

**What we observed during a visit to the seat of war in 1870 / by Charles Orton and William Dunnett Spanton.**

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WHAT WE OBSERVED  
DURING A  
VISIT TO THE SEAT OF WAR  
IN 1870.

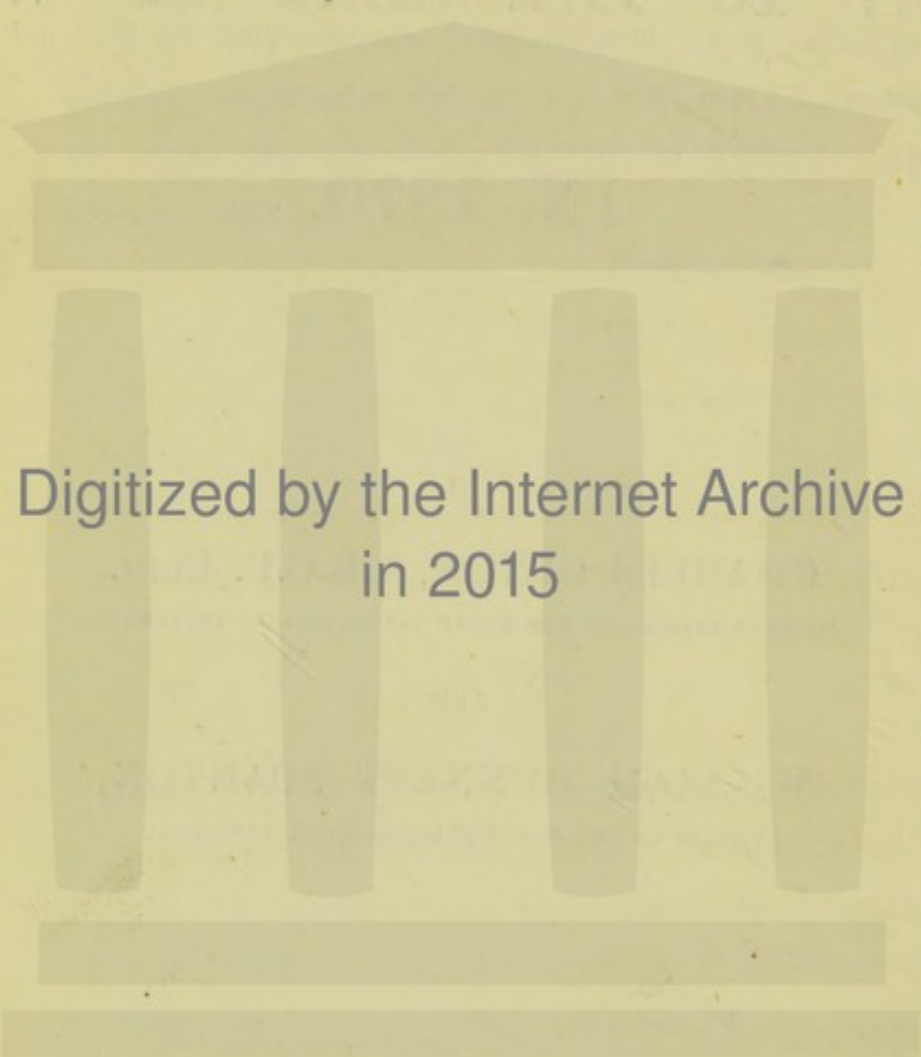
BY

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LONDON :  
J. & A. CHURCHILL, NEW BURLINGTON STREET.  
1871.



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WHAT WE OBSERVED  
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VISIT TO THE SEAT OF WAR  
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*(Reprinted from the 'Lancet'.)*

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TAKING Brussels for our starting-point, we proceeded on September 23, 1870, to Poix St. Hubert by rail, and thence by diligence, through a very interesting country, to Bouillon, a small town on the river Stenay, on the main road to Sedan. Here we began to notice some of the effects of war. The place was crowded, and there were about 100 wounded soldiers in the village, under the care of the Prussians, scattered in various buildings. Dysentery was rife. The patients were dying at the rate of about six a day, but we could not learn any particulars of the cases. We heard first of the magnitude and the difficulties of the transport of stores and wounded at Bouillon—horses and carts being required for purely military service; so that some of the officers connected with the ambulances were often under the necessity of walking to and from Sedan to Bouillon



and the nearest railway town, a distance of twenty-six miles. The wounded were conveyed generally in the long narrow carts of the country, filled with straw; sometimes in field ambulances, several long convoys of which we passed on the road. Food was scarce, owing to the immense number of soldiers and wounded who had passed through the place during the previous three weeks, the latter alone having averaged over 700 a day.

