THE WAR.

MEDICAL ARRANGEMENTS OF THE BRITISH EXPEDITIONARY FORCE.

[*From a Special Correspondent in Northern France.*]

THE WOUNDED FROM RECENT ACTIONS.

INQUIRIES addressed to various surgeons who see large numbers of cases have failed to elicit any circumstances which point towards any material difference in the general character of the wounds resulting from the Neuve Eglise and St. Eloi engagements as compared with those from earlier operations. Head wounds, of course, did not predominate as in the past two months, when the chief fighting has been between snipers, but figured to about the same extent as in the last weeks of 1914, when trench rushing and heavy shell firing were on both sides the order of the day. The proportion of severe wounds in other parts of the body would seem to have been about the same as before the comparative calm set in after Christmas, and despite the fact that at the time of the fighting and for some days previously the trenches had been relatively dry gas gangrene occurred.

The casualties included a considerable number of the Royal Army Medical Corps, owing to the fact that the siege tactics of the last six months were for the time being abandoned, and there would seem to have been a partial return to ordinary battle practices on the medical side of affairs, battalion medical officers advancing to form regimental aid posts, and some field ambulances throwing forward their bearer sections. The general arrangements for the evacuation of the wounded from the field medical units to the advanced and distant hospital bases worked well. There was no hitch in the ambulance train service, and there was a sufficient supply of hospital ships available. Both Southampton and Dover have for some time past been used as disembarkation ports, and ships told off for the latter destination can, if necessary, embark, transport, and disembark two convoys every day. All hospital ships I have ever seen have been easily distinguishable from all other ships and at a great distance by the fact that they are painted white with a green band from stem to stern. Lately steps have been taken to render them equally distinguishable at night by placing a row of small green lights along the taffrail on both sides, and a large red cross amidship built up of red lamps on one side and a corresponding green cross on the other. It is intended, I was informed, to light all hospital ships in corresponding fashion. The high speed of these vessels is an additional protection against submarine attacks.

BARGE AMBULANCES.

From statements made to me by a prominent member of the Union des Femmes de France, in a recent conversation, it would appear that the society is quite satisfied up to the present with the result of its experimental work in the matter of floating ambulances. Very few voyages have at present been made, despite the many months that have elapsed since the first of the barges was completed, but they have sufficed to show that the idea is of real utility, serious cases being easily transportable by these means, and no material difficulty in treating them arising. The voyages hitherto made have been from Bar-le-Duc, close to the Vosges battle front, and to Dijon, midway between Paris and Lyons. Certain administrative difficulties in regard to discharging the vessels rapidly on arrival at their destination would appear to have been encountered, and it is the delay thus caused rather than the time occupied on the journey which has led to comparatively few patients having so far been carried by these boats.

I understand that they travel about ten kilometres an hour, and stop at night-time for a certain number of hours, if possible in the neighbourhood of a town or village. Each of the four units of the hospital—that is to say, each of the four barges of which it consists—is fitted up to accommodate 30 patients, together with a doctor, 3 nurses, and one or two men who understand barge work. They are towed along in a line by an electrically-driven tug. Each barge has part of its length partitioned off to provide space for the performance of any operation that may be necessary, and the barge that I saw at Paris in October had a very clever but simple arrangement for lowering the patient into its interior. It was, I understand, an ordinary coal-barge which had been roofed in, or rather decked over, and had its interior converted into two wards. The two ends were used as quarters for the personnel. The cost of the whole undertaking has up to date been exceedingly small.

PRISONERS.

I met recently a medical man who had been a prisoner in the hands of the Germans for over four months, and learned that the discipline to which he and his companions were subjected was very severe. Endeavours to remonstrate as to the conditions imposed upon them were dangerous, and failure to rise and salute any German officer who approached them spelt four days' solitary confinement and bread and water. The ordinary diet consisted of a slice of dry bread and some coffee in the morning; water and a piece of bread with some indifferent cheese in the evening, and at midday some thin soup, four ounces of pork, generally rather fat, and two potatoes or some sauerkraut. What struck my informant as particularly curious in a prison run by a scientific nation was that neither sugar nor salt formed part of the dietary. They were each allowed, however, to buy a quart of beer a day if they chose, and occasionally some chocolate. They were allowed to take exercise in the open air for two hours each day, but this period was nominal, since it included a parade lasting about half an hour. There were six such parades, or roll-calls, daily. The exercise ground was the centre of the fort serving as a prison. In the afternoon they could walk about some corridors for a certain period, and attend lectures in German, but were usually confined for about eighteen hours daily to their cell, where they were for the most part dependent on lamplight, for its window opened into a corridor; it was about the size of a four-bed ward, but had nine occupants. Each had a separate bed (straw mattress and bolster and one blanket), so the floor space was very crowded. They washed at a tap in one corner of the room, which was consequently always damp. They had their meals in their cell, the table being just big enough to hold plates for four and the vessel containing the food. The other five camped for their meals on their beds. After many weeks they were allowed to buy each one pillow, one sheet, and a second blanket; also a spirit lamp on which to warm their food, and occasionally some milk.

QUEEN MARY'S HOME FOR BRITISH OFFICERS (CONVALESCENTS), CIMIEZ.

