Some fifty years ago, whilst Lord Roberts was warning the country of the dangers of military unpreparedness, a less well known soldier was elaborating the same theme. Colonel G. F. R. Henderson, a prolific writer on the Science of War, best known for his life of Stonewall Jackson, pointed the need for study of their profession by soldiers of all ranks. Moltke, the real founder of the great German Army which was to bring us so near to disaster, knew, said Henderson, "not only how to command an army, but how to teach an army." The Prussians, recognizing that intelligent co-operation was of more value than mechanical obedience, were the first to make the distinction between "orders" and "instructions." The British tendency was towards regarding tactics and strategy as matters for common sense, and Henderson, holding that they were matters for profound study by professional soldiers, pointed out that "the soundest common sense must be most carefully trained." "All war," he agreed, "is simple, but the simple is most difficult."

A recent comment by General Gruenther, too good to be kept from any who may not have heard it, was: "There are two professions in which the amateur is far better than the professional. The second of these is military strategy."

Colonel Henderson would find much to commend nowadays. At large scale manœuvres commanders and troops are practised in their duties in the field; the only factor which cannot be properly studied being unfortunately the most important of all—the moral, which, as we are never tired of reminding one another, Napoleon said was to the physical as three is to one. We can see how our soldiers react when tired and cold, but not when tired, cold, and scared.

The education of senior officers in the military profession is provided for by
the so-called study periods or indoor exercises. Since the former term is too suggestive of the sixth form and arouses uneasy feelings as to the possible penalties of inattention, the latter is preferred, though itself not entirely self-explanatory, since exercise is usually strikingly lacking. For the benefit of those who have not attended them, these exercises somewhat resemble the sessions of a military soviet at which all can speak their mind free from fear that deviationist tendencies will be punished. Not infrequently some time is spent in proving Colonel Henderson’s thesis that “the simple is most difficult.”

For his exercises in December, 1951, the Director-General chose two important main subjects. The first was the medical aspects of atomic, biological, and chemical warfare; and the second an examination of how the present field medical organization, adopted as a result of the experience of the last war, measures up to present-day conditions.

The first day began with a presentation by Brigadier D. Bluett of the case for and against the use of trailers in field ambulances, including a demonstration of some of the points, and an open discussion. This was a useful period, because we will certainly have to use more trailers than we have been accustomed to, since there will, in the early stages of any future war, be a considerable dearth of prime movers—a term which does not, as one might think, merely describe the vehicle which tows all the other vehicles in the morning to get them started.

Next, after we had heard a report from Colonel G. Anderton, A.D.M.S., 1st Commonwealth Division, upon the good work being done in Korea by R.A.M.C. corporals with battalions, Lieutenant-Colonel Ahern demonstrated the proposed new equipment for regimental medical establishments.

One of the aims of this is to enable the R.M.O. of fighting units to take forward the essentials for his R.A.P. in battle—his “F” Echelon equipment—in circumstances in which his 3-ton lorry cannot accompany him. This “F” Echelon equipment is portable by pack or in a jeep and trailer—the 10-cwt. trailer being a recommended addition to present transport scales. Drugs, etc., have been brought up to date, and a box of empty bottles and ointment jars suggested, so that mixtures can be carried to suit individual preferences and seasonal needs—“cough mixture in winter, and calamine lotion in summer.”

After lunch we saw a helicopter and an Auster adapted to carry two stretchers, with a hinged tail. (Later in the exercise we saw the Westland Sikorski, which carries six stretchers, and a Bristol Sycamore adapted to carry two.)

Major-General Bower, Director of Land/Air Warfare, introduced a talk by Major Coyle on the Army Light Aircraft Organization, and took part in the subsequent discussion during which we heard a talk by Wing Commander Dearberg from the Air Ministry. In discussing some lessons of the recent manoeuvres there was general agreement on the inadequacy of the present provision of wireless sets for the medical services of divisions—i.e., a pool of four sets which we share with Provost, and even possibly with other claimants on their use indicated by a nebulous “etc.” in the establishment of divisional signals regiments. Fears were expressed that without adequate wireless control the medical services of a modern division could not be fully efficient, a danger
which particularly affected armoured divisions. The Director-General assured the meeting of his agreement with this view, and of his intention to press for the restoration of the divisional medical wireless net. He emphasized how the lack of R.T. control had contributed during manoeuvres to faulty deployment of field ambulances—too many field ambulance vehicles and personnel being too far forward in brigade areas, leaving divisional troops and administrative areas without medical cover.

