Table III.—*Yearly Maxima of Malta Fever (Percentages).*

	Central Battery Ships.	Turret Ships.	Secondary Battery Ships.
1882	Monarch ... ... 30 Superb 20		
1883		Inflexible ... 6	
1884	Superb ... ... 20 Alexandra ... 12		
1885	Alexandra ... 12 Téméraire ... 10		
1886	Alexandra ... 10		
1887	Alexandra ... 10	Dreadnought ... 2½	
1888	[Alexandra ... 4½]		
1889		Dreadnought ... 3	
1890		Agamemnon ... 10	
1891		Dreadnought ... 20	Trafalgar 15
1892		Dreadnought ... 7	
1893			Nile 6
1894			Anson ... ... 15 Hood 8
1895			Collingwood ... 9½ Hood 8
1896			Howe ... ... 7½ Hood 6
1897			Hood ... ... 11 Camperdown ... 9
1898			Hood 5
1899	*No longer reported in Blue Book.*		

In order to secure that your ship shall be healthy she must:—

1. Have certainly not less than 120 cubic feet of space for each man and more in the tropics.

2. Have uptake ventilators from every compartment, opening as near the top as possible. These should be so constructed as to be capable of being cleaned by a brush pulled through.

3. Cowls and air-shafts are needed to be supplemented in all favourable weather by a windsail for each hatchway and wind scoops for each port or scuttle in the side. Artificial ventilation is required for every space in which men live (only to be used on the main deck in bad weather).

4. She should be warmed and kept dry by steam radiators. In 1888, the *Alexandra* having been fitted with electric light and being now kept drier by the heat radiated from the boiler always alight, had less than half as many cases of Malta fever as she had had in each of the four preceding years.

5. Whenever decks are washed, the last washing over should be done with a 1 in 1,000 solution of perchloride of mercury or other antiseptic. The mess tables and stools are similarly washed. This reduces the liability of casual wounds to inflame. I would like also to spray the beams overhead with formalin solution once a week in order to diminish the occurrence of sore throats and other septic diseases. But I quite believe the best general antiseptic on board a ship to be fresh dry air in plenty.

6. There should be a drying room for the wet clothes and bedding of the ship's company.

Fleet Surgeon Kirker said that owing to the conditions which existed on board men-of-war it was impossible to give men the desirable amount of air space or air supply. It was therefore necessary that most careful attention should be paid to sanitary matters on board, for a small amount of preventive work was worth to the service more than much curative. It was found in the days of wooden ships that those with small complements were more healthy than those with large, and it would probably always be so. There were several sanitary improvements which one would like to see in the navy, and the most liberal supply of fresh air possible was the most important of them.

Donation to the Royal Free Hospital.—The Committee of Management of this hospital has received a donation of £100 from Mr. Peregrine Purvis.

Wallingford Cottage Hospital.—A sum of £1,010 has been subscribed for the purpose of endowing a bed as a memorial in the Wallingford Cottage Hospital to the late Mrs. Helen Mary Wells who took an untiring interest in the above from its foundation in 1878 to the time of her death in September last.

SOME REMARKS, BY WAY OF CONTRAST, ON WAR SURGERY, OLD AND NEW.

By Sir William MacCormac, Bart., K.C.B., K.C.V.O., M.A., M.Ch., LL.D., D.Sc.

On October 1st, 1856, Mr. M'Whinnie, assistant surgeon to St. Bartholomew's Hospital, delivered the introductory address at that Institution. In the course of it he referred to the Crimean War, and many of his remarks are applicable now. He said that, "although the military surgeon enjoys certain advantages which the events of the late war promise to render greater, we must not conceal the fact that military surgeons have not yet attained the position to which their varied acquirements, skill and devotion, fairly entitles them." Speaking of the return of the victorious regiments and the enthusiasm which accompanied their triumphal entry he called to mind the glorious part our own professional brethren had taken in the struggle, and that the surgeons had, as in preceding wars, distinguished themselves by their skill, devotion, bravery, and humanity. He quoted Colonel Ambert, a French colonel of dragoons, who had used in October, 1854, generous and eloquent words in describing the qualities of the medical officer. "In the hour after the battle he will be chief among the multitude, during the fight calm, when all around is agitated and disturbed. In an atmosphere of grape shot and smoke he must deny himself all emotion. The shrieks of the wounded, the booming of cannon, and the crash of shells, do not disturb him—all ranks appeal to him for help, and he gives it alike to the poor soldier or to the mighty general, to the fallen amongst the enemy, and the wounded of his own army."