It is a far cry from Flanders to the Alpes Maritimes, but one which sounds almost daily, for in the very centre of the Côte d'Azar there is a home for British officers convalescent from wounds or sickness, and recommendations for admission arise with frequency. The two buildings, the one old and the other new, stand within 100 ft. of each other in the private park at Cimiez, near Nice, which surrounds the house chosen as a spring residence for Queen Victoria in several successive years just before the close of her life. This fact in itself suggests and vouches for the attractiveness from many points of view of the general position of the home. In ordinary times it is a large hotel, but was offered to the Paris branch of the British Red Cross Society at the beginning of last winter, with a view to its conversion to its present use. Since the beginning of January it has been officially known as "Queen Mary's Convalescent Home for British Officers."

A good many such offers were received from various parts of the Riviera, but no decision to accept any of them was reached until an examination of each proferred home and its general environment had been made by a medical representative of the Society. A decision in favour of the Cimiez plan, if any, having been reached, the question was laid before Sir Arthur Sloggett in his joint capacity of Chief Commissioner of the Order of St. John of Jerusalem and of the British Red Cross Society and of Director-General of the British Medical Services in France. He at once decided to take up the scheme as an offshoot of the work of the two bodies mentioned and as a definite part of the army medical arrangements for British troops on the Continent. Despite its official status, however, the home presents a considerable degree of individuality, having—besides a committee of management, consisting of the D.G.M.S., the Commissioner of the Order of St. John of Jerusalem and British Red Cross Society (Sir Cortauld

Thomson), the A.D.M.S. southern lines of communication, and a representative of the conjoint societies—a president in the person of Sir John French, an official visitor (The Lady Michelham), and two honorary presidents, one being the British Ambassador and the other Monsieur André de Joly, Prefect of the Alpes Maritimes, who assisted the foundation of the home by obtaining for it various facilities likely to add to the comfort of its occupants.

The home itself resembles, in respect of appointments and comfort, a large first-class hotel; an excellent table is, for instance, maintained, and every officer has a separate bedroom, usually with a dressing and bath room attached. The administration closely resembles that of a military hospital; at the head of all things is a colonel of the Army Medical Service, who has a staff of four officers, the principal of whom, on the professional side, is a physician familiar by long experience with the climate of the South of France as also with the class of case represented by a large proportion of all the occupants of the home. There is also available an honorary staff of consultants in all the chief special departments of medicine, and a nursing staff consisting of a matron, three sisters, and a number of orderlies.

As for the atmosphere of the place, it is comparable to that of the officers' quarters of a large barrack in the after-morning-duty hours. A physical and mental military *tenue* is maintained, and though comparatively little "shop" is talked, every one remembers that he is merely off duty for a few days, so to speak, and that his chief aim meantime must be to recruit his strength for a further term of work at the front. At one time there would seem to have been an idea of allowing the adjoining building, formerly occupied by Queen Victoria, to be used by the wives and other women relatives of the officers in residence at the home, but this plan, which would have completely changed the atmosphere of the home and been gravely detrimental to its value as a military medical unit, was fortunately abandoned. This does not mean, however, that family claims have been set aside; on the contrary arrangements have been made by which various hotels in Nice itself receive the relatives of officers at very low terms, and the latter are at liberty to see as much of their friends as they please in the day time and to invite them to tea, etc., at the home. In the way of general occupations there are always a few officers who are more or less cripples for the time being, and others who have to spend a good deal of the day at rest, but the great majority of those admitted are able, after a day or two, to get about freely, going for strolls on the hills or down to Nice, or for expeditions in the motor touring cars with which the home is provided. It is, in fact, for those whose convalescence is likely to be rapidly completed in favourable circumstances that the home is mainly designed, and its value to the army lies in the circumstance that it helps dozens of officers, both senior and junior, quickly to regain complete health who might remain only semi-efficient for months but for an opportunity of spending a couple of weeks or so in a bright sunshiny atmosphere in a cheerful environment.

The home, indeed, may be regarded in a measure as a sort of officers' rest camp, the majority of the occupants coming from the hospitals at Boulogne and Rouen, and being signed up eventually for duty once more at the front. Some, it is true, who go before the medical boards are assigned permanently to light duty or are invalided out of the service; but these are fortunately very few. The bronchial troubles acquired through long weeks of exposure, the sequelae of influenza, which has been very common in some areas, and the late effects of frost-bite and general overstrain, etc., seem usually to vanish with rapidity at Queen Mary's Convalescent Home. Whether they would do so if the moral atmosphere of the place were different may be doubted. If it were less cheerful and soldierly, men in a condition of health such as that of most of the patients on their arrival might well remain semi-invalids for months, despite the climatic virtues of the Riviera. As things are, most of the officers admitted to the home, besides soon beginning to spend almost the whole day out of doors, rapidly reacquire a healthy interest in bridge at infinitesimal stakes, and spend the evening thus occupied when not beguiled towards the billiard-room or to the music-room by the sound of a rousing chorus or of a pattering breakstep. Thus it comes about that the population of the home is of a rapidly changing character. In ten days, a fortnight, in extreme cases a month, each convalescent in his turn metaphorically girds on his sword once more and is off again on active service. This it is that makes the home an asset of real value to the army, and this, too, it is that attaches an element of sadness to the whole undertaking. It is not to ordinary life that are returning those whom the home has successfully endeavoured to restore to full energy and health, but to one whose risks the daily casualty lists reveal only too clearly.

