

CHEMICAL WARFARE

A Magazine devoted to the activities of the
CHEMICAL WARFARE SERVICE

Of Interest To All Arms

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Edited By **STAFF, CHEMICAL WARFARE SCHOOL**

Editorial Comment.

LINE AND STAFF OFFICERS COURSE.

The Seventh Line and Staff Officers Course opened Monday, September 14th to continue ten weeks, with twenty-four student officers.

The Class is composed of officers of the regular service from the Infantry, Field Artillery, Coast Artillery, Cavalry, Chemical Warfare Service, Air Service, Signal Corps, Medical Department, Ordnance Department and United States Marine Corps, and one officer of the Reserve Corps.

The Marine Corps, as usual, is well represented furnishing twenty-five percent of the Class. In the class completing this course in May, fifty percent were Marine Corps Officers.

The Officers in attendance are listed below:

MAJORS

Avery, Ray L., C.W.S. (Ord. Dept.)
Gilkesson, Adlai H., Air Service
Montgomery, Edward, C.W.S., (C.A.C.)
Simon, Allen E., Marine Corps
Wood, Cyrus B., Medical Corps

CAPTAINS

Bogart, James H., C.W.S.
Root, John A., Ord. Dept.
Tuttle, Edgar S., Marine Corps

FIRST LIEUTENANTS

Bilisoly, Walter E., Marine Corps
Bullene, Egbert F., C.W.S., (Cav.)
Conrad, Vincent J., 18th Infantry

FIRST LIEUTENANTS (Cont'd)

Kuhn, Harry A., C.W.S.
McKeon, Francis, H.A., 16th Infantry
March, Francis A. 3rd, 6th F.A.
Perry, Herbert J., CW-Res.
Powers, Patrick F., C.W.S.
Robinson, Joseph S., C.A.C.
Scott, William W. Jr., Marine Corps
Small, Arthur C., Marine Corps
Smith, Harold W., C.A.C.
Smith, Paul R., C.W.S.
Stice, Kenneth S., Signal Corps

SECOND LIEUTENANTS

Davidson, James A. Jr., 6th F.A.
Sancomb, Perley B., 14th Cavalry

This course ends November 21st, by which time it is expected a Class of Naval Officers will already be in progress.

DUTIES OF A RESERVE OFFICER IN TIMES OF PEACE.

By Lt. Col. W. Lee Lewis, C.W. - Res.

Remarks before the Chemical Warfare Service Reserve Officers' School
at Edgewood Arsenal, July 17, 1925.

I have been considering, while here at the school, what measures we can take when we return to our civilian duties in order to best carry on. In the few minutes at my disposal I shall give you my thoughts on this subject, realizing that you will have many better suggestions and only hoping that these remarks may serve in some degree to stimulate us all to a sense of our obligation to national defense.

The facts we have to face are somewhat as follows: there are eighty-two regular army officers in C. W. S. At the present time there are approximately seven hundred fifty reserve officers, and fifty of these are in attendance at this school. I understand that some three thousand reserve officers are contemplated by this service. There is an obvious significance in these figures.

We must further recognize that chemical warfare, for some inexplicable reason, is accepted with reservations by the rest of our military organization. Added to this, we have a great background of public mis-apprehension and confusion on the entire subject. An understanding of the sources of this confusion in the lay mind, is essential to the apprehension of our problem. I must confess that in this matter of public doubt, my sympathy is entirely with the public. With the exception of certain recent activities, the whole question of publicity for chemical warfare has been grossly bungled.

We should probably add another statement to our premises, namely, chemical warfare has been selected as the most vulnerable point of attack against militarism generally, by a misguided organized pacifism. This is extremely good generalship from their standpoint, for it capitalizes at once this apathetic or hostile public psychology.

We are here because we believe that national defense must become increasingly a matter of civil and civilian interest and support. The national defense act of 1920 plainly contemplated this, and the government's program of economy has made it inevitable. Let us therefore consider for a moment our problem and inquire into the sources of public mis-conception on the subject of gas warfare. We can all easily recall how vigorously gas weapons were assailed when the Germans first used them. This was very necessary propaganda at the time. Not only did the subject partake of the current Teutonic odium because of its close identification with the Central Powers, but it was diabolically inhumane, per se, since it was launched against international agreement upon defenseless troops. I can still visualize those posters spread before the public which depicted the soldier tearing his throat in the agonies of suffocation from this new, invisible and mystical weapon. It is very difficult to convince the public in the next breath, without carefully supplying the intermediate history, that American made gas is not nearly

so bad as German made gas. In fact we here again find ourselves in direct contradiction, for we were unduly proud of our achievement in the development of new types, and larger quantities of gases, when the Allies decided to retaliate in kind. We have blown hot and cold on this whole gas matter, until we have reduced our audience to a splendid state of incredulity and suspicion. Numerous articles have appeared and lectures widely given, portraying giant destructive agents, largely hypothetical. All such messages have been directed at the American love for the superlative. We said too little about the advance of defense measures. These have changed the whole logic of gas weapons. They have widened the ratio between gas casualties and fatalities to a degree not paralleled by any other known military weapon. We have said too little about smokes and lachrymators which are as legitimate strategies of war as are hills, valleys, stone clumps and wooded patches. As well try to dictate that future wars shall be fought on flat terrains free from all topographic variations, as to rule out smokes and lachrymators from the list of civilized weapons.