"After the battle the General and his soldiers hear the shouts of triumph, but the surgeon has to listen to the groans of the sufferer; night comes on and all are asleep save him, awake amongst the wounded, and next day, exhausted with fatigue, he sets out again with his ambulance, giving hope to all, improvising a thousand methods, and supplying material means of aid by the power of his intelligence and skill, Honour then to him: his mission is a thousand times sacred."

"Fellow citizens, you who were so moved at the heart-rending sufferings of your soldiers in the East, the military surgeon has saved your sons, though he may himself have died at his post, and the heroism of science has equalled, if it has not surpassed, the bravery of the field of battle."

Mr. M'Whinnie pointed out that "from evidence given before Parliamentary committees, and other undeniable testimony, it was clearly shown that the blame attached to the medical department at the beginning of the Crimean campaign was undeserved, and had the hygienic measures suggested by its members been carried out the losses and sufferings of the army would not have been greater than those which attend the ordinary casualties of war, and that when the injunctions of our military brethren were attended to the health of our troops soon became most satisfactory."

Dr. Balfour—then of the Royal Military Asylum, Chelsea, whose authority is entitled to the greatest attention and respect—writes that "so far as I can learn from competent judges there has been an amount of good surgery, which surpassed the anticipations of even the best friends of the department, and I believe we are far ahead of the French army in that respect."

The wars which compare with that in South Africa in regard to length of the struggle, numbers of wounded, and strain upon the Army Medical Department are the Peninsular and Crimean wars, the American war of the Rebellion, and the Franco-German war.

Many lesser campaigns have intervened, such as the Egyptian and the Indian wars, and the struggle between China and Japan, but these are not epoch-making like the other great wars, and do not constitute milestones along the march of military medical progress. In considering this question, we must also remember there is much concerned beside the mere treatment of wounds. There is the organisation of the Medical Corps, the improvement in the means of transport of sick and wounded, the formation of hospitals, and the commissariat supply.

We scarcely remember it now, but chloroform was first

tested on a large scale in the field during the Crimean campaign, and its success was complete. Macleod says there was but one death which can fairly be said to have arisen from it. Baudens tells us that chloroform was administered some 25,000 times in the French army, and that no fatal case had occurred.

It was found even more precious in the field than in civil practice by relieving shock and permitting many primary amputations which could not otherwise be performed. Fewer assistants are required when it is employed, which materially adds to its value. Mr. Blenkins, of the Guards, remarks that without the aid of chloroform many severe operations could not have been undertaken or performed at all.

The next great war was that of the American Rebellion, and the records of its results are to be found in the monumental volumes issued from the Surgeon-General's office.

In the Austro-German war of 1866 antiseptic surgery had not been introduced, nor was it employed during the Franco-German war of 1870-71, except to a quite limited extent upon the German side.

The mortality after operation was then very great indeed on both sides, and especially in the French army. All kinds of infective diseases prevailed—septicæmia, pyæmia, and tetanus were common, most indeed of the operation cases died pyæmic, suppuration was universal, gangrene and secondary hæmorrhage were frequent. Wounds of large joints entailed fatal results, abdominal wounds were scarcely ever recovered from, and one-half or more of the cases of chest injuries died. Fractures of long bones were always very serious, especially those of femur; amputations were frequent, and attended by a large mortality; while excisions of joints, in the lower limb at all events, were most unsatisfactory, if performed as primary operations. A very large proportion of those who died on the field of battle, if not killed immediately, perished from hæmorrhage. Operations, however, were almost invariably performed with the assistance of chloroform, and an infinite amount of suffering was thus saved.