The bulk of the funds necessary are provided by the lady mentioned as holding the post of a lady visitor. Consequently the expenditure imposed on any officer who recruits his strength at the home is quite small. This is a very great advantage to the army at large, for, as every one knows, a very large proportion of all those who now hold commissions are men practically dependent on their pay.

It is expected that the home will remain open until about May 1st, and it may be hoped that after that date an equivalent institution may be available in France, for such places are undoubtedly of very great utility provided that the officer in command is possessed of the qualities necessary for their successful administration. In the present case, for instance, not only Cimiez but also Nice regards itself as the host of all English officers, and the commandant who is in disciplinary as well as medical charge of these must conceal an iron hand under a very thick velvet glove in the performance of his duties. It is not, it should be mentioned, only English officers who represent the allied armies on the French Riviera; most of the larger hotels at Nice, Cannes, and in other towns on the coast have been converted into hospital establishments, and, taken together, they must contain many thousand French patients. The majority of the latter would appear, however, to be either convalescent or cases which have reached a more or less chronic stage.

THE CANADIAN RED CROSS.

There are already four or five Canadian hospitals at work in France, and I hear that three more are expected to arrive within the next few weeks. They will sail, in short, so soon as the places at which they are to be located under canvas have definitely been decided. At present it is expected that two will be placed a little south of Boulogne and one a little north. They will be large establishments, each accommodating, I understand, 1,000 patients. One is being sent by the University of Laval, Quebec, another by McGill University, Montreal, and the third by the University of Toronto. They are coming out under the general auspices of the Canadian Red Cross, but each has its own equipment and maintenance fund, and will be otherwise directly representative of the university whose name it bears. The orderlies, for instance, will be drawn from its undergraduates, and its medical and surgical staff from medical graduates and members of the teaching staff of the university. There are already some 300 Canadian medical men on this side of the Atlantic, and one at least of their field ambulances has been at work for several months. The Canadian medical units do their work under the command of the A.D.M.S. of the area in which they happen to be serving, but also, according to a Canadian medical officer of my acquaintance here, a D.M.S. and A.D.M.S. of their own—that is to say, there is a D.M.S. of the Canadian contingent, and to him all Canadian medical units, whether Red Cross or military, are finally responsible. He in his turn is responsible to the D.G.M.S. of the British Forces in France, Sir Arthur Sloggett, and was recently gazetted to the rank of Surgeon-General in the British army. The occupant of this post is Surgeon-General Carlton Jones, who attended the International Medical Congress in London in 1913 as one of the representatives of Canada, and is thus well known to many of his colleagues in England. So, too, must be Colonel C. A. Hodgett, the chief of the Public Health Department of Toronto, who contributed a good deal to the success of the annual meeting of the British Medical Association in that city in 1906, and is now in Europe in charge of the affairs of the Canadian Red Cross Society (address 14, Cockspur Street). I hear that he has already established a hospital in Derbyshire, and that other projects include a convalescent home for officers in France. The necessary funds, I understand, have been guaranteed by

three Canadian ladies, but a site has yet to be chosen. The Society has also agreed, I hear, to take under its wing a hospital which started work in Paris at the beginning of the winter, catering solely, I understand, for French needs. It was established by a French-Canadian newspaper, and draws its support mainly from the readers thereof.

THE RUM RATION.

From statements made to me by French soldiers, both officers and rank and file, it would appear that the French authorities share the British view as to the value of adding a spirit ration to the dietary of men at the front. Its issue is permitted whenever the officer in charge of the unit concerned considers it desirable, the spirit usually given being what the French call Jamaica, which is ordinary West Indian rum. There appears to be some difference in practice in regard to the hour at which it is served out, but the usual plan would appear to be to use it as a lace for the early morning coffee. The quantity is about 50 grams, a little under 2 oz. On the other hand, the use of spirits in barracks or the billets of reserve troops is strictly forbidden, and efforts to lessen the consumption of alcohol by young men of military age are encouraged. A poster headed "Alcoholism *versus* the Army" is, for instance, often to be seen in barracks and military camps. Many of the statements are accentuated by the use of heavy type, the general text running much as follows:

Nearly all the conscripts dismissed from the service or whose enrolment is delayed are either alcoholics themselves or are the sons of such persons, for the children procreated by heavy drinkers tend greatly to be persons of feeble mental and bodily development.

Alcoholism predisposes its victims to tuberculosis and is one of the indirect causes of venereal disease. It also diminishes vital resistance; it increases the gravity of wounds and retards their cure. It is not alone the physical health of a soldier that alcohol attacks. It attacks also his moral health, destroying his sense of discipline, dulling his intelligence, and awakening his bad instincts. As many, for instance, as 141 out of 297 soldiers found guilty of various offences at courts-martial at Lyons and Rennes were alcoholics, while in Morocco in 1913 all the prisoners condemned at courts-martial in the first week of May were found to have committed their offences under the influence of absinthe. Many a man becomes an alcoholic without ever having got actually drunk—merely by daily indulging himself with an apéritif or petit verre, or even by taking an unstinted amount of wine. In barracks alcohol is forbidden, and it is outside that the danger lies. It is, in short, the cabaret that is the true enemy of the soldier. It is there that he empties his purse and loses his health. Alcoholism is ruining France, lessening its population, and disarming it before other nations. Let all soldiers give up taking apéritifs, petits verres, liqueurs. More especially let every soldier set his face against the drinking of absinthe, the most dangerous of all poisons. Let them band themselves together against a plague which annually kills thousands of Frenchmen. Every man who desires to prove himself a good soldier should keep himself sober and abstain from alcohol.