In concrete terms, what can we reserve officers do when we return to our peace pursuits to support and advance this branch of the service which we believe so essential to national defense? We are small in number and the task before us is large. We must be the leaven which leaveneth much. First of all, we should join the Chemical Warfare Association. This is the only agency for collective action and expression. Some have said that these activities which we face could be carried on through the local sections of the American Chemical Society. We must remember, however, that the American Chemical Society has its definite function. Moreover, many reserve officers are not members of the American Chemical Society, and they would be forced to join, assuming that they were otherwise qualified, or else excluded in the first instance from participation in organized effort. This difficulty particularly applies to the T. A. group, many of whom are not professional chemists. Moreover, we must recognize in all fairness, that there are members of the American Chemical Society who are not tolerant of chemical warfare, or indeed, of any kind of warfare discussion and however much we may differ with them, we have no right to automatically force upon them a program with which they are not in sympathy. The task before us of enlightening the public in chemical warfare and educating ourselves to a higher degree of efficiency, warrants a specialized agency and it is my conviction that the Chemical Warfare Association is the best available tool. It may need change and modification but all things grow and here again, we should lend a helping hand rather than stand off critically and aloof. Our second great duty should be to inform ourselves accurately of the facts regarding chemical warfare and promulgate these facts according to our personal opportunities. I shall not attempt here to enumerate these facts for that is not my present purpose, but they are easily available and have been made a part of the course which has been our privilege to enjoy during these two weeks at this school. As

scientific men, we are committed to the proposition that the only approach to the solution of any problem is the scientific approach. As Haldane has so well said, "War can only be eradicated by a scientific study of its causes". This is the method that has prevailed over many diseases and war is a disease of society. We must try to make clear to those of good intention, who wish to promote universal peace in the wrong way, that the causes of war do not lie in its methods. It follows, therefore, that to circumscribe and delimit the methods of war by international agreement even if such agreements can be made to hold, will not eradicate those ultimate causes which lie in conflicts of racial and commercial interest.

As a third activity we should, wherever possible, as we go back to our respective communities, strive to organize local sections of the Chemical Warfare Association for occasional meetings. We must remember that it is the special obligation of those of us who have enjoyed the advantages of this school, to educate our fellow officers in the recent developments of this branch of the service.

I have tried to think what would be an ideal organization for a local section of the Chemical Warfare Association. We are all harassed by organization activities and it seems sometimes that we almost miss life in all this varied machinery by which we pursue it. I would hope therefore that membership in a local section of the Chemical Warfare Association should not be an onerous connection. Three or four meetings a year should be ample, but they should be made worthwhile for those who attend. It would seem that the following committees would be necessary.

First a Program Committee who should consider the following possibilities for program material: first, talks by regular army officers. We have all been impressed by the splendid lectures which we have enjoyed here at the School, and we know that a message from any of the instructing staff would be inspiring and enlightening, if delivered before any of our local organizations. Second, talks by reserve officers; many of our reserve officers who have had training in this School or who have had military experience abroad could contribute very valuable and helpful material before such meetings. Here is a third suggestion: last year at Chicago, a group of us studied our correspondence courses together. We found this plan very interesting and it might be elaborated and used in connection with the sections. Map problems are always valuable and interesting, and I have no doubt the local officers here would cooperate in supplying such material. We should see that available texts and reports on chemical warfare are placed in the local libraries. Such a Committee could prepare a bibliography and distribute it, on chemical warfare and allied topics.

A second committee, in an ideal organization, would be a Public Relations Committee, whose duty it would be to convey to the public through lectures and articles correct information on chemical warfare, as to its humanity, efficiency and economy. They should emphasize the chemical service aspect of this branch of the army.

through its civil researches. Above all they should strive continuously to answer in a dignified and patient manner every press misstatement regarding chemical warfare.

It is desirable that the officer personnel should be completed as soon as possible and to this end there should be a Committee on Personnel to nominate reserve officers to the Corps Area Headquarters. Chemists know the varied abilities of their colleagues and are in the best position to give the service special advice. So far this matter has been left largely to chance, and it is only recently that the reserve officers' corps is becoming representative of our profession. The question of rank in this connection is difficult but there is available at general headquarters a statement of specifications for the various grades of officers which will be very helpful in solving this rather trying phase of the subject. It is particularly important to get the World War Veterans. Their experience is needed by the rest of us and their value in time of emergency can not be gainsaid. There should also be brought continuously into the ranks, young men bearing the lower official grades, for these men must be the future of the service nucleus.

There should be a local committee to cooperate with the civil research going on here at Edgewood. If this committee did nothing more than inform itself on the splendid work being done here, it would go a long way toward a better understanding of this branch of the army. Sympathetic aid to the men doing research at Edgewood, of a more direct character, is a possibility. Similarly, there should be a Committee to Cooperate on Military Research and one to cooperate on Procurement data. This latter has to do with the cataloging for ready mobilization of all of our industrial chemical resources.

It is obvious that such suggestions as I have thrown out must be modified greatly by location conditions. In a community of sparse chemical population it is obvious that the local section would be difficult to maintain. Organization should not be difficult, however, in the larger centers and these could radiate out their influence so as to cover our whole country. In conclusion then, my appeal is that we should not go back home merely with the feeling that we have had a pleasant two weeks' vacation, but rather that we have accepted, by our presence here, a definite challenge to do our duty in behalf of this important branch of the military service.

169TH INFANTRY DEMONSTRATES SMOKE SCREEN.