The large bullets of former campaigns, weighing often twice as much as those now in use, inflicted most extensive damage both on the soft parts and the bones, the comparative magnitude of the injury and the imperfect means of guarding against sepsis offer a sufficient explanation of the high rate of mortality.

In the war between Russia and Turkey a systematic attempt was first made by Professors Bergmann and Reyher to treat gunshot wounds of the knee antiseptically with very great and, at the time, astonishing success. In the campaign in Egypt in 1882 antiseptic methods were so effectively carried out that there was not throughout a single case of erysipelas, pyæmia, or septicæmia, or of any infective preventable disease.

I do not mean in this brief communication to enter into minute details or to give you many statistics—indeed, from South Africa there are as yet no complete ones available. I would only seek to indicate in a general way some of the improved conditions of modern warfare as exemplified in South Africa.

The use of chloroform was universal, and that not less blessed agent in relieving pain, morphine; in this way the detrimental influence of shock was much lessened. But shock is less severe in the case of the modern bullet than previously was the case, due no doubt to the different character of the wound.

The limited amount of local damage produced in most instances by the comparatively small and very swift Lee-Metford or Mauser bullet has impressed all observers. The normal external wound is circular, and quite small, like the end of an ordinary pencil, and it soon became sealed with a black scab of dried blood. The exit wound is often quite similar, or like a small slit, and closes in the same way. The soft parts and bone are damaged as a rule in a limited degree, and recovery generally took place rapidly and without complication.

The bullet seems to be itself aseptic; clothing is very seldom carried in with it; the bullet track behaves more like an incised wound than a contused one; the rapid manner in which the small external wounds seal up reduces the injury to the subcutaneous form, and the frequency of recovery is proportionately great.

The manner in which the bullet may traverse the abdomen, thorax, cranium, the great joints, and important viscera, not only without entailing a fatal result, but often producing only a minimum of constitutional or other disturbance, must be witnessed to be realised.

I was much impressed with the small number of cases of primary fatal hæmorrhage and the large number of traumatic aneurysms. The large vessels, even including the innominate artery, may be wounded by a bullet without causing fatal bleeding, and often with a surprisingly small amount of hæmorrhage either external or internal—a totally new experience.

In the Crimea and in the Franco-German war the estimated proportion of deaths from primary hæmorrhage on the field of battle was about 20 per cent., and it was thought beforehand that the small hardened bullet would probably greatly increase the number, but this is not true, and in South Africa and in the Cuban war death from this cause was found to be comparative rare. The same comparative infrequency may be stated in respect of secondary hæmorrhage.

Wounds of the blood vessels are generally followed by aneurysmal swellings sometimes arterial, more frequently arterio-venous. The treatment of these cases is difficult, and many I am convinced should if possible be left alone. Unless immediate interference is indicated by some urgency such as fresh hæmorrhage, pressure symptoms, or impending gangrene the longer the interval permitted before operation the better the prospect of ultimate success, besides, some cases get well spontaneously. In those operated upon the ligation of the vessels at the seat of injury remains for most cases the classic and safest treatment, but it is often attended by the greatest difficulties and often followed by gangrene.

The treatment of the larger proportion of Mauser wounds is generally of the expectant kind, and of none may this be more correctly stated than of wounds involving the abdominal cavity.

Many surgeons went to South Africa anticipating a large field of surgical enterprise in this direction, but I feel sure the surgical records of the campaign, when published, will prove the advantages of non-interference in the greater number of instances, and this has also been the experience of the American surgeons in the war with Spain where the weapons used were precisely similar. There all the abdominal cases but one operated on died, while many treated expectantly recovered, but the general mortality was as high as 70 per cent. of the total, while in the Civil War the mortality reached 87 per cent. The liver, kidneys, and spleen may be perforated and yet recovery ensue. The large intestine, and, I believe, the small intestine also, must have been frequently perforated without fatal consequences. The small perforation caused by the Mauser bullet and the frequently empty condition of the bowel are the principal factors to account for a non-fatal issue.