A ride of eight miles next morning, through a very beautiful country, in the heart of the forest of Ardennes, brought us to the descent towards Sedan, and in the villages, for the last two miles, we noticed numerous red-cross flags flying from the churches and most of the large buildings—sure evidence of suffering within. The marks of fighting along this part of the road were painfully evident, and the numerous graves on each side told their own sad tale. On one field the surface was literally covered with loose papers, the contents of the soldiers' pockets; and this we found always the case where the engagement had been severe. It is said that the men, in anticipating a desperate struggle, invariably empty out all their papers, so that they may have a chance of being picked up. Knapsacks, helmets, straps, and broken weapons of all kinds, were almost as numerous as the pieces of paper, and, in some places, literally covered the ground in heaps.

After the battle of Sedan no less than 14,000 French wounded were brought into the town; and although



many of these had, at the time of our visit, been sent away into Germany, the numerous cross flags flying throughout the town told of many still there.

We may remark here, that the plan of the Prussians has been throughout this war to send away as many of the wounded as possible at once, and to keep none near the battle-fields who are at all able to be moved. The horrible stench we encountered in some parts of the town was sufficient to suggest the necessity of removal at the earliest possible period. We ventured to throw out a hint to some of the authorities that one very efficient means of lessening this smell would be to have numerous peat fires burning over the district—a very simple plan, which might easily be adopted.

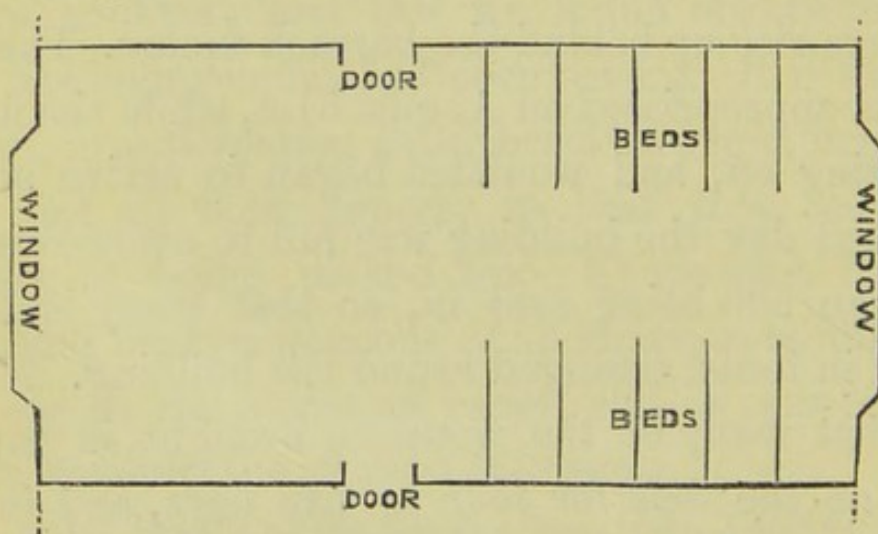
The Anglo-American Ambulance, by far the largest in Sedan, was situated at the Caserne d'Asfeld, converted from barracks into a hospital. It stands on high ground, at the west extremity of the town, and facing some slopes upon which the Prussian batteries had been placed; on each side is the citadel, and the ramparts rise up behind the barrack square. The building was appropriated on August 31st, while the fighting was going on, and wounded began to arrive at once. The next day the building was full to overflowing, not less than 600 being sent in, so that many had to be placed in tents arranged round the building. We were told that many of the wounded brought in had been lying on the field for four or five days, and in many instances had to remain untended for two days in the



tents. There were sixteen surgeons, Dr. MacCormac and Dr. Marion Sims being at the head. Dr. MacCormac here, and Dr. Frank at Balan, are said to have performed all the operations; and if this was the case, it is easy to understand how some of the poor fellows may have lain two days, or more, before being operated upon. Then the question arises, How much better chance of life would have been afforded them, if the junior surgeons in charge had been allowed to operate at once?

A striking commentary on this circumstance is afforded by the fact, that in proportion to the length of time which elapsed from the receipt of injury to the time of operation, were the chances of the patient's recovery. Of those whose injuries dated back a week, scarcely one recovered.

The hospital contained 384 beds, arranged in a series of long rooms, one leading into the other, about 30 ft. by 50 ft., having a window at each end, the iron beds being in regular rows, twenty in each ward, thus:



The only furniture consisted of the beds, chairs, and



a table in each room, with a screen near some of the doors.