The value of smoke in screening the advance of Infantry was successfully demonstrated by the 169th Infantry, Connecticut National Guard, assisted by the Chemical Warfare Officer, First Corps Area, at recent maneuvers by that regiment held at the Connecticut State Fair at Hartford. Smoke Candles were used to lay the screen which, it is reported, was a complete success both from a spectacular and a tactical viewpoint. About 6,000 spectators witnessed the demonstration.

PROPAGANDA AGAINST CHEMICAL WARFARE LAID TO IGNORANCE.

The New Orleans Item in its issue of September 29, devotes more than half a column to an editorial on "Gas Warfare" deploring the "widespread misconception generated by propaganda" which surrounds this subject. The editorial incorporates a note from Major General Fries, commenting upon a previous editorial. In reply to this note Mr. Marshall Ballard, managing editor of The item, has written the General at length, philosophizing upon the cause of such propaganda which he finds to be ignorance.

Both the editorial and the letter to General Fries are printed herewith:

Gas Warfare.

We remarked on August 16 upon the American Chemical Society's condemnation of current criticisms - mostly ignorant - of the use of "poison gas" in warfare.

This is one of the heritages of a season of wholesale falsification that began with our entry into the war and has left us many of its undesirable blooms eight years later. The merry effort to furnish the wicked Germans with an atrocious character has not been an unmixed blessing in its results.

While the subject has no specially pressing import at the moment it is well worth mentioning for two very good reasons. Anything that applies the simple truth to factors that tend to perpetuate needless bitterness in the world is useful. And in this particular case a widespread misconception generated by propaganda among credulous people, on technical matters of which most of us are normally uninformed, greatly hampers the work that needs be done by those charged with responsibility for our own national defense.

The sense of this on the part of such officials must be quite pronounced, we should infer, to inspire such a note as this we received last Saturday:

"The Editor of the Item-Tribune, New Orleans:

"My Dear Mr. Editor: - I have read with a great deal of pleasure your editorial of August 16, on 'Gas in War'.

Newspapers like yours, giving people a true picture of chemical warfare, have an immense educational value to the Country; and help people determine on a proper and adequate national defense.

"The Country needs the aid of such influential papers as the New Orleans Item-Tribune in placing the real facts regarding chemical warfare before the people.

Very sincerely,
AMOS A. FRIES,
Major General U. S. Army,
Chief of Chemical Warfare Division."

General Fries declared to a Chicago meeting last Friday that our own Army reports show American casualties from gas in the late war to have been but 2½ percent of the total casualties (deaths, injuries and all), while other methods of fighting caused 25 percent of the American deaths and 31 percent of the British.

The newness of gases as battle-agencies, added Dr. Lewis, professor of Chemistry in Northwestern University, caused limitless exaggeration of their effects. The American casualties (death and injuries) from gas, he stated at 70,552. Whereas the figure is often placed at 300,000.

The whole tone of this and other gatherings of American experts has been in deprecation of legends of horror conjured up by ignorance, or generated by "high-powered imaginations," as one of the Chicago gathering expressing it.

Our own suspicion of the whole literature of the gas propaganda, from the beginning was based on some acquaintance with commoner gases like chlorine and "mustard oil" gas. We are entirely unacquainted with the newer gases that entered during and after the war. These older ones are disagreeable enough, in all conscience, without imaginative multiplication of their villainies. But we often saw exceedingly improbable and entirely impossible things attributed to them. So we concluded that the same exaggeration must be applied indiscriminately to all such agencies by the busy misleaders of public opinion.

Our own attitude toward all such matters, however, is based on considerations of human nature much surer and more important than any detail arising from that sort of speculation.

We were skeptical of the gas propaganda because we thought it probably was untrue.

But we knew, if it was true, that nothing is to be gained by inertia on our part in that field, or by international underwritings. For anybody who knows anything about the human animal in a jam knows perfectly well that any group or nation of human people, under the stress of war, will use gas, or anything else, to

accomplish the object of war, regardless of agreements to the contrary. It hasn't been long since a lot of enthusiasts were advocating agreements against the use of submarines. The futility of that agitation is reflected in the policies of every naval power in the world.

THE NEW ORLEANS ITEM

The Morning Tribune

The Item-Tribune

New Orleans, Sept. 29, 1925.

General Amos A. Fries, Chief,
Chemical Warfare Division,
U. S. Army,
Washington, D. C.

Dear General:

Thanks for your recent note. We used it in the enclosed editorial in The Item. The occasion, I think, for most of the editorial disapproval of such war agencies as gas and the submarine is ignorance. This ignorance is ignorance of the common facts of human nature as well as of the commonplace facts of chemistry, physics and physiology. The delusion, however, on which such propaganda is founded, when the propaganda itself is not dishonest, is born of ignorance and imagination on the part of soldiers. The novelty and "mystery" of gas attack, and the normal, poetic, tendency to magnify the terrors of the unknown, are doubtless responsible for a good deal of honest misapprehension in such matters as this. Editors, being about as ignorant as the average of bankers, drygoods dealers, preachers, professors, soldiers and sailors, too commonly accept everything as testimony on such matters, without inquiry or reflection.

The soldiers, possibly, are more to blame than the editors, because commonly supposed to be more inured to realities, and because a detail like this falls within the scope of their own profession. The poor editors, as a matter of fact, have little business of their own, except such as the business of others furnishes them. Their business is everybody else's business. It is naturally to be expected, since they are not commonly equipped with a wider range of accurate, detailed, knowledge than others are, that forays into the ramifying labyrinths of human endeavor will not in all cases be happy. If all of us knew more, we might all be happier. At any rate, we might be less unhappy. I understand, however, that philosophy disputes both propositions. The wisest of the Jews told his little world that "in much wisdom is much grief." If he was wrong, that would prove the Jews unhappy in the selection of their sage.

