"OVERCAME SOLDIERS ACCUSTOMED ONLY TO THE USAGES OF THE PAST."¹

III.

"GAS" (CHEMICAL WARFARE) DEFENCE AND THE HEALTH SERVICE.²

PART II: A SUGGESTED SCHEMA FOR ITS PART IN A CHEMICAL WARFARE SERVICE.

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INTRODUCTION.

In No. II of this series arguments were advanced for the place which it was considered the Health Service should occupy in a special C.W. (Chemical Warfare) Service if the best results for the Army as a whole were to be obtained. In this paper a detailed schema is given for the Health Branch of such a service, in the hope that it may interest some and rouse others to criticism, whether friendly or the reverse. It must be clearly understood that nothing more than the outlines of a nucleus are intended. After all, one must begin somewhere, and although it is quite obvious that for financial, political, and military reasons only a nucleus could be formed at present, that is no reason why the nucleus should not embody the general lines of future development. Indeed the very fact that it is recognized as a nucleus of something that must eventually grow makes it all the more important to get the first lines pointing in the right direction. It is for this reason that criticism of any sort would be welcome as indicating that interest has been stimulated, and thought given to the subject.

It is well recognized that the advance of understanding (knowledge plus training and experience) takes time, and although the steady growth of a C.W. Service beyond the skeleton herein suggested is visualized, it is quite impossible to foresee the detailed lines which the growth will follow. The general trend can be well imagined, but the details depend upon the rapidity and character of the development of aerial warfare and of mechanization, upon the finding of suitable new substances in this and other countries, etc. In fact, any attempt to look forward more than a few years carries one at once into the realms of imaginative fiction, and there is little

¹A quotation from W. Morris's "Napoleon," p. 205.

²As this article is the third of a series, the title "Health" in lieu of "Medical," suggested in No. I, is retained for the sake of the sequence of thought, except in those paragraphs which deal with the past or the present.

³As I am at present doing duty at the Chemical Warfare Experimental Station, Porton, I wish to avoid the possibility of misunderstanding and to state definitely that the views expressed in this paper are my own personal views, and are in no way either "official" or "inspired."
H. S. Blackmore

incentive to invade a province so full of pitfalls whilst there is so much solid ground to be found, surveyed, and mapped out by a consideration of "the devils we wot of."

In order to present as complete a picture of the subject as space, and your patience, will permit, it is proposed to give a very short précis of the past and the present, and to end with the schema which forms the title and object of this paper. In this way it is hoped to present, in a logical sequence, the lines of observation and thought which have led me to the formulation of my suggestions. This question of the broad lines of organization of a C.W. Service is part and parcel of the general and particular views expressed in Parts I and II of this series and should be read in their light.

THE PAST. ¹

At the time of the inception of Chemical Warfare in April, 1915, the Army and the Nation turned to the Medical Service for help. This was a natural and instinctive action, and displayed the unerring clarity of thought so usual in such cases. For some time our whole conception of C.W. was expressed in the one word "Defence," and during this period the control was vested in the Medical Service, although the usual anomalies, inseparable from the present organization of the Medical Service, were already creeping in, and the ultimate responsibility for "Gas Defence," as it was called, rested with the Adjutant-General's branch.

The next step was the institution in March, 1916, of a "Directorate of Gas Services." This Directorate was divided into two branches, A and B, and to B branch (the Defence branch) was appointed an officer of the Corps primarily concerned with such matters by definition and by training—the Medical Corps. Here then we see some glimmerings of logic and clear thinking, but a reference to the History of the War [1] will show that there was even now some slight fog, and the small bright light of common sense was quickly put out.

In July, 1917, the post of A.D.G.S.(B) was taken from the Medical Service and a Chemist was appointed instead, a Physiologist being attached for liaison. After this the Medical Service were not (theoretically) concerned in any way with "Gas Defence" beyond their own units and the treatment of cases.

This was the guiding principle which persisted throughout the rest of the War, and which has coloured and directed the trend of thought ever since. It is not suggested in any way that the Directorate was anything but efficient and successful, but it is maintained that it was in spite of an ill-conceived organization; that there is a better and more logical organization; and that the inherent anomalies, resulting waste of energy, and failure to reach the highest possible pitch of efficiency are

¹ The statements in this section refer to the organization in France. The Medical Service at the War Office was responsible for ante-gas defence and for the provision of ante-gas appliances for all war areas from April 1915 until Oct. 1917, when the Ministry of Munitions took over anti-gas work.—Ed.
still with us. The "God of things as they Are" is still triumphant over the "God of things as they Might-be."