This manifesto made its first appearance a year or two ago, but was republished quite recently, despite the fact that it has lost some of its point owing to the sale of absinthe having been declared illegal. It holds good, however, against the other forms of alcohol specifically denounced—namely, the innumerable sugary tinctures of gentian, cinchona, and the like, which are known as apéritifs, the tiny glasses of cheap cognac known as a petit verre, and ordinary liqueurs. Use of the two latter is limited more or less to the working and wealthy classes respectively, but an immense proportion of all Frenchmen habitually take one or more apéritifs during the hour spent at the café before dinner, if not also before luncheon. The manifesto emanates from the French Antialcohol League, a body which, if it is to be regarded as the analogue of teetotal campaigns in Great Britain, is much more temperate in its views. What its official programme may be I do not know, but inquiry among members of it suggests that they see no objection to the ordinary dietetic use of wine and beer, and set their faces solely against spirit drinking. A wine allowance, it is to be noted, is included in the French soldier's daily ration, whether in barracks, in hospital, or on the field; the usual amount, I believe, is one bottle for every four men.

LOCALIZATION OF FOREIGN BODIES.

A discussion on the practical value of *x*-ray localization was held recently at the Boulogne Hospital Base, those attending it being the guests of the medical officers of the Meerut Hospital, by whom the discussion had been organized. The proceedings were opened by the commanding officer of the hospital (Lieutenant-Colonel Wall), who, after welcoming the various representatives of the Boulogne hospitals, suggested that as many of those present were not conversant with the technical side of *x*-ray work, the opener of the discussion should give some description of the general principles underlying any methods likely to be mentioned in considering the value of *x*-ray localization in military surgery.

The discussion was then opened by the radiographer of the Meerut Hospital (Captain D. B. McGrigor, R.A.M.C.), who, after allusion to the many methods recently described or mentioned in the BRITISH MEDICAL JOURNAL, said that, excellent as were most of them in theory, only a few were really suited to the circumstances of work at hospitals near the front. Practically speaking, there were five methods which might be used, but they were by no means all equally useful. Two of them depended on photography, and three were screen methods. In the first group he included (1) Mackenzie Davidson's original thread method, which was much the most accurate of all methods but absorbed a good deal of time; (2) the stereoscopic method, which was admirable in many respects but not generally really useful, since to obtain much assistance from it the surgeon concerned must have acquired stereoscopic vision—a somewhat rare possession. As for screening methods, their attraction was rather superficial; apparently they were very rapid, but this was rarely so in reality, since the results obtained tended to be inaccurate. The true value of screening lay in the speed with which the presence or absence of a foreign body could be determined; but to go further and determine its exact position was a very different matter. Of available screening methods, the two diameter methods was likely first to suggest itself to most radiographers, and good results might be obtained provided the patient were placed on the operating table in exactly the position in which the screen had been applied, and that there was no subsequent movement. The method of Shenton was also of value, for it was easy to use, but it necessitated the assistance of mechanical attachments, which were not always available. In field equipments the amount of apparatus must necessarily be kept down as low as possible. This was one reason why the Mackenzie Davidson method was so useful; that all the appliances required could be reduced to a very small compass was evident from the sample shown.

Finally, there was the method of estimating the position of the foreign body by mathematical formulae based on the theory of similar triangles. When all was said and done these formulae all came to the same thing. A × S divided by T + S gave the distance from the screen to the foreign body, A being the distance from the anticathode to the screen, T the movement of the tube, S the movement of the shadow. Unfortunately, the real utility of no one of these methods was precisely equivalent to its theoretical value, for a knowledge of the depth of a foreign substance from the surface of the body did not necessarily disclose its anatomical position; the thickness of the tissues varied greatly in different subjects; and even if a mark placed on the skin as a kind of buoy remained untouched, the surgeon could not always approach the foreign body in a direct straight line as he should if he were to make certain of not missing it. Various attempts had been made to overcome these and other drawbacks by mechanical contrivances such as a combined operating *x*-ray table, the graduated director of Ironside Bruce, and the telephonic probe, but all these were better suited to the environment of home hospitals than to that of those in the field. Furthermore, though failures certainly occurred, cases in which the methods preferred afforded valuable information to the surgeon and acted as a complete guide to him were very much more common. Among the failures, some were due to the surgeon displacing the foreign body during his manœuvres, and of this fact the speaker quoted some examples; it was also not unknown for a radiographer to get his plates mixed. The speaker then mentioned some cases which well illustrated the modern tendency to depend too much on physical means of diagnosis; bullets for which careful radiographic search had been made had finally been detected immediately under the skin either at the neighbourhood of the wound or on the opposite side of the body, but in either case in a position in which they could

readily have been detected in the first instance had a careful palpation been practised.

Captain McGrigor then gave a demonstration (1) of a series of slides illustrating the various points to which allusion had been made in the paper; (2) of some simple apparatus for utilizing the Mackenzie Davidson and stereoscopic methods; and (3) of means by which all mathematical formulae might be avoided when shadow triangulation was used. It consisted in using ordinary French 0.25 cent. square ruled paper, and drawing the triangles thereon.