This, in turn, would prove that a widespread, popular, misconception is not a new thing.

An individual grasp upon the facts and principles of the unlimited concerns of modern life is impossible. Those of us, however, who have had the advantage of what is commonly called "a liberal education" should be able to discriminate between empty, unsponsored, and unproved, chatter about important matters, and testimony thereupon which proceeds from proved experience and finds at least the appearance of support in old-fashioned forms of reasoning. Lots of us in my business, and in most other businesses, don't seem to function in this way. Some are unable to do so. Others, who might do so, don't do so because the process involves a little more labor in the way of inquiry and reflection than loose talk requires.

With best wishes,

Very sincerely,

(Signed) Marshall Ballard.

BELIEVES IN CHLORINE TREATMENT.

The following note to the Superintendent of the Edgewood Arsenal Duplicating Plant is of interest, as it shows the use of chlorine as a treatment is being accepted by physicians:

DR. J. V. CLARKEN
529 N. CHARLES STREET
BALTIMORE, MD.

September 18, 1925.

Mr. W. D. Disney,
Edgewood Arsenal.

Dear Sir:

I would like to advise Chlorine treatments for Mrs. Gertrude Boyd. Would you please arrange so that she would get 3 one hour treatments weekly.

Thank you kindly, I am,

Sincerely,

J. V. Clarken, M.D.
F.

GENERAL MAURICE TELLS POLITICS INSTITUTE THAT POISON-GAS TREATY IS A DEAD LETTER.

From The New York Times, August 5, 1925.

Williamstown, Mass., Aug. 4. — Major Gen. Sir Frederick Maurice, who was Chief of Operations of the British General Staff during the World War, expressed the belief at the Institute of Politics today that the proposed disarmament conference for the limitation of land and air forces will have a much more difficult task than the Washington Conference for the Limitation of Naval Armaments.

While battleships cannot be built secretly, he pointed out, poison gas and aerial bombs could be prepared by any nation which wished to violate an agreement limiting their use. It was for this reason, he said, that the Washington conference treaty against the use of poison gas in naval warfare had become a dead letter.

"The success attained by the Washington conference," General Maurice declared, "is, in my judgment, largely due to the fact that in one important respect the naval problem is far simpler than the military problem. A battleship takes a very long time to build, and no one has ever yet succeeded in building a battleship in secret, nor in concealing the size of a battleship under construction. Therefore, an agreement as regards battleships could not be broken without the whole world being aware of it. That condition applies to few, if any, other forms of arms.

"And yet the discussions which followed the Washington conference show how difficult it is to avoid a suspicion of bad faith in anything that has to do with armaments. There have been frequent suggestions that the terms of the Washington conference were being evaded as regards elevation of guns. Great Britain, which in the past had maintained a two-power standard, or two-keels-to-one standard, considered, and not unnaturally, that she had made great sacrifices in agreeing to a one-power standard.

"The United States, the only power with the financial means to develop almost unlimited naval construction, equally was entitled to think that she had made sacrifices in agreeing to a similar standard. Yet there have not been wanting many people who have regarded the Washington conference as a cunning design of Great Britain to perpetuate her naval authority, and to maintain her authority, in Europe at least, in a better position than she had ever been before.

Submarine Proposal Not Ratified.

"Last year in Rome an attempt was made to extend the principle of the Washington conference to those powers who had not been in Washington. A conference was held and it began at once to appear that so far from leading to a limitation many of the powers concerned wanted an increase in naval armament. Then the proposal for the Washington conference for the limitation of the use of submarines in war has not obtained general ratification. Those powers which have long exposed coast lines and a limited number of battleships not unnaturally felt themselves loath to give up a very valuable defensive weapon when other powers have a superior offensive weapon.

"Similarly, the treaty as regards the use of poison gas in war has remained a dead letter. The reason for that is that poison gas can be readily manufactured in secret by a plant which in normal times is used for the peaceful purposes of commerce. Indeed, it is possible to prepare formulas for the use of poison gas in secret and have the means for preparing it rapidly without making any overt preparation at all in time of peace.

"Before the war the Hague Conference endeavored to prevent the use of poison gas, and in the war poison gas was used. Therefore, there is no confidence in any paper agreement on the subject. Recently a commission of the League of Nations has been concerned with this question, and has put forward proposals again for the abolition of the use of poison gas in war, to which Germany has been a consenting party. But it is extremely doubtful whether these will command any general confidence. Indeed, there are a great many people who maintain that poison gas is a far more humane weapon than high explosive shells."

Points to Power of Aircraft.

"The exceptional feature as regards poison gas is that particularly when it is discharged from aircraft its radius of effect is very large, and therefore it may destroy large numbers of the civil population, women, children, and old men, but the same thing applies to a great extent to the dropping of large bombs from aircraft upon centres of population. Aircraft, indeed, threatens to bring into the war zone the entire populations of the peoples at war.

"The result of these experiences shows the difficulties in the way of limiting the use of particular weapons. Agreements with regard to these will command confidence only when it is perfectly obvious. As in the case of battleships, that cannot be secretly made. In time of war the only restraining influence is the force of public opinion, or the probability of bringing new enemies into the field if the agreements as to the use of particular weapons are violated.

"The general conclusion which I come to in this matter is that attempts to limit the use of weapons as regards land and air armaments are not a very promising line of approach to the limitation of armaments."