In every region of the body the percentage of cases terminating fatally is diminished. Formerly a gunshot fracture of the femur formed a serious menace to life, and determined not infrequently an immediate amputation. In the Civil War, of 6,576 fractures of the femur nearly 3,000 (2,923) were treated by primary amputation, and the mortality following the injury amounted to 50 per cent.

In the Spanish-American war, of 82 cases of gunshot of femur 6 only were amputated, while 74 were treated conservatively. We do not yet know the mortality results in South Africa, nor do I know of any uncomplicated case of gunshot fracture of the femur treated by primary amputation. I fancy there must have been very few. Recovery was looked upon as the ordinary result, although union was often considerably delayed, and the risk to life and limb was increased the higher up the fracture; while possibly 15 to 20 per cent. were amputated for various causes later on. I think the record of this war will show amazingly few primary amputations for injury, but a certain number had to be performed at a later period on account of septic conditions.

The way in which many perforating wounds of one side or both sides of the chest recovered was nothing short of marvellous. Very often the most trivial inconvenience was the result—trifling dyspnœa, perhaps, or hæmoptysis, which was

often absent and frequently insignificant, and complete recovery followed in a few days. In other cases there was more or less hæmothorax, and in a few pyothorax; what the ultimate mortality table may show we do not yet know, but it will not be very large. In the Franco-German war half the cases terminated fatally, and in the Civil War the mortality was as high as 62.6 per cent.

It may be taken as proved that a Mauser or Metford bullet may traverse the knee and other articulations and fracture the bones, entering into the joint without causing any risk to life or limb, or even any permanent disablement. The old difficulty as to amputation or resection did not arise, the treatment was expectant, suppuration was rare, and when passive movement was commenced sufficiently early excellent functional results followed.

In the sketch to which I have limited myself, I think enough has been said to show how completely the character of gunshot injuries is changed. Their severity is not only diminished, but also their relative frequency, so that the progressive improvement in lethal weapons does not appear to render the prosecution of war more difficult, or to render it impossible, as some have recently contended.

In the American Civil War 1 man was killed for every $4\frac{1}{5}$ wounded, while with the Mauser bullet the proportion of killed to wounded is 1 to $7\frac{1}{2}$. Only 6 to 8 per cent. of those wounded now die, whereas in the Civil War the percentage was $14\frac{1}{2}$; this is due, no doubt, to the altered character of the injury, and also, in no small measure, to improvements in the method of treatment.

It has often been forgotten what a complete change there is in the battles of this present war from any that have gone before. Stress is placed upon our losses, but they are almost insignificant in comparison with those of former times. In the Crimea they reached nearly half our strength. There was no trained transport corps, nor hospital service, nor adequate system for the care of the wounded on the battle field at the beginning of the war, and numbers died on board the ships transporting the sick and wounded to Scutari in consequence of the inadequate preparation, although it is a journey of only 36 hours.

Now the enemy is for the most part unseen, and the smokeless powder fails to give any sign of his whereabouts. At some of the earlier battles—that of Colenso, for instance—the Boers were invisible during the entire day; not a single Boer was seen by our men, and the result was that the enemy only lost 5 killed and 25 wounded; while on our side there were 1,100 casualties.

What a contrast is this to the early battles of the Franco-German war, with their brilliant cavalry charges, and their masses of men hurled at the objective, without heed of the loss incurred; they were literally decimated. At Gravelotte, on August 16th, 1870, each side had 16,000 men placed *hors de combat*. On the 18th, two days later, occurred the terrible struggle of St. Privat, where 120,000 French were pitted against 180,000 Germans. The artillery, the mitrailleuses, chassepots, and needleguns, plied against one another in the open. Five times Steinmetz's sharpshooters were driven back, and many corps lost half their officers. The Prussians were repeatedly repulsed with fearful loss, and at 7 in the evening Bazaine and his officers considered the field was won. But at 9 the Prussians again attacked, and in the early morning the Royal Guards advanced up the exposed slopes of St. Privat against Canrobert.