The following diagram is of the Directorate as then constituted:

```
Director of Gas Services
      /      /
     /       /
 Offense  Defence  Central Lab.
     |       |
 Asst. Dir. Gas Serv. (A) Asst. Dir. of Gas Serv. (B) Physiological Adviser to maintain liaison
     |       | with Med. Service. Information about
 Spec. Brigade R.E.                             Gas Casualties
     |       |                        
     |       |                        
     |       |                        
     |       |                        
     |       |                        
 Army H.Q.                                        H.Q. L. of C.
 Chemical Adviser                                 Chemical Adviser
     |       |                        |
 Asst. Chemical Adviser                           Asst. Chemical Adviser
     |       |                        |
 Commandant, Army Gas School.                     Base Schools
     |       |                        |
 Two day courses for Staff and Senior Reg. Officers
     |       |                        |
 Corps H.Q.                                        
 Chemical Adviser                                 
     |       |                        |
 Commandant, Corps Gas School.                    
     |       |                        |
 Weekly courses for Officers and N.C.O.s
     |       |                        |
 Div. H.Q.                                         
 Div. Gas Officer                                 
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The Present.

After the War, Chemical Warfare suffered an almost total eclipse. The cause of this is not far to seek. It is due to the combination of many factors, not the least of these being the general opinion of the whole matter produced and fostered by the Press propaganda of 1915. When the Germans first took advantage of a weapon which was admirably suited to their needs—how admirably suited and how powerful they, luckily for the Allies, did not foresee—our surprise and consternation were partially counteracted by a vigorous, and probably inspired, campaign by the Press. This writing up of the subject, which aimed at a full description of the worst horrors of this new weapon so as to fan the wrath of the nation and to bring into sharp relief the heroism of our troops, was discontinued after a short while for equally obvious reasons, so that the first impression has remained to this day, a sort of pious horror of Chemical Warfare as a specific entity totally at variance with fact, but widespread, strong, and very difficult to eradicate.

A second factor of importance was, and still is, the attitude of the Mind Military (in which of course the Services are included) towards any
innovation, especially ones which threaten to demand the replacing of peaceful retrospection by active and anticipatory New Construction. Of such an iconoclastic nature are Tanks and Chemical Warfare, and the attitude of mind is well exemplified by the remark of a certain Senior Officer, who is reported to have said on hearing that the Armistice was signed, "Thank God! now we shall be able to get back to some real soldiering" [2].

Either or, perhaps, both these factors played their part in the production of the famous Washington Conference, but such Conferences and Agreements are notoriously ineffective when faced with the hard facts of a war-in-being, and in this connexion it may be of interest to quote from the speech of Admiral Mahan, the American representative at the Hague Conference of 1907, when a similar undertaking was arrived at and agreed to by most of the delegates. He said [3]:—

"The objection that a machine of war is barbarous has always been raised against new weapons, which were nevertheless finally adopted. In the Middle Ages it was firearms which were denounced as cruel. Later, shells, and more recently, torpedoes have been denounced. It seems to me that it cannot be proved that shells with asphyxiating gases are inhumane or unnecessarily cruel machines of war, and that they cannot produce decisive results. I represent a people that is animated by a lively desire to make warfare more humane, but which may nevertheless find itself forced to wage war; therefore it is a question of not depriving itself through hastily adopted resolutions of means of which it could later avail itself with good results."

The realization of the fundamental truth of such observations, coupled with the necessity for research, training, and practice, in order to be able to grasp and to foresee and forestall possibilities, kept chemical warfare alive as an unavoidable integrant of war.

These mutually antagonistic interests have produced, as the resultant of a "pull devil, pull baker" atmosphere, the peculiar conglomerant we have to-day. A diagram of that part which directly affects the Medical Service of the Army follows, and to grasp the true inwardness of the situation it must be remembered that the official watchword is defence.