In the discussion which followed, the views expressed varied considerably. Captain Kennedy (Lahore General Hospital) said that the method that he preferred his radiographer to use was that of taking two pictures at right angles, but he did not seem to regard any existing method of *x*-ray localization as of really great value to surgeons, and strongly deprecated revealing to a patient anything that an *x*-ray picture might disclose.

Captain R. Higham Cooper (Rawal Pindi Hospital) was strongly opposed to screen methods; they all involved an element of danger to the radiographer himself, and were apt to be misleading when fractures were in question. In a case of suspected fracture from the impact of a bullet a diagnosis in the negative should never be made on the strength of a screen examination. The Mackenzie Davidson method was the only absolutely accurate process at present available, and the same plates could be used for producing stereoscopes. The objections that had been raised to *x*-ray localization on the ground of the disappearance of skin marks were perfectly sound so far as they went, but it was to be remembered that skin marking need not be employed at all. The measurements and markings could, and should, be made on a plate of sterilizable copper, and this used as a guide during the performance of the subsequent operation.

The two-plane method did not deserve its popularity, since surgeons so often forgot that any alteration in the position of the limb would materially alter the apparent position of the foreign body. Apart from the principal objection to the stereoscopic method—namely, that stereoscopic vision was difficult of acquirement—it was to be remembered that the density of lead always introduced a facultative source of error, the bullet appearing nearer the surface than it really was.

Captain Herschel Harris (Australian Hospital) agreed that the Mackenzie Davidson method was very exact, but had as yet seen no apparatus for applying it which he regarded as really suitable to field work. In the majority of cases the method that he had described in the BRITISH MEDICAL JOURNAL[1] provided all the information necessary for approximate localization.

Lieutenant Stone (Duchess of Westminster's Hospital) agreed that, in the case of bullets, precise localization was unnecessary. He had often seen operations performed under the screen, and had been struck by the extent to which the bullet moved about during the procedure.

Captain Oldham (No. 14 General Hospital) thought there was room for screen work. Its rapidity was an advantage, and, provided that there was no question of any bone lesion, its use was legitimate. For triangulation work he used a formula which was exceedingly simple, owing to all factors, except the distance of the two shadows, being constants.

Captain Curtis-Webb (No. 7 Stationary Hospital) thought there was some tendency to over-estimate the time-absorbing quality of the Mackenzie Davidson method. The time required might be described as ranging inversely with the familiarity of the operator with this method. He was not enamoured of wo diameter work, but many surgeons seemed to like it. The difficulties in regard to skin marking might be avoided by using silver nitrate to make the mark and dipping into it a little photographic developer. The resulting indelible black mark would become an indelible white when the surgeon applied iodine to the general surface previous to operating. The method of detecting foreign bodies in the eyeball described by Captain Harris seemed to him to have the disadvantage that it could only be effective when the foreign body was free in the hyaline fluid or aqueous humour. As a rule foreign bodies in the eye were entangled either in its muscles or its coats.

[1] BRITISH MEDICAL JOURNAL, January 16th, 1915, p. 113.

Captain Helby (No. 13 General Hospital) preferred to be supplied with stereoscopic plates, for he was fortunate enough to have acquired stereoscopic vision, and was thus an example of the individual described by the opener of the discussion as the "stereoscopic surgeon." He distrusted the two-plane method. Bullets never moved, except backwards or forwards along their track.

Lieutenant McKelsey (No. 13 Stationary Hospital) was at one with those who considered very precise localization superfluous. For eye work the Mackenzie Davidson was the only legitimate method, but in dealing with foreign bodies elsewhere in the body he preferred either the stereoscopic or the two-plane method.

Dr. Lake Hope (No. 4 B.R.C.S. Hospital) considered that it was inaccurate to speak of any "best method," though doubtless there was an optimum method for every individual wound. For screen work he used an attachment which calculated the depth of the foreign body mechanically by two sliding rules.