They assaulted one position after another in superb fashion, but the slaughter was dreadful; almost all the principal officers were struck down, the colours exchanged hands several times, and 160 German officers and 4,000 soldiers were laid low in the attempt. Nevertheless the Germans poured in regiment after regiment, 14 Saxon batteries of artillery were added to the ten Prussian ones, and, as the sun was setting, the Saxon regiments of the Guard, drums beating and trumpets calling, rushed at the double on Canrobert's forces; there was fighting in the streets, in the houses, in the cemetery, man to man with bayonet and butt end of musket, and the place was taken.

The French lost that day 12,000 men and the Germans more than 20,000, amongst them the flower of the army, for the Prussian Guard had 300 officers and 8,000 soldiers either wounded or killed. One of them was Langenbeck's son, who told me he had spent many long hours in search of him only to find him mortally wounded.

The Germans nearly lost the battle, and would certainly have lost had Bazaine come to the assistance of his colleague. He heard the guns, and was informed of the situation by Marshal Leboeuf, yet he never left his office at Plappeville. Soon afterwards Moltke's supreme knowledge shut him up helpless with 170,000 men in Metz, and a little later, on October 29th, Metz la Pucelle and all this great French army was forced to surrender.

In some of the great Napoleon's battles as many as 38 per cent. were disabled; at Waterloo the number was 24 per cent. At Koeniggratz, the bloodiest battle of the war of 1866, it was $7\frac{1}{2}$ per cent. At Mars le Tour it was 16 per cent., and at Sedan 12 per cent. I was there that day, September 1st, 1870, when the French lost 3,000 killed and 14,000 wounded—not very far short of our total loss for the entire period of the war in South Africa.

During twenty-one months of this war, from the beginning up to the end of June, 4,355 officers and men have been killed in action, 18,291 were wounded, and 1,493, or 8.1 per cent., of the wounded died.

Modern troops in the field are now supplied with a packet of antiseptic material called a "first field dressing." It is hermetically sealed, and carried in a special pocket in each soldier's jacket. If a surgeon be near, he applies the gauze contained in the packet to the wound, and fastens it on with the bandage supplied; or the wounded man himself does it, or his comrade for him, as every man is taught its use and application. It certainly helps somewhat, and comforts the wounded; but I do not myself much believe in its antiseptic adequacy, and it often slips out of place.

Later on the Roentgen rays are of great service; they localise the foreign body when lodged, and determine the extent and direction of a fracture. They should serve to abolish the use of the probe, which is a fertile cause of mischief and of needless pain and suffering.

Before the regimental system ceased to be each regiment had a surgeon-major and two assistant surgeons. In time of peace there was very little for them to do except to look after a few sick in the regimental hospital. In time of war they accompanied their regiments into action as at Waterloo and in the Crimea, and tended the wounded, often under fire. When the regiment moved on the wounded had perforce to be left behind to the chance care of such persons as could be found to look after them, and there was practically no organised system of transport, field hospitals, and bearer companies.

The organisation of the transport of wounded from the field to the field hospital, and thence to the stationary and base hospitals, is now very complete, and worked well in South Africa. Formerly the wounded might have to lie for days untended, now they are looked after with the least possible delay, and passed along the continuous relief chain from the front to the base with a minimum of hardship and delay. I myself saw many who had been exposed after Sedan for three or four days, and some were even longer, without any succour.