Dealing with the growing tendency towards suppression of the red cross the Director-General stressed that when a C.C.S. complies with the requirements of paragraph 176, R.A.M.C. Training Pamphlet No. 2, it should not ever be necessary for tactical reasons to forbid its display of the red cross. For the A.D.S. his ruling was that "whilst it is agreed that use of the red cross must be secondary to tactical considerations, this should not lead to the ruthless suppression of the red cross on every occasion. For example, once the element of surprise is lost and the enemy clearly knows that a formation is in a certain area, the red cross might be displayed by an A.D.S. if it were a reasonable distance from a headquarters or gun area. The policy of the A.D.M.S. must be to ask the divisional commander for permission to display the red cross as often as the tactical situation will allow."

The second day was devoted to atomic warfare and began with a most interesting lecture by Colonel Tyler, commandant of the Joint School of Chemical Warfare, on the tactical uses of the atomic bomb. Lieutenant-Colonel Ahern then staged a fashion parade (see Fig. 1) illustrating the particular risks of existing orders of dress in the Army, from (a) "flame burns" and (b) "flash burns." In this convenient classification of burns resulting from an atomic explosion, (a) flame burns are burns of various degrees from contact with fires or personal clothing set alight or scorched; and (b) flash burns are burns due to the intense thermal radiation of the atomic flash, which in the slighter degrees at the longer distances may show only early erythema before later development of vesication. Soldiers suffering from slight or early flash burns of face and hands will have to remain on duty and be prepared to fight if the anticipated enemy attack, to which the atomic explosion was a prelude, should develop. To enable them to do so some form of protective glove must be provided, and Major-General Mollan described experiments which have been carried out in the R.A.M. College in this matter. Major Kippax demonstrated radiac instruments used in the detection and estimation of radio-activity.

CLOTHING AND THE ATOM BOMB

To be of value clothing should fulfil the following requirements:

(a) It should not be inflammable.

(b) It should provide good insulation against the scorching heat from the bomb.

(c) It must cover as much of the body surface as possible and thereby prevent flash burns.
Exercise "Medical Mushroom"

FIG. 1.—VARIOUS TYPES OF ARMY CLOTHING

“A” Oil Denims. Provides good protection against flash burns, but poor insulation and is very inflammable.

“B” K.D. shorts and shirt with sleeves rolled up. Eighteen per cent. body surface exposed. Negligible insulation. Material would ignite at 1½ miles from GZ of a standard atom bomb.

“C” K.D. slacks, sleeves rolled down and slouch hat. The danger from poor insulation and of catching fire remains, but only eight per cent. body surface is now exposed.

“D” Battle dress, shirt sleeve order. Fourteen per cent. body surface exposed. Insulation is fair except where the shirt is in close contact with the shoulders. This clothing is woollen, will not burn, but will char at about 1½ miles from GZ.

“E” Battle dress. Seven per cent. body surface exposed. Good insulation. Will char at 1½ miles from GZ, but will not burn.

“F” Field Service Marching Order. The steel helmet affords considerable additional protection from flash burns and scorching.

“G” Field Service Marching Order with improvised netting helmet screen and gloves. These afford a further appreciable reduction in the dangers of scorching and flash.

“H” Fatigue dress. This soldier is wearing his jersey, gloves and a balaclava made from a cap comforter. This dress will not burn, provides good insulation and covers practically the whole body.

A most interesting series of demonstrations and playlets was then staged by the Field Training School. We saw the effects of an atomic explosion on various types of infantry post in the field, and the protection which well-made dug-outs and slit trenches can afford. Eighteen inches of head cover reduces gamma radiation by four-fifths and protects against thermal radiation at all distances. Ordinary slit trenches afford protection varying with distance and direction from the explosion, and even the man caught in the open will get some protection if he can get into his slit trench within one second. Whilst the heat radiation is directional, the gamma radiation is not, as gamma rays become scattered, and at ranges where shelter might make all the difference to the casualty risk they descend upon the body from all directions. Thus a slit trench which, if deep enough, gives complete protection from heat radiation gives only partial protection from gamma radiation. The special danger of uprooted trees must be remembered by troops who tend when possible to be somewhat "forest bound."

An excellent type of dug-in R.A.P. (see Fig. 2) was shown.
In the playlets and the demonstration of a field ambulance dealing with atomic bomb casualties, with other-rank teams dressing burns, "documenting" cases, and reading and recording the degree of radiation to which they had been exposed, the extent to which we will have to rely on well-trained other ranks was underlined by the young soldiers of the Field Training School, who played the leading parts with distinction. The realism of the demonstrations was enhanced by the brilliant "casualty faking" of Staff-Sergeant Reynolds and his helpers, and one of the more moribund of their specimens had reached the medical ward of a general hospital in time to illustrate the talk on the Radiation syndrome read

FIG. 2.—SUGGESTED DESIGN FOR DUG-IN R.A.P.