Very little thought or perspicacity is required to see that this embodies not only all the old objections but some brand new ones as well, for it gives no systematization of control at the central point, the War Office, but an indefinite admixture of many branches, with the usual anomalies which come from those having de jure responsibility being vested with control and executive authority instead of those having de facto responsibility. This curious result arises from the latter having what is euphemistically known as "advisory responsibility."

The scheme also perpetuates the divorcing of "Ways" from "Means" and the violation of the cardinal principles "Economy of force" and "Unity of control." It supplies no systematization of control of training or practice, except through non-technically-expert sources.
"Gas" Defence and the Health Service

Master General of Ordnance (in addition to his other duties)

Director of Artillery (in addition to his other duties)

Liaison with D.G.A.M.S.

A.M.D. 6

Represented on Main and Sub-Committees, C.W.C.^

Commandant, Experimental Station, Porton.

C.W. School under selected Regimental Officer.

Proposed that R.A.M.C. Officers and possibly N.C.O.'s should attend sometime; none so far.

1 C.W.C. = Chemical Warfare Committee. This is a body which, at present, controls the whole of Chemical Warfare Policy and Research. It is composed of eminent scientists of various branches of science, with ex officio members from each of the three fighting services. The M.G.O. is the Army member. Under it are a multitude of sub-committees, amongst which are the Physiological and Medical.

Up to date the scheme has produced no systematic training or practice whatever for the formation which should be primarily concerned with the problems of defence, the Royal Army Medical Corps; for the officers and non-commissioned officers in the Physiological Department at Porton are research workers on the scientific staff of the station.

The Future.

Before passing on to put forward the details of the suggested schema for the pure defence side of a special Chemical Warfare Service let us recapitulate the basal contentions on which it is founded, and which are set out at some length in Parts I and II of this series:—

(1) Control and co-ordination of the varying factors which go to make up the whole, by those who are really responsible and are in a position to bring a complete understanding of the problems involved.

(2) The removal of the anomalies which result from the vesting of de jure and de facto responsibility in different hands, thus depriving the experts— who naturally carry the de facto responsibility—of executive power and giving it to the non-experts with de jure responsibility.

(3) Conservation of energy by unity of control.

In other words the formation of an Executive Health (Medical) Service to deal entirely and completely with all matters which are included in the vital and hydra-headed problem of the provision of healthy men. It hardly needs emphasizing that the prevention of disease and the treatment of sick or wounded are necessarily included in the provision of healthy men, and it is self evident that C.W. defence comes into the same category as prevention of disease.
**H. S. Blackmore**

Director of Chemical Warfare.

Probably M.G.O. in addition to his other duties.

<table>
<thead>
<tr>
<th>Dep. Dir. C.W. &quot;A&quot;</th>
<th>Dep. Dir. C.W. &quot;H&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probably one of the D.'s of &quot;A&quot; in addition to his other duties, at any rate at the beginning. Ex officio member of C.W. Main Committee.</td>
<td>Suggested Dir. of Hygiene in addition to his other duties if the corresponding &quot;A&quot; is the same, if not then a special whole-time apppt. Ex officio member of C.W. Main Committee.</td>
</tr>
</tbody>
</table>

Commandant Exp. Station, Porton,

C.W. School, Porton.

<table>
<thead>
<tr>
<th>&quot;A&quot; branch i/c specially selected Reg. Officer</th>
<th>&quot;H&quot; branch i/c selected Health Corps (seconded) Officer. 3-year appointment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whichever is senior will be O.C. School.</td>
<td>Three Health Corps (seconded) officers of the Physiol. Dept. of not less than 8, or more than 12 years' service. 3-year appointment.</td>
</tr>
</tbody>
</table>

A.D.C.W. "H" Staff Officer to D.D.C.W. "H," ex officio member of Phys. and Med. Sub-committees. 3-year appointment

A.D.C.W. (Training) "H" temporary appointment. See notes on schema.

Three Specialist C.W. "H" Branch Officers, graded as D.A.D.C.W. "H," one for Northern and Scottish, one for Western and Irish, one for Southern, Eastern, and London District Commands

Regimental Officers, trained at the C.W. School, Porton, and with their Depot or Unit (now with Units only and known as "Anti-gas Officer" or "Gas" Officer)

### Notes on Duties.

D.D.C.W. "H"—General supervision, co-ordination, and control of all purely defensive C.W. organization and training, subject only to the approval of the Director of C.W. Direct responsibility for policy and practice.

A.D.C.W. "H"—(1) Close liaison with physiological and medical sub-committees, with other fighting services, voluntary aid and civilian organizations in general, the Experimental Station, Porton, generally, and specially with the C.W. School and the Physiological Department through Commandant, Porton.