The hospital ships and hospital trains are comparatively new departures, and of immense value in modern warfare. The ships were, I consider, something as near perfection as anything human can be, and the hospital trains did splendid work. One officer I knew—Major Brazier-Creagh—lived for twelve months in one of these trains, almost constantly on the move. During the period of twelve months and six weeks that Major Brazier-Creagh commanded this train he conveyed 16,485 officers and men from the battlefields and along the lines of communication, covering a distance of 34,473 miles. The train was several times under fire, and was shelled on two occasions. It was also in collision, and more than once in imminent risk of being wrecked by the Boers; and the Princess Christian Train made 102 journeys, carried 7,000 patients, and traversed over 30,000 miles up to June last, and is still at work with the same staff of surgeons and nurses on board as at the beginning.

At the battle of Colenso, before the firing had ceased, a hospital train was loaded with 120 wounded men, every one of whom had been previously dressed and otherwise attended to by the bearer companies. This train, with its occupants

lying comfortably in their cots, was soon speeding on its way to the general hospital at Maritzburg. A few days later these and other wounded men were sent on to one of the hospital ships, provided with every medical and surgical requirement and luxury, awaiting their arrival at Durban. Many thus found themselves aboard ship, in a swinging cot, in the fresh sea air, a couple of days after they had been wounded some 150 miles inland. What a contrast to the incidents which took place in the Crimea and on some battle-fields in India, where the wounded had often to be left for days upon the field, being frequently plundered and sometimes killed by murderous thieves amongst the camp followers!

Dr. FARQUHARSON, M.P., congratulated the Section on having had the opportunity of hearing from a surgeon of Sir William MacCormac's unique and varied experience the results of military surgery in South Africa, in comparison with those in previous campaigns. His address formed a complete and forcible vindication of the Army Medical Department and their admirable work in South Africa under conditions of exceptional difficulty and danger, and at times when the society globe trotters, who afterwards posed as critics, were comfortably in bed after a good dinner. This work had been insufficiently appreciated, and the Department had felt rather strongly that their proceedings had been specially subjected to hostile criticism, and that it was thought necessary to appoint a commission to make inquiries, whilst the purely military side of the campaign had hitherto escaped hostile comment and investigation. The Commission was composed of able and trustworthy men, who took a calm, judicial, and dispassionate review of the situation, and it was unjust, cruel, and even libellous to characterise their report as a whitewashing one. Reading between as well as on the lines, they found some emphatic condemnation of the insufficient appreciation by the Government of the difficulties of the situation, but at the same time they praised highly the skill, devotion, and humanity shown by the army doctors under conditions of absolutely unprecedented difficulty. Undermanned as they were, compelled to attend vast numbers of sick and hurt, encountering overwhelming difficulties of transport and hospital accommodation they still attained results unknown in previous warfare. The climate had something to do with this, as well as the Mauser bullet, but much was due to the early antiseptic dressing on the field, as well as to the skill and care with which the wounded were afterwards treated.

Fleet Surgeon G. KIRKER, R.N., said he had listened with great pleasure to the very interesting and instructive address of his distinguished countryman and townsman, Sir William MacCormac. He did not propose to refer to Sir William MacCormac's paper further than to observe that it showed the great difficulties which the R.A.M.C. had to contend with and the splendid results which in spite of these difficulties they achieved. With the permission of the Section he wished to refer to a somewhat personal matter in connection with the nature of modern small-bore bullet wounds, a subject which Sir William MacCormac shortly treated. Through Sir William MacCormac's instrumentality he had the opportunity of observing bullet wounds in the Russo-Turkish war of 1877-78, and he presumed to regard himself as the prophet of the humane character of modern bullet sounds of which they heard so much now. In Turkey he saw compound fractures of the thigh which healed without suppuration, perforations of the knee-joint which healed without trouble, and cases of penetration of the chest from side to side which recovered without a bad symptom. When he returned home he made experiments on the subject of rifle bullet wounds, and based on these observations he brought forward the then new doctrine that rifle bullet wounds were less severe than round bullet wounds, and would be the more so the more their peculiar characters—especially smallness of diameter and hardness—were accentuated. He also pointed out that the splendid results, especially in the treatment of penetrating wounds of the knee-joint in the hands of Dr. Reyher, which were attributed to antiseptic treatment, were to a great extent probably due to their being produced by rifle bullets. A similar remark had recently been made by surgeons who had been out in South Africa, and several characteristics of small-bore rifle wounds had been brought forward in connection with the South African war which he brought forward twenty years ago. His papers on the subject were one in the Transactions of the International Medical Congress of London, 1881, and another read at the meeting of the British Medical Association in Belfast in 1884 and printed in the BRITISH MEDICAL JOURNAL in the following September.