Rebukes Talk of War With Japan.

The Washington conference has removed the danger of war between the United States and Japan, according to Rear Admiral W. W. Phelps, U.S.N., who said at General Maurice's round table:

"I do not believe in any war with Japan. There is a lot of fantastic talk about it. The Washington treaty absolutely settled the peace in the Pacific. I think there is developing a new mentality. The four-power pact arrived at in the Washington treaty insures the integrity of our possessions and has ended suspicions.

"Both nations would be perfect fools to promote a conflict. Commerce is gaining between the two countries. People who talk publicly of a conflict between the two countries are doing a great disservice. The Washington conference has removed the mutual fear that brought about vast armaments."

EXTRACT OF A TRANSLATION OF ARTICLE FROM BERLINER TAGEBLATT.

August 13, 1925.

The Geneva Prohibition of Gas Warfare.

By Berthold von Deimling, Major-General, retired.

At Geneva all the different countries, Germany included, have recently made another agreement with each other. But not the guaranty pact for insuring peace - oh no, we have not gone that far yet, I am sorry to say - but only an agreement for the prohibition of poison gas in warfare. How noble and humane! There are people, to be sure, who are of the opinion that this prohibition has only been established in order to keep war alive, for otherwise it would soon make an end to itself by toxic gases. We are not among these malicious people, but we try to believe that a feeling for humanity actually was the motive in this case. But for the sake of the enlightenment of the German people it must be stated that this prohibition of poisonous gases will be of merely academic interest, like all attempts to make war humane. Such prohibitions will always be evaded by belligerents. One will claim that the other began it, and therefore it should also be allowed to. And when it has once been done, all will have toxic gas among their equipment. As far back as 1907 the use of toxic gases was forbidden at the Hague Peace Conference. But in the World War nobody troubled himself about this prohibition. And if the newspaper reports are correct, the French sent gas bombs of the latest type to Morocco for use against Abd-el-Krim at the same time that their representative at Geneva, Paul Boncour, was uttering sonorous words against the use of toxic gas.

It will be the same in the future. And it is not at all strange that it is so. For all attempts to alleviate the harshness and cruelties of war are in direct contradiction with the nature of war. War is a rough violent trade. Destruction is according to its nature and must be so; otherwise it would not be war. There are no "permissions" and "prohibitions" in war; only necessities govern. Each of the belligerents finds itself in need when facing the foe. And when in need, any means is permitted. "Use whatever can be used" is the first law, based on the nature of war. And there is probably not a general in the whole world who has not heard with a significative, augural smile the fine sounding decision of the civilians at Geneva, which is however, only on paper.

Just as the World War assumed forms during its progress which no man had foreseen in time of peace, no one today can foretell with certainty what form a war of the future will take. But one thing seems sure: technical skill, physics and chemistry will be used much more intensively than heretofore in war, *and toxic gases in particular will play an almost decisive part.* After the World War, they are being brought out in "revised and enlarged editions", and combat aircraft have also been considerably improved since then.*****

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examination:

PHYSIOTHERAPY AIDE PHYSIOTHERAPY PUPIL AIDE PHYSIOTHERAPY ASSISTANT

Receipt of applications for these positions will close October 24 and November 28. The dates for the assembling of competitors will be stated on the admission cards sent applicants after the close of receipt of applications.

In the Public Health Service the entrance salary for physiotherapy aide is \$1,020 a year, with quarters, subsistence, and laundry; for physiotherapy pupil aide, \$720 a year, with quarters, subsistence, and laundry, or \$1,200 a year, without allowances; and for physiotherapy assistant, \$1,560 a year, without allowances.

In the Veterans' Bureau the entrance salary for physiotherapy aide is \$1,680 a year; for physiotherapy pupil aide, \$1,000 to \$1,400 a year, depending upon the training and experience of the appointee; and for physiotherapy assistant, \$1,320 to \$1,600 a year.

The duties of physiotherapy aides consist of administering physiotherapy in its several branches-- massage, electrotherapy, hydrotherapy, mechanotherapy, thermotherapy; active, passive, resistive, and assistive exercises and remedial gymnastics; keeping daily record of the work and progress of each and every patient coming under direction and treatment; and making the required reports of the activities of the reconstruction work in physiotherapy.

The duties of physiotherapy pupil aides will be the same as those for physiotherapy aide; except that they are pupils under the supervision and instruction of the chief aide in all the work above mentioned.

The duties of physiotherapy assistants consist of administering to special cases the treatments of physiotherapy, as massage, electrotherapy, hydrotherapy, thermotherapy, mechanotherapy; active, passive, resistive, and assistive exercises and remedial gymnastics; keeping a daily report of the work in progress on each patient under the appointee's direction and treatment; and making the required reports of the activities of the reconstruction work in physiotherapy.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D.C., or the secretary of the board of U.S. civil service examiners at the post office or customhouse in any city.