Stage 1. Dig pit (1) 8 ft. x 5 ft. by 3 ft. deep. This provides cover in which M.O. can work at once.
Stage 2. Dig pit (2) at right angles to above 20 ft. x 4 ft. by 3 ft. deep. This provides cover for three stretcher cases.
Stage 3. Dig two bays (3) at the opposite side to (1), each 8 ft. x 2 ft. by 3 ft. deep.
Stage 4. (a) Deepen (1) and (2) to 6 ft. deep.
(b) Construct sloping in roads (4) to join each end of (2) at 6 ft. depth.
Stage 5. Roof pits (1), (2) and (3).

Time required to dig, approximately 200 man hours.

by Colonel Meneses for the Director of Medicine. To the long discussion which followed valuable contributions were made by Dr. J. Loutit, Director of the M.R.C. radiobiological research unit at Harwell, and by Mr. P. Clarkson of Guy's Hospital, who amongst many interesting points suggested that our ideas about local penicillin and intravenous fluids in the treatment of burns must be kept under careful review. On the whole, although the pressing and complex problems of atomic warfare were painfully obvious, they seemed to come into focus. As in all past warfare, apart from the inevitable influence of bad luck, badly trained, ill-disciplined, and careless troops will suffer most. Trained soldiers can do much to protect themselves, and a field ambulance if itself intact can attack the problem with determination.

On the third day, from the Chemical Warfare playlets staged by Major Whitcker with the help of Lieutenant-Colonel Wybergh and Surgeon Commander McKee from Porton, we learned that here again it is an affair of seconds, for if the soldier is not observing the "safety rule" when a concentration of nerve gas is put down his respirator must be on in one second if he is to avoid most unpleasant effects from these poisons, which are cumulative in their effects, and
to which increased susceptibility persists for some time after exposure. During the last war one often suspected that the chemical warfare experts might not be displeased if given a chance to prove their theories in the field. Many of their appointments would have been automatically up-graded at the onset of chemical warfare, and I recall one who ended a moving poem describing the horrors of such a disaster with the lines—

"Hitler suffers shame eternal
I—become lieutenant-colonel."

They could fairly claim that just as tear gas disperses a mob less brutally than bullets, so chemical weapons were more humane than explosives, causing less death, less blinding, and virtually no mutilation. With the motto, "A casualty is a liability, a corpse is but a memory," their aim was to cause maximum embarrassment and lowering of morale and the minimum of fatalities. Nerve gas has altered all that, and in Major Whitcher's smoothly persuasive Grand Guignol there was no advocacy of the offensive use of gas, and no underestimation of its evil effects. It was encouraging to learn what strict observance of the "safety rule" (which is reproduced at the foot of this page) and good gas discipline can do in prevention, and that for treatment we have a good antidote in the early injection of atropine, which is repeated as required, nerve gas casualties having a remarkable tolerance for atropine. For milder cases with only eye symptoms, which are unaffected by atropine injections, atropine ointment gives quick relief. The problem of restoring respiration in cases with paralysis of the respiratory muscles by means of positive pressure artificial ventilation was also discussed.

Chemical warfare would give still more responsibilities to our R.A.M.C. other ranks, especially to the N.C.Os. with combatant units, and the Director-General said that he hoped that we would not overburden them. I believe that, although the National Service soldier has rightly earned our esteem, the satisfaction often expressed by inspecting officers is not always shared by the specialists whose cases these young orderlies are nursing. Keen, willing, and intelligent learners though many of them are, they are just not with us long enough to become the equal of that great body of experienced nursing orderlies with whom we began World War II, who were the backbone of the nursing staff of many a field unit and surgical team.

NOTE: THE SAFETY RULE

If for no obvious reason you have

(a) Dimming of vision and difficulty in focusing on close objects;
(b) Irritation of the eyes;
(c) Sudden headache;
(d) A feeling of choking or tightness of the chest and throat;
(e) A running nose;

or there is a

(f) Hostile bombardment;
(g) Suspicious smell;

then for safety the presence of a war gas must be assumed until proved otherwise.
The possibilities of biological warfare and means of protection against it in the field were then described by Brigadier Sachs, who with the help of Colonel Macfarlane and a team of experts from Porton showed us how such agents may be detected and identified in the field. Brigadier Sachs ended his lecture with the assurance that biological warfare could probably not be used with success against this country when in a full state of preparedness to preserve the public health. As Lieutenant-Colonel Cruickshank, Major Bruce White and Mr. Powell performed their esoteric mysteries at their altars, which were exact replicas of the benches in the new Mobile Pathology Laboratory, it may all have seemed to them to be simple, but amongst their high-ranking audience a few disciples of Colonel Henderson were finding that "the simple is most difficult." This subject does not lend itself to further elaboration here even if I were able to do this properly. In these "debunking" days, when the Seven Wonders of the World are forgotten heaps of ruins which few could name, it is comforting to retain one's faith in a few well-chosen mysteries. For me these shall be the Loch Ness Monster, the Abominable Snowman and the Director of Pathology.