Surgeon-General O'DWYER pointed out that with a force extended over a frontage of three miles, as was the case at Waterloo, it was much more easy to remove the wounded promptly than when they are scattered over an advance extending over twenty miles—and Lord Roberts informed the troops at Bisley the other day that future wars against troops armed with modern rifles must be in the very extended formation. It would require a great increase of medical *personnel* as well as of the transport for medical purposes. Surgeon-General O'Dwyer fully corroborated Sir Wm. MacCormac's experience as to the benign character of the modern small-bore bullet. He also pointed out the difficulties the medical service had to contend with in improvising *personnel* and equipment only intended to be sufficient for a force of 70,000 men to suffice for a force of 200,000, for it appeared from the evidence given by the Chief Ordnance Officer at Woolwich Arsenal as given before Mr. Justice Romer's Committee that after the hospital equipment for the first two army corps 70,000 men had been despatched, only one general hospital and three stationary hospitals remained in store to meet the requirements of the remaining 130,000 men added to the South African field army. He concluded by thanking Sir Wm. MacCormac for his interesting paper and from the deductions from the war which would be treasured up by those who had to do with wounded men.

Surgeon-General HAMILTON commented on the various forms of bullet that had been in use in the British army. Commencing with the original spherical, and passing on to the Minié, the Enfield, the Snider, with its expanding, indeed almost explosive bullet; the Martini, and finally the Lee-Enfield of 0.303 bore. He alluded to the great penetration of the present bullet, deprecating in the strongest terms the use of expanding bullets, and proposed a motion on the subject.

Surgeon-Major POOLE said his experience of the South African war had been gathered from his connection with the Soldiers' Help Society, and pointed out that the worst cases of injury had been from the use of explosive bullets; the present bullet was comparatively harmless—men coming to his study for help to work who had had a bullet entering one side of the head behind the ear and passing out at the right eye, whose appearance and behaviour had been that of happy individuals.

Surgeon-General HARVEY (Director-General I.M.S.) thought that in justice to the Government of India he should mention that the first field dressing had been used in all recent Indian campaigns. The surgical results of these campaigns had been excellent; in the second Mirangui expedition of 1891 less than 3 per cent. of the wounded had died, and the proportion of deaths among the wounded in the Tirah campaign was very small. He entirely agreed that in fighting with a civilised enemy the use of expanding bullets should be absolutely prohibited, but in the case of savage foes who were determined to kill their enemy though they died for it, the case was different. A fanatical Ghazi was not checked by the modern bullet, which went through him like a knitting-needle through a pat of butter, and it seemed to him quite legitimate to stop him by any means necessary, including the Dum-dum bullet. It was false humanity to allow our own men to be killed rather than take means to effectually prevent this by disabling the enemy.

Mr. J. W. SMITH (Manchester) said that from his experience in the South African campaign he wished to support the conclusion enunciated in the paper. He regarded the first field-dressing as somewhat ineffectual either as an aseptic or antiseptic agent, and attributed the aseptic course of wounds rather to the nature of the wound and atmospheric conditions than to the dressing. Some better means of fixing the dressing should be devised.

[Surgeon-General Harvey's observations on the advantages of the Dum-dum bullet in war with savage and fanatical foes were approved by the Section, and Surgeon-General Hamilton's motion deprecating such bullets was not entertained.]