/25. TA Group.
Wood, Charles G.	Unassigned	Box 765, Warren Ariz. Apptd. 1/15/25. Acctpd. 1/26/25.
FIRST LIEUTENANTS		
Aufderheide, Walter H.	9th C.A.	El Centro, Calif. TA Group. Appointment expired 1/20/25.
Benkelman, Alvin C.	O.C., CWS	Box 81, West Lafayette, Ind. Apptd. 1/10/25; acctpd. 1/16/25. BA Group, E.A.
Blardone, George	O.C., CWS	Add. chgd. from: 1141 N. Robertson St., New Orleans, La. to: 1137 N. Robertson St., New Orleans, La. BA Group, Ind. Relations Div., OC-CWS.
Buckland, Bertel G.	Unassigned	Edgewood Arsenal, Md. Apptd. 2/10/25; acctpd. 2/17/25.
Bushnell, John P.	3rd C.A.	Add. chgd. from: #2 Ave., Francisco I. Madero, Mexico. D.F., Mexico, to: 1765 Church St., N.W., Washington, D.C. TA Group.
Clarke, John J.	9th C.A.	1516 - 28th Ave., Seattle, Wash. Apptd. 1/9/25; acctpd. 1/26/25. TA Group.
Fitkin, William W.	9th C.A.	107 So. Salinas St., Santa Barbara, Cal. Apptd. 1/14/25; acctpd. 1/24/25. TA Group.
Horner, William J.	Haw. Dept.	Hq. Hawaiian Dept., Honolulu, H.T. Apptd. 2/2/25; acctpd. 2/10/25. TA Group (Mr. Sgt., CWS).
Leake, Chauncey D.	O.C., CWS	Science Hall, Madison, Wis. Apptd. 1/9/25; acctpd. 1/15/25. BA Group, E.A.
Lienhardt, Winfield S.	O.C., CWS	7 Brownell St., Stapleton, S.I., N.Y. Apptd. 2/4/25; acctpd. 2/10/25. BA Group, E.A.
Lytle, William C.	O.C., CWS	105 Blanche St., Houghton, Mich. Apptd. 1/16/25; acctpd. 1/23/25. BA Group, E.A.
Muehlberger, Clarence W.	O.C., CWS	1420 Mound St., Madison, Wis. Apptd. 1/17/25; acctpd. 1/21/25. BA Group, E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
FIRST LIEUTENANTS (Cont'd)		
Perry, Herbert J.	O.C., CWS	815 Lake Ave., Racine, Wis. Apptd. 1/27/25; acptd. 2/2/25. BA Group, E.A.
Robinson, Donald E.	O.C., CWS	1413 Mervin Ave., Dormont Boro, Pittsburgh, Pa. Prom. from 2nd Lt. 2/10/25. Property Division, E.A.
Silvera, Theodore A.	O.C., CWS	918 Poydras St., New Orleans, La. Prom. from 2nd Lt. 2/7/25. BA Group, Edgewood C.W. Re- serve Depot.
Snow, Robert D.	O.C., CWS	730 S. Clinton St., Iowa City, Iowa. Apptd. 1/13/25; acptd. 1/22/25. BA Group, E.A.
Votaw, Charles A.	6th C.A.	943 - 39th St., Milwaukee, Wis. Apptd. 2/13/25; acptd. 2/19/25 TA Group.
Weber, Harold C.	O.C., CWS	160 Brook Road, Milton, Mass. BA Group, Mechanical Div., E.A. Resigned 1/22/25.
Wilson, George W.	O.C., CWS	Add. chgd. from: 1050 E. 233rd St., New York City, to: 2325 University Ave., New York City BA Group, Chemical Division, E.A.
SECOND LIEUTENANTS		
Adams, Wilbur C.	Unassigned	6300 Enright Ave., St. Louis, Mo. Apptd. 2/10/25; acptd. 2/18/25.
Baechler, Roy H.	O.C., CWS	Perm. add.: Fountain City, Wis. Temp. add. c/o Forest Pro- ducts Lab., Madison, Wis. Apptd. 1/26/25; acptd. 1/31/25 BA Group, E.A.
Bazuin, Clayton W.	O.C., CWS	55 Arthur Ave., Grand Rapids, Mich. BA Group, Chemical Div., E.A. Appointment expired 1/20/25.