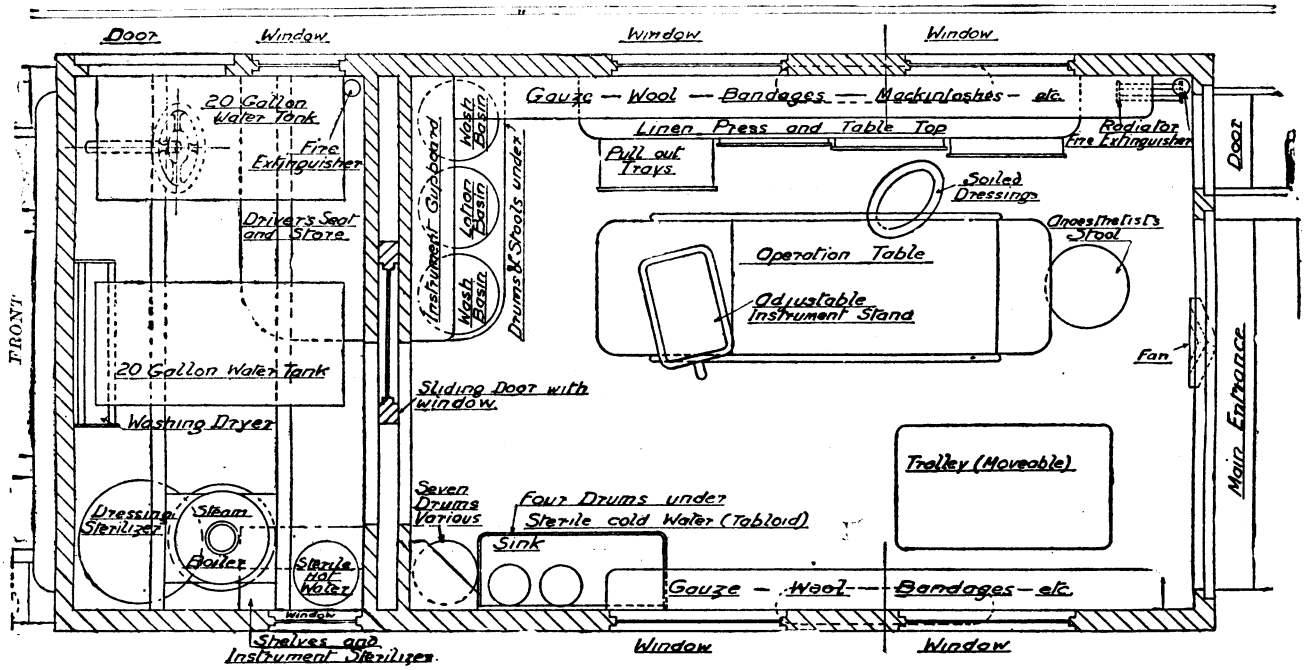
Lieutenant Colonel Sargent (Consulting Surgeon to the Forces) held that it was only in the case of a bullet lodged in the brain that a surgeon was liable to falsify a radiographer's estimate of its position by pushing it with his finger. Apparent movement in positions such as the arm or leg was common enough, but what really moved was the muscle in which the bullet was embedded, not the bullet itself. When making stereoscope plates radiographers should invariably mark the position of the wound on the plate. The ideal would be for radiographers to devise a method by which they could state the distance of a foreign body from an osseous point instead of from the skin surface. Surgeons should always see the plates taken of a case and hold a consultation with the radiographer as to their interpretation.

A MOTOR OPERATING THEATRE.

MR. G. H. COLT, F.R.C.S., Assistant Surgeon, Aberdeen Royal Infirmary, has made another design for a mobile operating theatre, in which only one table is provided; in the design published in the JOURNAL of January 16th two tables were provided. The general appearance of the new model may be gathered from the photograph then reproduced (p. 131). The coach consists of two parts, a body 9 ft. 6 in. long and 6 ft. 6 in. wide, with a cab in front 3 ft. 6 in. long and 6 ft. 6 in. wide. The height of both over all is 7 ft.; the chassis is of the commercial vehicle type, weighing 2½ tons, 20-30 h.p., with a wheelbase of 11 ft. 6 in. The weight carried, including five persons, is about 2⅞ tons, and is suitably arranged as regards steering facilities. The personnel will consist of a surgeon, an assistant surgeon, an anaesthetist, a nurse, and a chauffeur.

The arrangement of the interior of the operating theatre and cab are shown in the accompanying drawing.

All boiling and sterilizing and drying are done in the cab (or partly outside the theatre) by paraffin burners. The cab is separated by a sliding door from the body of the theatre, thus eliminating phosgene gas—an important point as regards the efficiency of the personnel. Cold sterile water is obtained in the body of the theatre either by tabloid hypochlorite in fifteen minutes, or by filling the four vessels from the boiler. There is storage room of 34 cubic feet for, say, 60 towels, 15 gowns, wool, gauze, bandages, and instruments. In addition 16 full-sized drums, shelves, two drum-stools containing plaster-of-Paris, and a trolley are provided. The space available under the operation table, if required, is 7 cubic ft. Two 20-gallon water tanks are carried. The electric light can be run for six hours off accumulators. A minimum time of fifteen minutes is available for recharging off the engine between operations if required. Ventilation is by windows and electric fan causing an indraught of filtered air. Special safeguards against dust are provided. The windows have closely fitting flanges. The tailboard, which lets down to admit patients, is arranged so that its outer surface, when shut, is outside, and dirt is not tipped into the theatre when closing it up. The back of the car is covered by a sheet of American cloth during travelling. After arrival, any dust which may have got in is removed by swabbing the interior with dilute antiseptic solution of glycerine. For stretcher way a clear space of at least 2 ft. 9 in. is available, and more can be obtained if required.



Plan of proposed Motor Operation Theatre. The bonnet, as well as the tailboard and steps in the rear, have not been reproduced in the above plan. (Scale, 1 inch to about 2.3 feet.)

The car is designed to be lighted by electricity; for heating and sterilizing it is proposed to use pressure paraffin burners. As washing, drying, and sterilizing are provided for in its outfit the theatre can be kept in continuous use provided supplies arrive regularly.

It is designed to serve casualty clearing stations and to deal with cases of grave abdominal injury, head cases, and severe wounds, including those involving immediate amputation. It is not intended to be used for cases that can be removed further without serious risk of producing complications, shock, or severe pain. The theatre will take the surgeon and anaesthetist to the place where they are wanted, and provide them with all they require.

The operating table and other fittings can be folded so as to provide space for reclining chairs or for slinging hammocks in which some members of the personnel could sleep, if necessary. The estimated cost of the chassis is £600, of the body £200, of the electrical installation £70, and of the surgical equipment £200 or £230. Mr. Colt has recently demonstrated a model of this type of mobile operating threatre in London. It has been on view since Easter Monday at the offices of *Cooper's Vehicle Journal*, 104, Long Acre, W.C. It has been examined by various experts, and it is possible that they may be able to suggest certain further improvements, but as it stands it is a model of ingenuity and compactness.