CHANGES - CHEMICAL WARFARE OFFICERS' RESERVE CORPS.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
LT. COLONELS		
Banard, Harry E.	O.C., CWS	1135 Fullerton Ave., Chicago, Ill. Apptd. 8/8/25; acctd. 8/26/25. BA Group, E.A.
Byers, Horace G.	O.C., CWS	Add. chgd. from: 6 Cedar Ave., Montclair, N.J. to: Cooper Union, 4th Ave. & 8th St. New York City. BA Group, Edgewood Arsenal, Chem. Div.
McNally, William D.	Unassigned	3734 N. Harding Ave., Chicago, Ill. Apptd. 8/10/25; acctd. 9/24/25.
MAJORS		
Buchanan, Edward F.	Unassigned	11416 Longwood Drive, Chicago, Ill. Apptd 8/22/25; acctd. 9/9/25.
Hay, Robert	Unassigned	321 Kerrigan Ave., West Hoboken, N.J. Apptd. 8/28/25; acctd. 9/10/25.
Hine, Thomas B.	O.C., CWS	229 Lawn Ave., Western Springs, Ill. Apptd. 7/27/25; acctd. 8/15/25. BA Group, Edgewood Arsenal.
Robb, Robert G.	O.C., CWS	Williamsburg, Va. Apptd. 8/10/25; acctd. 9/7/25. BA Group, Edgewood Arsenal.
Trumbull, Harlan L.	O.C., CWS	Box 464, Hudson, Ohio. Apptd. 8/11/25; acctd. 9/25/25. BA Group, Edgewood Arsenal.
Van Stone, Nathan E.	O.C., CWS	2033 West 108th Place, Chicago, Ill. Apptd. 9/4/25; acctd. 9/12/25. BA Group, Edgewood Arsenal.
Volwiler, Ernest H.	6th C.A.	Add. chgd. from: 5007 No. Ashland Ave., Chicago, Ill. to: Abbott Laboratories, Waukegan, Ill. TA Group.
CAPTAINS		
Almquist, Herman J.	O.C., CWS	1025 Fifth Ave., Helena, Mont. Trans. from Inf-Res 8/24/25. BA Group. Edgewood Arsenal.
Bartlett, John L.	8th C.A.	Add. chgd. from: Fredericksburg, Texas, to: 1198 Hazel Ave., Beaumont, Texas. TA Group.
Bray, John L.	O.C., CWS	Add. chgd. from: Purdue Univ., Lafayette, Ind. to: 540 Vine St., West Lafayette, Ind. BA Group, E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
CAPTAINS (Cont'd)		
Bronson, Horace E.	O.C., CWS	c/o Kean, Taylor Co., Nassau St., New York City. BA Group, Ind.Rel.Div., OC-CWS. Died 7/5/25.
Chaine, Vincent M.	O.C., CWS	196 Cambridge St., Boston, Mass. Apptd. 6/20/25; accptd. 7/31/25. BA Group, Edgewood Arsenal.
Coleman, Horace W.	4th C.A.	Add. chgd. from: 206 Corry St., Quincy, Fla. to: P.O. Box 38, Frostproof, Fla. TA Group.
Cuzner, Harold	Phil.Dept.	Forest School, Los Banos College, Laguna, P.I. Apptd. 6/26/25; accptd. 8/1/25. TA Group.
Fischer, William H.	O.C., CWS	98 Frederick St., Stamford, Conn. Apptd. 9/4/25; accptd. 9/11/25. BA Group, Edgewood Arsenal.
Johnson, Frank R.	O.C., CWS	908 W. 76th St., Chicago, Ill. Apptd. 8/10/25; accptd. 8/18/25. BA Group, Edgewood Arsenal.
McElvain, Samuel M.	O.C., CWS	University Club, Madison, Wis. Apptd. 7/10/25; accptd. 8/12/25. BA Group, Edgewood Arsenal.
McKinnon, Allen G.	O.C., CWS	Add. chgd. from: 6 Florence St., Andover, Mass. to: 76 Haverhill St., Andover, Mass. BA Group, Chem. Div., E.A.
Mayer, Gustave	O.C., CWS	Add. chgd. from: 318 W. 100th St., New York City, to: 5 West 83rd St., New York City. BA Group, Prop. Div., E.A.
Owen, Clinton G.	Haw.Dept.	2238 Kalia Road, Honolulu, T.H. Apptd. 8/17/25; accptd. 9/5/25. TA Group.
Palmèr, Charles S.	Unassigned	Perm. add. 1115 W. California Ave., Urbana, Ill. Temp. Add. Dept. of Chemistry, Northwestern Univ., Evanston, Ill. Apptd. 7/6/25; accptd. 9/14/25.
Ragsdale, Oren M.	O.C., CWS	Golden Hill, Indianapolis, Ind. Apptd. 8/10/25; accptd. 8/19/25. BA Group, Edgewood Arsenal.
Swearingen, Lloyd E.	O.C., CWS	Add. chgd. from: 468 Elm St., Norman, Okla. to: 1022 - 15th Ave., S.E., Minneapolis, Minn. BA Group, C.W. School, E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
CAPTAINS (Cont'd)		
Valentine, Howard D.	6th C.A.	Add. chgd. from: Room 319, Peoples Gas Bldg., Chicago, Ill. to: 245 Washington Blvd., Oak Park, Ill. TA Group
Wilkins, Merritt O.	6th C.A.	Add. chgd. from: 836 Wellington Ave., Chicago, Ill. to: 2235 Fremont St., Chicago, Ill. TA Group
Williams, Garvin D.	O.C., CWS	3633 Park Ave., Minneapolis, Minn. Apptd. 9/2/25; accptd. 9/12/25. BA Group, Edgewood Arsenal.
Wright, Howard V.	Unassigned	Edgewood Arsenal, Md. Apptd. 8/29/25; accptd. 9/18/25.
FIRST LIEUTENANTS		
Ballam, George A.	O.C., CWS	Add. chgd. from: 134 So. Superior St., Antigo, Wis. to: 1123 College St., Fargo, N.D. BA Group, Chem. Div., E.A.
Carey, John H.	O.C., CWS	Add. chgd. from: 1018 No. Main St., North Anderson, S.C. to: 80 Otis St., Medford, Mass. BA Group, Chem. Div., E.A.
Darling, Elton R.	6th C.A.	1293 W. Macon St., Decatur, Ill. Trans. to Aux-Res. 9/23/25. TA Group.
Dickinson, Sheldon J.	O.C., CWS	Perm. add. 803 State St., Madison, Wis. Temp. add. to: 12/1/25: 207 W. Washington Ave., Madison, Wis. BA Group, School Bn., E.A.
Gould, Edward A.	O.C., CWS	7630 Colfax Ave., Chicago, Ill. Apptd. 8/14/25; accptd. 8/21/25. BA Group, Edgewood Arsenal.
Hill, Thomas M.	O.C., CWS	Former temp. add. Livingston Hall, Columbia U., New York City. Temp. add. to further notice: Parlin, N.J. BA Group, 2nd C.W.S. Procurement District.
Johnston, Leicester S.	O.C., CWS	79 Meridian St., Melrose, Mass. Apptd. 9/1/25; accptd. 9/8/25. BA Group, Edgewood Arsenal.