The day ended with two interesting lectures—"Recent Advances in Dental Surgery," by Colonel Brazenor; and "Medical Aspects of the Campaign in Korea," by Lieutenant-Colonel Niven. It was wonderful to hear that the dental drill may be replaced by a current of charmed air containing abrasive particles, though the sensitive may still get a twinge from the name selected for this procedure—the "air-brasive" technique. The interest shown in Colonel Brazenor's streamlined chromium-plated dentures seemed to promise some flash and sparkle in the oratory at next year's exercise.

The last day of the exercise was less spectacular but no less important, and great interest was aroused by the discussions which ranged over all field medical units, the field dental organization, army health organization, and the part to be played by other ranks of the Q.A.R.A.N.C. in the field. For a précis of the opinions expressed, for the Director-General's views in his summing up of the exercise, and for an elaboration of my brief account, I refer you to the official record of the exercise which will shortly be published. I hope that it will be as valuable a training document as its predecessors, the reports on medical exercises "Bamboo," "Britannia" (Vol. 11) and "Horatius" (Vol. II).

Ending as I began with Colonel Henderson, I recommend to you the study of these four medical exercises as he recommended to officers the careful study of campaigns. Reminding us of Napoleon's dictum that "the only right way of learning the science of war is to read and re-read the campaigns of the great captains," he warns that the study is laborious as there are no convenient summaries. When Napoleon read the campaigns of Alexander, Hannibal, and Caesar he was not in search of hints on strategy or tactics, but of how the great leaders' minds worked. By no means every word in these exercise reports will stand the test of time, but you will find in them useful indications of lines of thought, and not on tactical or administrative matters alone. The British are of warlike stock and on exercises, as in war, like to feel familiar with the battlefield and with the workings of generals' minds, but when at one of these exercises...
someone, whether in the uniform of the services or of Harley Street, gets up and talks pure doctoring, as did Mr. Clarkson during “Medical Mushroom,” our hearts warm to him. In these exercises you will find most interesting professional communications from such authorities as Professors J. Bruce, H. L. Marriott, J. R. Squire, A. B. Wallace, Sir Arthur Porritt, Sir Ernest Rock Carling, Sir Claude Frankau and Dr. Wansborough Jones. These reports deserve to be taken from office cupboards for an occasional airing.

Owing to the Director-General’s absence on tour I cannot submit this article for his approval, and this makes it easier for me to say here what was very much in the minds of us all on the last day of his last exercise. This is to thank him for these four exercises, not only because as training material they reinforce the value of the new R.A.M.C. Training Pamphlet No. 2, published during his tenure of office, and record the opinions of many experienced officers in the post-war period, but because they have been such fun. The staging and presentation of the last three have been a series of triumphs for a new unit which the Director-General brought into the world and nursed through its teething troubles—the Field Training School under its first two commandants, Colonels Crosse and Ahern.

Regular officers have met, lived with, and exchanged views with senior territorial medical officers, combatant officers, medical officers of the sister services and from Government departments and establishments, and even with senior medical officers of most of the North Atlantic Treaty Organization countries.

Mindful of their warrior ancestry though they may be during a war, the British have traditionally neglected or even despised their soldiers when a long war was over.

Wellington’s infantry, called by an enemy marshal “the finest in the world,” who had done more than any other troops to defeat Napoleon, were left—those who were not dying of their wounds in some forgotten corner of Belgium—to trudge home and “given neither pension, nor medal, the finest army England had ever had was dismissed without regret or gratitude.” One of Marlborough’s soldiers, Corporal Mathew Bishop, had complained of the same neglect in these well-known words:

“God and a soldier, men alike adore
When at the brink of danger, not before.
The danger past, alike are both requited—
God is forgot, and the brave soldier slighted.”

But this time, whether because of National Service, a kindlier Press, or more probably the continuing threat to national security the anti-military revulsion has not occurred. The army is almost popular; its manoeuvres are watched, if not with interest at least with amused tolerance.

The medical services, under the leadership of Lieutenant-General Sir Neil Cantlie, have taken their full share in the recent drive towards efficiency and readiness for war.