AUSTRIAN EXPERIENCES.

IT is a little difficult to glean accurate information about the war from the Austrian medical press, for the censor has been indefatigable in deleting, not only records of facts, but also expressions of opinion. News which has escaped the censor's ban is, as a rule, interesting rather than instructive; and when *Der Militärarzt* for January 9th is permitted to refer to "the brilliant part played by the Austrian-Hungarian armies," the reader is interested, but he does not feel he is the recipient of important information. The somewhat elliptical style of this journal and of its parent journal, the *Wiener medizinische Wochenschrift*, may be baffling to the censor, but it is also embarrassing to the general reader.

The Medical Service of the Austrian Army.

Although the medical organization of the Austrian army is spoken of by its apologists in general laudatory terms, the detailed discussion of its various branches shows that there have been many and great disappointments. The Austrian surgeons complain of the want of a distinction, such as the German iron cross, which is given for merit, irrespective of the recipient's rank. The *Wiener medizinische Wochenschrift* for January 2nd points out that this honour has been conferred on more than a thousand German medical men, and that the German nation is boundlessly grateful to its medical men for what they have done. In Austria, however, there seems to be a general impression among the public that the nation's most distinguished surgeons have not borne their share of the burdens of the war. The *Wiener medizinische Wochenschrift* refutes this accusation indignantly, and points out that as distinguished Austrian surgeons gave their services to the various belligerents in the recent Balkan wars, it is absurd to accuse them of staying at home when their own country is at war. It is even argued that the Austrian and Hungarian medical men have done almost more than their German colleagues, for, owing to the lack of regular army surgeons in Austria, the medical profession as a whole has been called on for service in the army more extensively than in Germany. It is admitted, however, that there has been a lamentable dearth of skilled surgeons, and it is urged that after the war the medical service of the Austrian army should be radically reorganized. It appears that even in time of peace the medical service of the army has been understaffed, and at the present time the public is loudly complaining of the neglected state of the wounded. Even if every surgeon in the monarchy were to join the army, it would be impossible to guarantee immediate and adequate surgical treatment for all the wounded.

The Needs of the Civil Population.

Among the general public the need for medical attendance is even greater than in the army. Large districts are totally bereft of medical aid, and in other districts the few remaining medical men are seriously overworked. Were serious epidemics to break out in the civil population the available medical aid would be totally inadequate. Hitherto serious epidemics appear to have been confined to the army and the districts in which fighting has taken place. From the districts occupied by the Russians there has been an exodus of Austro-Hungarian medical men who, in many cases, are practically destitute.

Travelling Laboratories.

While other medical institutions come in for scathing criticism the Red Cross receives unbounded praise. Under its auspices hundreds of hospitals have been organized, hundreds of surgeons have been provided, and an enormous supply of instruments and dressings collected. The popularity of the Red Cross, even in the remotest villages, is exceedingly great, and the public gladly contributes to its funds. The travelling laboratories have also proved a great success. There are thirteen large travelling laboratories, each with a staff of two or three experts in bacteriology and hygiene, and ten nurses supplied by the Red Cross. There are also several travelling laboratories of a smaller type. These laboratories and the Red Cross ambulance have done much to prevent or limit the outbreak of epidemics, and to ease the lot of the wounded

soldier, but it is admitted that the wounded are often sent home in a disgraceful condition owing to lack of suitable attendance on the way. It is also stated that the quarantine system is improperly administered, and that cases of typhoid fever, dysentery, and cholera are sent home together with the wounded.

Cholera.

In the *Wiener medizinische Wochenschrift* for January 30th an account is given by Dr. Emil Epstein of his experiences of cholera, several hundred cases of which he has investigated. In about 300 the bacteriological examination was positive, in 550 it was negative. With few exceptions all these cases came from the scenes of fighting in Galicia and Northern Hungary. Among the cases with a positive bacteriological report were 60 "carriers" without any clinical sign of the disease. In about two-thirds of all the cases the symptoms were slight, but in the remaining third they were severe, and death occurred in 50 cases. Although the calculated case mortality was only 20 per cent., this is probably misleading, as Dr. Epstein's observations were made at a base hospital a considerable distance from the scene of the outbreak. It is probable that many of the most severe cases terminated fatally in a few days, whereas the slighter cases were drafted to the hospitals in the interior. When a sufficient observation period was possible, the clinical diagnosis usually tallied with the bacteriological examination, and this was positive in 48 of the 50 cases in which a necropsy was made. In one case neither the bacteriological examination nor the necropsy supported the clinical diagnosis of cholera, and in another case, though the bacteriological examination was negative, the necropsy confirmed the diagnosis of cholera.

With regard to the comparative value of the clinical and bacteriological diagnosis of cholera, Dr. Epstein observed in wards containing 80 patients that in 12 cases improvement in the general condition coincided with the disappearance of the vibrio from the faeces. In about two-thirds of the total the bacteriological examination was still positive for two to fourteen days after the patients had recovered clinically. In about 20 cases the vibrio disappeared from the faeces two to nine days before the clinical symptoms, including diarrhoea, ceased. In a few cases, in which there was no clinical evidence of active disease, the bacteriological examination of the faeces was alternately positive and negative for a considerable time. These observations naturally rendered the task of sifting infectious from non-infectious convalescents exceedingly tedious; and it is highly probable that some of the clinically cured subjects of cholera returned to the front as "carriers."