Nesbitt, Carl W.	O.C., CWS	Add. chgd. from: 217 W. 15th St., Chicago Heights, Ill. to: Box 146, Mt. Pleasant, Iowa. BA Group, Prod. Div., E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
FIRST LIEUTENANTS (Cont'd)		
Norlin, Fred C.	6th C.A.	Perm. add.: La Harpe, Ill. Temp. add. to 1/1/26: Grace Lutheran Sanatorium, San Antonio, Texas. TA Group.
Pestalozzi, Hasso K.	O.C., CWS	Add. chgd. from: 838 - 39th St., Milwaukee, Wis. to: 3810 Roberts St., Milwaukee, Wis. BA Group, C.W. School, E.A.
Shelton, Elbert M.	O.C., CWS	14 Cambridge St., Manchester, Conn. Apptd. 8/22/25; accptd. 8/27/25. BA Group, Edgewood Arsenal.
Sherrick, Paul H.	6th C.A.	Add chgd. from: 7700 East Lake Terrace, Chicago, Ill. to: 420 Fullerton Parkway, Chicago, Ill. TA Group.
Silvera, Theodore A.	O.C., CWS	Add. chgd. from: 918 Poydras St., New Orleans, La. to: 11 Jackson Barracks, New Orleans, La. BA Group, Edgewood C.W. Reserve Depot.
Williams, Arthur S.	O.C., CWS	Add. chgd. from: Chapain, S.C. to: 816 Commercial Bank, Char- lotte, N.C. BA Group, Proof Dept., E.A.
Williams, Robert P. D.	Unassigned	219 Park Ave., Ridgway, Pa, Aptd. 8/26/25; accptd. 9/1/25.
SECOND LIEUTENANTS		
Anderson, Nelson J.	O.C., CWS	Add. chgd. from: 2519 Corning Ave., Parsons, Kas. to: 436 No. County St., Waukegan, Ill. BA Group, Chem. Div., E.A.
Beach, Howard T.	O.C., CWS	Add. chgd. from: 805 Woodriver Ave., Woodriver, Ill. to: Dept. of Chemistry, A. & M. College, Miss. BA Group, E.A.
Brunsvold, Kenney E.	O.C., CWS	Add. chgd. from: Homer, Neb. to: North Bend, Neb. BA Group, Edgewood Arsenal.
Buffett, George M.	O.C., CWS	621 No. Lake St., Madison, Wis. Apptd. 8/11/25; accptd. 8/17/25. BA Group, Edgewood Arsenal.
Cochrane, John D., Jr.	O.C., CWS	Add. chgd. from: 820 Massachu- setts Ave., Cambridge 39, Mass. to: 4734 Winton Rd., Winton Place, Cincinnati, O. BA Group, Edgewood Arsenal.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
SECOND LIEUTENANTS (Cont'd)		
Cohn, Ralph F.	O.C., CWS	5105 Webster St., Omaha, Neb. Apptd. 8/5/25; acctd. 8/15/25. BA Group, Edgewood Arsenal.
Courtney, Robert P.	6th C.A.	Add. chg. from: 520 Belden Ave., Chicago, Ill. to: 2104 Montrose Ave., Chicago, Ill. TA Group.
Cox, Thomas W.	O.C., CWS	Temp. add. to 6/1/26: Gulf Coast Military Academy, Gulf- port, Miss. BA Group, Edge- wood Arsenal.
Cronin, John J.	O.C., CWS	Add. chgd. from: 8 Walnut St., Needham, Mass. to: Durham, N.H. BA Group, Edgewood Arsenal.
Crossley, Robert	O.C., CWS	Add. chgd. from: 497 Pawtucket Ave., Pawtucket, R.I. to 132 Doyle Ave., Providence, R.I. BA Group, Chem. Division, E. A.
Diaz, Marcial R.	2nd C.A.	Temp. add. to 12/24/25: P.O. Box 698, College of A.&M. Arts, Mayaguez, P.R. TA Group.
Dunkle, Cyrus G.	Unassigned	1125 Hillsdale Ave., Dormont, Pittsburgh, Pa. Apptd. 8/31/25; acctd. 9/8/25.
Enterline, Henry M.	3rd C.A.	Add. chgd. from: 100 Biddle St., Wilkinsburg, Pa. to: 1131 Lancaster Ave., Pittsburgh, Pa. TA Group.
Fahey, Joseph J.	O.C., CWS	Add. chgd from: 5 N St., N.W., Washington, D.C. to: Apt. 310, The Argyle, 17th & Park Rd., Washington, D.C. BA Group, Chem. Div., E.A.
Fiske, William M.	O.C., CWS	Add. chgd. from: 596 Hawthorne Place, Chicago, Ill. to: 648 Roscoe St., Chicago, Ill. BA Group, Chem. Div., E.A.
Halfacre, Charles H.	Unassigned	119 Santa Ana., Huntington Park, Cal. Apptd. 8/21/25; acctd. 9/1/25.
Hansbrough, John H.	O.C., CWS	Add. chgd. from: 219 Ash Ave., Ames, Iowa. to: 208 E. Park Ave., Tampa, Fla. BA Group, Med. Res. Div., E.A.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
SECOND LIEUTENANTS (Cont'd)		
Hess, Casselman B.	O.C., CWS	Add. chgd. from: 312 Epworth St., Rochester, N.Y. to: 167 Fairview Ave., Rochester, N.Y. BA Group, Chem. Div., E.A.
Hylan, Malcolm C.	8th C.A.	Add. chgd. from: Box 36, Clinton, Miss. to: 2523 - 12th St., Boulder, Colo. TA Group.
Johnson, Otto	O.C., CWS	Add. chgd. from: 1512 - 7th St., S.E., Minneapolis, Minn. to: 512 Delaware St., S.E., Minneapolis, Minn. BA Group, Chem. Div., E.A.
Johnson, William H.	O.C., CWS	Add. chgd. from: 314 So. Clinton St., Iowa City, Iowa. to: 903 Main St., Cedar Falls, Iowa. BA Group, Edgewood Arsenal.
Leverett, Leyburn A.	O.C., CWS	Add. chgd. from: R.F.D. #4, Kilgore, Texas, to: Overton, Texas. BA Group, Prod. Div., E.A.
MacDonald, Ronald G.	O.C., CWS	Add. chgd. from: Oxford Paper Co., 87 - 35th St., Brooklyn, N.Y. to: Chem. & Met. Eng., 10th Ave. at 36th St., New York City. BA Group, Prod. Div., E.A.
Morris, Hervey C.	O.C., CWS	Add. chgd. from: 1107 Gloucester St., Brunswick, Ga. to: 1103 Egmont St., Brunswick, Ga. BA Group, School Bn., E.A.
Nelson, Rudolph S.	O.C., CWS	Temp. add. to 6/1/26: Rice Institute, Houston, Texas. BA Group, Med. Res. Div., E.A.
Newsome Philip T.	O.C., CWS	Add. chgd. from: 1028 W. Dayton St., Madison, Wis. to: 315 No. Brooks St., Madison, Wis. BA Group, Edgewood Arsenal.
Nicholl, Leonard	O.C., CWS	Add. chgd. from: 662 So. 7th Ave., Mt. Vernon, N.Y. to: Carnegie Inst. of Tech., Pittsburgh, Pa. BA Group, Prod. Div., E.A.
Padula, Joseph F.	O.C., CWS	Add. chgd. from: 156 Hull St., Brooklyn, N.Y. to: 319 Chauncey St., Brooklyn, N.Y. BA Group, Edgewood Arsenal.