The operating room was the second from the entrance. The windows, which were of large size, had been kept open night and day, during all kinds of weather, from the first, the wind blowing through the ward. To this circumstance, along with the free use of carbolic acid, Drs. Sims and MacCormac attribute their success. There had been in this hospital no epidemic, no erysipelas, no hospital gangrene, no typhus. We noticed more than one case, however, of clear pyæmia, at our visit.

There were about 100 cases in the building, all the others having been removed. Of the latter, Dr. Woodham Webb took charge of forty, who were placed in a handsome, well-furnished chateau, near Balan, and, during the first week after removal, eleven cases of fever broke out. The rooms are said to have been close, owing, in some measure, to their being fully furnished; but so far the rate of mortality was unknown. Meanwhile, no case had occurred among the number of those left in the Caserne.

There is no doubt that the plan of free ventilation, admirably as it answers in warding off so-called hospital diseases, has this drawback—it has to answer for many cases of pneumonic and other chest mischief, which would not otherwise have occurred.

It is possible that deaths from this cause might have been prevented if there had been surgeons in sufficient



numbers and of sufficient experience to watch these cases, to detect any premonitory signs of chest affection, and then, in such a case, to have the patient at once removed to a somewhat less airy ward set apart for the purpose.

Conservative surgery had been attempted to a large extent, but the results were not so satisfactory as might have been anticipated. Most of the wounds we saw were those produced by shell or the needle-gun bullet—the former causing extensive flesh wounds, the latter smashing the bone very much. The needle-gun and the chassépôt bullet were both said to cause much crushing of bone, necessitating, as a rule, primary amputation. *In every case* in which a bullet was found to have entered the bone, amputation was resorted to. Resection cases were plentiful, and had in many instances turned out well.

It must be remembered that we saw what may be termed the intermediate cases only. Those in which the injury had been unusually severe or slight had gone—too many, alas! not far, but beyond human observation, as a small well-filled burial-ground hard by testified. All the slighter cases, including most of the injuries about the head and upper extremities, had been removed to healthier spots, and this may explain some statements which have appeared in the papers to the effect that a large proportion of soldiers were wounded in the lower extremities. Probably these alone came under the



notice of the writer, as they were, naturally enough, kept longest in hospital.

Among many cases of interest, we saw one in which *excision of both elbow and shoulder-joint* had been performed on the same arm, and the patient (a Frenchman) had also a very extensive lacerated face-wound. He was doing well, twenty-three days after receipt of injuries.

Another man had a large lacerated wound of the thigh caused by shell, with a bullet wound through both legs just above the ankle. This patient had tetanus early, which was readily and completely controlled by repeated doses of hydrate of chloral. He was suffering when we saw him from undoubted pyæmia, so that the case looked very unpromising.

We were told of one case in which a ball had struck a man on the front of the thigh, driving a piece of his trousers, with his watch, deep into the muscles.<sup>1</sup> This was with some difficulty extracted, and the watch, though completely smashed, was found complete. The man did not long survive.

In every instance where it was at all practicable, the bullets were extracted at once, and we were assured that in only three or four cases had it proved impossible to succeed in doing it. This forms a contrast to the plan pursued in the Dutch ambulances, of which we shall have something to say presently. The Dutch

<sup>1</sup> A part of this watch was exhibited at a late meeting of the Pathological Society.



surgeons only extract when the operation can be readily performed.

Chloroform was given in all the operations of importance at the Anglo-American Hospital. This was also the case at the French ambulance at Sedan.

The *mode of dressing* wounds and stumps was to use at first Lister's plaster, or simple wet lint; then, as a subsequent dressing, after washing out the wound with lotion of carbolic acid of variable strength, according to the nature of the case, to place over it a piece of wetted lint, and on that some oakum. At first, ordinary water dressing with lint and oil-silk, or gutta percha, or a simple poultice, was used; but the stench became intolerable. Under the use of oakum the wounds progressed more favourably, and the atmosphere of the ward is greatly improved. In a case of compound fracture of the thigh *two* long side-splints were employed with good effect, enabling the limb to be more readily moved without pain. The *diet* was liberal in the extreme, meat being given twice a day in good quantity, soup also twice, and coffee and stimulants freely. Smoking was in this, as in all the other ambulances we saw, not only permitted, but encouraged. From the eager desire the poor fellows so uniformly manifested for tobacco, we could come to no other conclusion than this—that it has an undoubted power in soothing the nervous system, and in this way is of invaluable service after the excitement of a battle, and perhaps even more so in those cases where defeat



has rendered the reaction more intense, as in the case of the French in this particular instance.