Beach, Howard T.	O.C., CWS	217 E. Davenport St., Iowa City, Iowa. Apptd. 1/7/25; acptd. 1/15/25. BA Group, E.A.
Berryhill, Robert H.	O.C., CWS	233 N. Mt. Vernon St., Pres- cott, Ariz. Apptd. 1/5/25; acptd. 1/15/25. BA Group, E.A.
Blair, Flay E.	8th C.A.	Add. chgd. from: Stonington, Colo. to: Box 742, Wiley, Colo. TA Group.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
SECOND LIEUTENANTS (Cont'd)		
Breth, Henry E.	Unassigned	Carlisle Place, Chillicothe, Ohio. Apptd. 2/3/25; acctd. 2/12/25.
Browning, Charles A.	Unassigned	Bingham Military School, Asheville, N.C. Apptd. 2/3/25; acctd. 2/13/25.
Brunsvold, Kenney E.	O.C., CWS	Homer, Neb. Apptd. 1/24/25; acctd. 1/31/25. BA Group, E.A.
Burns, Elon L.	9th C.A.	Add. chgd. from: 1331 Oak St., Oakland, Cal. to: c/o Whitthorne & Swan, Oakland, Cal. TA Group.
Courtney, Robert P.	6th C.A.	520 Belden Ave., Chicago, Ill. Apptd. 1/22/25; acctd. 1/29/25 TA Group.
Cox, Allan N.	1st C.A.	Add. chgd. from: 106 Renvenue St., Wellesley, Mass. to: R. F. D. #1, Rockland, Mass. Trans. from BA Group, Replacement Center, E.A. to TA Group.
Crisp, James E.	O.C., CWS	Add. chgd. from: 2603 Belair Road, Baltimore, Md. to: 1405 Park Ave., Baltimore, Md. BA Group, E.A.
Cronin, John J.	O.C., CWS	8 Walnut St., Needham, Mass. Apptd. 1/6/25; acctd. 1/15/25. BA Group, E.A.
Davis, Hugh L.	Unassigned	204 E. Fairchild St., Iowa City, Iowa. Apptd. 2/7/25; acctd. 2/17/25.
de Leeuw, Philip M.	Unassigned	4942 N. Spaulding Ave., Chicago, Ill. Trans. from Inf-ORC to CW-ORC 2/4/25.
Disney, William D.	O.C., CWS	Edgewood Arsenal, Md. Apptd. 12/11/24; acctd. 12/31/24. BA Group, E.A.
Eichelberger, Mark W.	Unassigned	7427 So. Shore Drive, Chicago, Ill. Apptd. 2/11/25; acctd. 2/18/25.
Fisher, Harry C.	O.C., CWS	8411 Wiswell Ave., Cincinnati, Ohio. Apptd. 1/2/25; acctd. 1/12/25. BA. Group, E.A.
Hylan, Malcolm C.	4th C.A.	Add. should be corrected to read P. O. Box 36, Clinton, Mississippi, instead of Clinton, Massachusetts. TA Group.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
SECOND LIEUTENANTS (Cont'd)		
Kaplan, Joseph	O.C., CWS	2003 Linden Ave., Baltimore, Md. Trans. from Inf-ORC to CW-ORC 1/8/25. BA Group, School Bn., E.A.
Klauber, Edward	O.C., CWS	Murray Hill Road, Scarsdale, N.Y. Trans. from Administration Div., E.A. to Mechanical Div., E.A. BA Group.
Klinkert, William C.	O.C., CWS	113 Cross St., Stevens Point, Wis. Apptd. 1/28/25; acctd. 2/5/25. BA Group, E.A.
Leatherman, Martin	3rd C.A.	Riverdale, Md. Trans. from Inf-ORC to CW-ORC 11/21/24. TA Group.
Lewis, Mark C.	O.C., CWS	156 N. Oak Park Ave., Oak Park, Ill. Resigned 1/27/25. BA Group, Chemical Division, E.A.
Mack, Gordon C.	Unassigned	Patent Office, Div. #6, Washington, D.C. Apptd. 2/7/25; acctd. 2/19/25.
Newsome, Philip T.	O.C., CWS	1038 W. Dayton St., Madison, Wis. Apptd. 1/19/25; acctd. 1/24/25. BA Group, E.A.