<u>NAME AND RANK</u>	<u>ASSIGNMENT JURISDICTION</u>	<u>REMARKS</u>
SECOND LIEUTENANTS (Cont'd)		
Park, Howard I.	O.C.,CWS	Add. chgd. from: 1015 Scott St., Little Rock, Ark. to: 3008 Gaines St., Little Rock, Ark. BA Group, Chem. Div., E.A.
Pearce, James M.	4th C.A.	811 Nebraska Ave., Tampa, Fla. Apptd. 8/7/25; acctd.8/20/25. TA Group.
Rolshausen, Ferdinand W.	Unassigned	904 Calhoun Ave., Houston, Texas. Apptd. 9/4/25; acctd. 9/19/25.
Sadtler, Robert E.	O.C.,CWS	Add. chgd. from: 20 E. Mill St., Selinsgrove, Pa. to: 412 W. Pine St., Selinsgrove, Pa. BA Group, 1st Gas Regt.
Schreiner, Claude L.	O.C.,CWS	Add.chgd. from: 312½ W. Hopocan Ave., Barberton, Ohio. to: 409 W. Hopocan Ave., Barber- ton, Ohio. BA Group, Prop. Div., E.A.
Smith, Donald P.	O.C.,CWS	Add. chgd. from: 130 James St., Waukesha, Wis. to: Penn- sylvania Salt Mfg. Co., Wyan- dotte, Mich. BA Group, E.A.
Spurlock, William W.	O.C.,CWS	Add. chgd, from: High School, Cheyenne Wells, Colo. to: Box 381, Cheyenne Wells, Colo. BA Group, Edgewood Arsenal.
Tambling, Robert L,	6th C.A.	Temp. add. to 6/1/26: 805 W. Illinois St., Urbana, Ill. TA Group.
Tucker, Elton B.	O.C.,CWS	Add. chgd. from: 85 - 9th Ave., New York City, to: Livingston Hall, Columbia U., New York City. BA Group, Chem. Div., E.A.
Wakerlin, George E.	O.C.,CWS	Add. chgd. from: 6353 So. Wood St., Chicago, Ill. to: Uni- versity Club, Madison, Wis. BA Group, Med. Res. Div., E.A.

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, Wash- ington, D.C.

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