During the first three days after the battle of August 31st food was very scarce, and the medical men, like the patients, had to be content with bread and water, with some little wine. This, in the face of the work to be done, must have been trying enough ; but now there is abundance—we may, indeed, say a redundancy—of everything, medical help included.

At the *Sedan French Ambulance*, situated in what had been a large cloth warehouse, there had been three cases of primary amputation at the hip-joint, one of which was doing well twenty-four days after injury. One officer, who had both legs and both arms amputated at this hospital, was making a good recovery. A cavalry officer, he was riding, when a ball struck both his legs, passing through and killing his horse, and a second bullet went through both his arms. The amputations were said to have been performed in spite of the patient's earnest entreaties to be left to die.

The *Swiss Ambulance* in Sedan had been a cotton-mill, of which the three upper storeys were occupied, the ground floor being used for stores, &c. The windows, which were opposite, were so numerous that there was almost one to each bed ; the rooms were low, but very freely ventilated by means of the windows and cracks in the floors. Free living, rest, and carbolic acid were the principal means employed, and with great success. Of thirty-five to forty cases of amputation only one



died. Of the cases of resection and compound fracture none succumbed who outlived the first few days. Many were brought in dying, some even dead.

We must not quit the subject of Sedan without noticing the very unsavoury state of the river Meuse, in which large numbers of horses and men were drowned, and which must surely, ere long, as it has indeed to some extent already, give rise to grave results among the population.

One word as to Bazeilles, that village of the dead, as it might well be called. Once a flourishing suburb of Sedan, with a population of about 3000, it is now as complete a ruin as the mind can possibly conceive, and the wreck of once charming villas and lively streets has become, it is to be feared, a vast mausoleum.<sup>1</sup> The ambulances under the care of Dr. Frank and Dr. Woodham Webb are situated near to this place, but we had not an opportunity of seeing them. The latter is at Balan, and we have already alluded to the unfavorable condition of its inmates in speaking of the patients removed from Sedan. The history of Bazeilles and Balan alone would fill a volume, but we must pass on to our next hospital visitation.

Leaving Sedan by way of the French towns of Mezieres and Givet, we made our way by a circuitous route to Saarbruck, being of the number of those who

<sup>1</sup> Accounts published in the 'Times,' since this was written, tell of a large number of persons already found buried beneath the ruined buildings.



travelled in the first passenger train to Saarbruck since the war began. Seeing in these towns a large number of French soldiers, and having previously observed many Belgian ones, we were enabled to compare them with the Prussians, of whom we saw large numbers. The superior physique of the Prussians is very marked, and their mental condition is quite as much superior as their bodily is to that of the French and Belgians. We found the Prussians, officers and men, very intelligent, courteous, and well informed. Many with whom we spoke attribute their success to their superior education and their better artillery. How far moral courage may also have helped them we have no means of knowing, but there can be little doubt that it has been an important element of success.

On our way we passed Arlon, the dépôt of the National Society, which has proved a most inconvenient station for the purpose, and has sufficiently demonstrated by this fact the absolute necessity of having everything at hand and well organized for all field hospital work.

At *Saarbruck* we were first struck with the extent and completeness of the provision made for the conveyance of the wounded. At that station were many waiting to be sent off, those who were able being seated in the railway carriages, others placed in hammocks hung by means of india rubber fastened in the sides, and their comfort appeared to be cared for as much as was possible under such circumstances. It was an



extraordinary sight to see such scores of stretchers of all possible shapes lying about in heaps, long wooden tents outside the station, as well as an enormous extemporised waiting-room in the building for the soldiers to wait and to feed in. The evidences of dysentery among the railway travellers were repulsively manifest, and we cannot imagine why the simple plan suggested by Captain Brackenbury, of having long trenches at the stations with a supply of earth for the use of the men, has not yet been adopted.

The *Prussian ambulance*, at the Casino, a handsome stone building near the river, with beautiful gardens at the back, and a most luxuriously decorated suite of rooms within, formed such a charming retreat after the turmoil of battle as must surely have conduced, if anything could, to alleviate the depression of its inmates. The large concert-room devoted to the officers is very high, with large glass doors and windows constantly open, and there was an airiness about it which is unhappily most unusual. Everything was very clean; the patients were abundantly supplied, even to luxuries. We were told the cases had done very well. One French officer we saw had a gunshot wound of the leg, the ball having entered at the groin and passed out below the knee—doing well. There was a case of the fever which has prevailed so much, and which the Germans and Dutch term abdominal typhoid. The patient had a shell wound of the leg: dry tongue and lips; occasional



delirium; *no rash*; soft, quick pulse, flushed face, hot, dry skin, and tendency to diarrhœa.