Popejoy, John R.	O.C., CWS	Box 880, Raton, N. Mex. Apptd. 1/13/25; acctd. 1/28/25. BA Group, E.A.
Preston, Homer G.	O.C., CWS	Add. chgd. from: 1246 Kalamath St., Denver, Colo. to: 1368 Elm St., Denver, Colo. BA Group, Administration Div., E.A.
Proctor, Bernard E.	Unassigned	179 Mt. Vernon St., Malden, Mass. Trans. from CA-ORC to CW-ORC 2/27/25.
Reynolds, Robert B.	O.C., CWS	Perm. add.: Gunterville, Ala. Temp. add.: University of Wisconsin, Chemistry Bldg., Madison, Wis. Apptd. 2/3/25; acctd. 2/9/25. BA Group, E.A.
Schurr, Perry N.	O.C., CWS	Add. chgd. from: P.O. Box 267, Monrovia, Cal. to: 504 - 19th St., Huntington Beach, Cal. BA Group, School Bn., E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
SECOND LIEUTENANTS (Cont'd)		
Smith, Donald P.	O.C., CWS	130 James St., Waukesha, Wis. Temp. add. to 7/1/25; c/o University Club, Madison, Wis. Apptd. 1/28/25; accptd. 2/3/25. BA Group, E.A.
Smith, William F.	O.C., CWS	14 Spectacle St., Cranston, R.I. Temp. add. Kenvil, N.J. BA Group, E.A.
Spurlock, William W.	O.C., CWS	Box 373, Silverton, Col. Apptd. 1/21/25; accptd. 1/31/25. BA Group, E.A.
Taylor, Robert H.	Unassigned	1575 Washington St., Denver, Colo. Apptd. 1/21/25; accptd. 2/11/25.
Weir, William H.	4th C.A.	Add. chgd. from: Box 107, Chester, S.C. to: Dept. of Engineering, State Board of Health, Raleigh, N.C. TA Group.
Wulff, Robert G.	Unassigned	322 So. Middleton St., Hun- tington Park, Cal. Apptd. 1/24/25; accptd. 2/7/25.

RESERVE OFFICERS PLEASE NOTE.

It is requested that any errors or omissions noted in these lists of Reserve Officers, be reported to the Personnel Section, Office, Chief, Chemical Warfare Service, Munitions Building, Washington, D.C.

CHEMISTRY WINS RECOGNITION.

(Continued from page 19).

officers in the Army's latest directory of January 1, 1925, and there are 83 officers in the Chemical Warfare Service. The extent to which cavalry has been superseded in modern warfare was well demonstrated by the World War. The ascendancy of chemical warfare is written everywhere.

We have in the Chemical Warfare Association, in the membership of the American Chemical Society, and in allied technical men the means for bringing forcefully before those in authority the truth of our situation. Should an inquiry into the status of our national defense grow out of the present controversy over the Air Service, so much the better. To many it is evident that the work necessary for national defense, and lawful under all existing treaties, must be prosecuted with greater vigor and supported on an adequate basis if this country of ours is not to remain in an extremely vulnerable position. It takes time to prepare the way for legislation affecting appropriations. We should begin now on the next appropriation bill.

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