In a discussion on Dr. Epstein's remarks, several physicians with recent experience of cholera in Austria have expressed their views on the treatment of this disease. Much, evidently, depends on careful nursing, and this alone may often avert the *statum algidum*. The intravenous injection of saline solution and cardiac tonics, particularly strophanthin, are warmly recommended; the latter may be effective, it is said, even in those apparently moribund. Subcutaneous infusion of hypertonic saline solution, combined with adrenalin, was found particularly effective when supplemented by a salt-free diet. Hot mustard baths, acting by virtue of their stimulating effect on the vascular system, were also found beneficial. Most important of all is the application of these various methods at the most critical time; and for this reason the patient's pulse should be almost continuously watched.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Wounded.

Lieutenant (temporary) E. Stratford, R.A.M.C.
Lieutenant (temporary) A. N. Smith, R.A.M.C.

LOST IN SS. *Falaba.*

The Elder Dempster liner *Falaba* was torpedoed by a German submarine in the Irish Sea on the morning of Sunday, March 28th, the day after leaving Liverpool for West Africa, with great loss of life, no time being allowed to take to the boats. The number reported as missing—passengers and crew—amounted to 112; while about 140 were saved, and 7 died after being rescued, including Captain F. J. Davis, the Commander. Among the missing were two medical men, Drs. F. J. A. Baldwin and A. W. H. Grant.

Dr. Francis John Augustus Baldwin was educated at London Hospital, took the diplomas of L.S.A. in 1891, of L.R.C.P.Lond. and M.R.C.S. in 1896, and the diploma of the London School of Tropical Medicine in 1903. He was a member of the West African Medical Staff, stationed in the province of South Nigeria. He was the second son of the late William Bennett Baldwin, of Ardmanagh House, Schull, county Cork.

Dr. Alexander William Harvey Grant was also a member of the West African Medical Staff, and was formerly stationed at Ogoja, in the east province of South Nigeria. He was educated at Charing Cross, and took the diploma of L.S.A. in 1901. He served as a civil surgeon in the South African war, and held the medal with three clasps; he had been assistant medical officer of the Brecon and Radnor Asylum at Talgarth, and of the Three Counties Asylum at Hitchin.

NOTES.

SERBIA.

THE Scottish Women's Suffrage Society, which has for the present set aside political activities, has in Great Britain taken the lead in giving hospital assistance to Serbia. The prevalence of typhus, typhoid and relapsing fevers, and small-pox is stated to be traceable to the hospitals and camps left by the Austrians when they retreated. In one village alone they left 3,000 sick and wounded with only 12 Serbian nurses to look after them. The hospital sent out by the Scottish women in the middle of January has trebled its nursing staff and equipment, and is now able to receive 300 cases. As already noted, Sir Alexander Ogston of Aberdeen started for Belgrade last week, accompanied by his daughter, Mrs. Carter, and a hospital unit numbering 18. The society hopes to send out another unit to Serbia, and is appealing altogether for £50,000 in cash, and gifts of night-shirts, pyjamas, socks, and bandages, for there is also a Scottish women's unit working in the region of Soissons; it at present has accommodation for 150 patients, and has been highly praised by the French military authorities.

The American Red Cross Society and the Rockefeller Foundation has sent a commission to Serbia to help in checking the prevalence of typhus fever and cholera; £10,000 has been collected to defray the expenses of the commission. Dr. Richard P. Strong, professor of tropical diseases at Harvard Medical School, is the administrative head; Dr. Thomas W. Jackson, of Philadelphia, the chief sanitary inspector, and Dr. Hans Zinsser, professor of bacteriology in Columbia University, the bacteriologist of the commission. Dr. Nicolle, a well-known French authority on typhus fever, has been invited to co-operate.

Professor Dr. Reiss of Lausanne University, who was invited by the Serbian Government to investigate allegations of atrocities committed by Austro-Hungarian troops in Serbia, gave an account of his experiences at the Royal Society of Medicine on March 31st. Dr. Frederick Taylor presided, and the Serbian Minister in London, M. Boschkovitch, was present. Dr. Reiss declared that he had found ample evidence of brutalities committed by Austro-Hungarian troops, and many of them were of such a character that it was impossible to doubt that they had official sanction. Lantern slides made from actual photographs were exhibited showing explosive and expanding bullets found on the field of battle, and photographs of wounds which Dr. Reiss said could only have been caused by such missiles. Many photographs were exhibited of mutilated bodies of civilians, and examples shown of the bombardment of buildings of no strategic importance, including the University and National Museum at Belgrade.

A fund is being raised at Tain to commemorate the memory of Dr. Elizabeth Ross of Tain, who died of typhus while attending the hospital at Kragujevatz, Serbia by establishing a bed in the hospital there. Messrs. Wallace and Fraser, Tain, will receive and acknowledge donations, large and small.

MEDICAL OFFICERS WANTED.

2/1st Highland Field Ambulance.

Four medical officers are required to complete the establishment of this unit at the war station. Applications to the Officer Commanding, Rye Close, Bedford.