(2) Control and co-ordination of: (a) Schemes for mechanical defence, such as proofing of ambulances, tanks, dug-outs, etc. (b) Schemes for the protection of personnel, either individual or communal or both, including the care of the respirator, protective clothing and factory workers. (c) Schemes for deturging (de-gassing) food, materials, clothing, equipment, etc. (d)
Defensive training, and the elaboration and practical adoption of the above schemes. (e) Modification of existing practices to meet new substances or the development of old ones. (f) All questions relating to casualties, their collection, evacuation and treatment, including the provision of special equipment for units and the provision of standard equipment for C.W. "Teams" (analogous to the equipment for Surgical Teams). (g) Intelligence: summaries and docketing for reference of matter concerning the defensive work of armies, the preparation of manuals, and of pamphlets for issue on mobilization if required, etc.

A.D.C.W. "H" (Training).—Specially selected officer to supervise all defence training of the Army, and to lecture to Officers and N.C.O.'s of all branches of the Regular and Territorial Army, including Staff, Staff College, Units and Services. Graded as A.D.C.W. "H" with headquarters at the War Office but to be almost his whole time on tour. This appointment would only be required for a short time, say three years at the most, and to be superseded as soon as the general standard of training is satisfactory by the Specialist Officers in Commands, who would be appointed as soon as individuals sufficiently trained for these posts became available, and by general supervision and control under the A.D.C.W. "H."

Specialist Officers.—Supervision of defensive training, both winter and summer, and liaison with A.D.C.W. "H" on all matters controlled by him. Attached to G. S. branch of Command Staffs, not to the Medical branch unless the latter were executive, i.e., "4th Branch of the Staff, 'H' Branch,"

Note.—As will be seen from the following diagram it is postulated that the A.D.C.W. "H" and A.D.C.W. "H" (Training), revert to the Corps on termination of their tour in the appointment. This is subject to the possibility of a post becoming available in keeping with their seniority, such as may well happen by growth of the Service, or in our Overseas forces, or in the Dominions as Instructor and Organizer in the event of their taking up the subject of C.W.

A conception of a possible internal organization of the Officers (see next p.).

RANK, PAY AND ALLOWANCES.

A.D.C.W. "H."—Lieutenant-Colonel (or to carry temporary rank and pay of Lieutenant-Colonel), with the special staff pay of an A.D.M.S.

D.A.D.C.W. "H."—Lieutenant-Colonel or Major (or to carry temporary rank and pay of Major) with specialist pay at 5s. per diem.

Officer at the C.W. School.—To rank as for D.A.D.C.W. "H."

Officer at the Phys. Dept., Porton.—Pay of substantive rank plus specialist pay at 5s. per diem, specialist pay and tenure of appointment to start after conclusion of Course of Instruction.

N.C.O.'s.—Substantive rank Serjeant and upwards, local rank and pay of Serjeant for all others; the above to be subject to the proviso that all
ranks shall be eligible for such "danger," or other special pay or allowances as shall be granted to other ranks in the C. W. Service.

**Diagrammatic Representation of Suggested Internal Organization.**

<table>
<thead>
<tr>
<th>A.D.C.W. &quot;H&quot;</th>
<th>Specialist C.W. &quot;H&quot; Officer</th>
<th>Officer at C.W. School, Porton</th>
<th>Officer at Phys. Dept., Porton</th>
<th>Other C.W. post</th>
<th>Corps Depot</th>
<th>Revert to Corps</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| A.D.C.W. "H" (Training) | X | X |

| Specialist C.W. "H" Officer | X |

| Officer at C.W. School, Porton | X |

| Officer at Phys. Dept., Porton | X |

| N.C.O. at— | X |

| Phys. Dept., Porton | X |

| C. W. School, Porton | X |

| Specialist Officer C.W. "H" | X |

| Depot of Corps with Training Officer | X |

On first appointment from the Corps all Officers and N.C.O.'s to go to the Physiological Department, Porton. The lines above indicate possible subsequent moves to or from the various appointments.

"Other C.W. Post" suggests the probable growth of the Service, and inherent in this conception is the possibility of subsequent permanency of a transfer to it. Also applicable to other ranks.

**Appointment to Chemical Warfare Service.**

Officers—Power of first appointment to rest with D.D.C.W. "H," subject to approval of D.C.W. and D.G.M.S.

Other ranks.—Ditto, but also six months' probation at the Physiological Department, Porton, before confirmation of appointment and grant of local rank and pay of same, if any.
"Gas" Defence and the Health Service

All Officers and other ranks to be seconded from the Corps but to be required to pass the usual promotion examinations as and when due.

Power of transfer within the service to rest with D.D.C.W. "H."

Power of reversion to the Corps to rest with D.D.C.W. "H," subject to the approval of D.C.W., said reversion to be allowed to any Officer or other rank if desired at the termination of any tour of appointment.

REFERENCES.