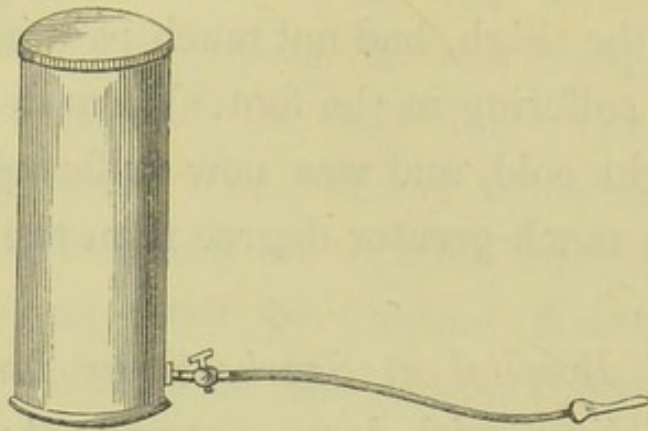
A Prussian officer, wounded by a chassépôt bullet in the front of the thigh, had not much pain in the wound, but horrible suffering in the foot. Worn down by pain, he had caught cold, and was now suffering from lung mischief to a much greater degree than the poor fellow would admit.

The *Civil Hospital at Saarbruck* we found a commodious building, with large entrance hall, but the wards opening into a corridor, having windows, therefore on one side only. The wards were of moderate size, each one containing from six to a dozen patients, of whom the great majority were military cases. By the side of every bed was a closed locker, with a drawer, and standing on each one was a bottle of water and a glass. Ventilation only by windows and doors; bedsteads of wood, and the floors of polished oak. The beds had springs, with wool mattresses.

We saw in one of the wards an admirable contrivance for a lifting bed. The ordinary bedstead stands within the lift, which is merely a framework. The raising is effected by means of a handle attached to a winding iron rod at the head and foot; over each rod passes a band of webbing attached to the framework below, which lifts it to any required height. A series of screws at the sides tighten the cross-bands which form the floor of the lift, and these can be placed at any distance, or removed for convenience of



dressing, &c. The case we saw was one of *gunshot of the thigh*, with anterior wound of entrance and a

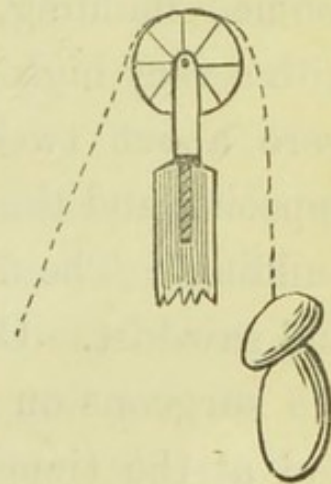


Irrigateur, made of tin, with a tap and simple india-rubber tube ending in an ivory nozzle.

posterior wound of exit. The thigh was bound up in cardboard splints, the posterior wound being left open. The patient raised, the wound was readily dressed without the slightest movement. It was done in this way :—first very freely syringed out with dilute Condyl's fluid by means of a very simple "irrigateur" (see sketch), and then covered over with simple charpie and lint. The dressing was changed twice a day.

A case of *resection of tibia* for shell-wound was doing very well, placed in an open wirework splint, shaped like Butcher's, but sufficiently large to admit a water pillow within it as a pad, and a very excellent and cleanly pad it was. The whole was steadied by means of sand bags, and the patient said he was quite comfortable. Everything was very clean, and the ward arrangements were complete.

The *Swiss Ambulance* was situated at some barracks on the hill towards Spichenen. A large room, containing about thirty beds, with opposite windows and three doors, formed the chief ward. The same general plan of treatment was adopted as elsewhere, much being left to the *vis medicatrix naturæ*. Simple charpie, moistened with warm decoctions of chamomile or poppy, along with free cleansing of the wounds with some disinfecting fluid, was the ordinary dressing. There had been only one case of amputation, in the upper third of the thigh, and he was recovering. We saw a compound fracture of the thigh, in which there was quite a small anterior entrance wound, with a large, jagged posterior one of egress, put up in a long plaster of Paris splint reaching from the ilium to the toes, with windows for dressing the wounds. Another compound fractured thigh was being treated by the pulley, which was ingeniously screwed into the foot-board of the bed, as shown in the accompanying woodcut, much too heavy a weight being attached, however, which we ventured to suggest would answer its purpose more easily, and quite as effectually, if diminished by about two thirds.



We noticed a man dying from the so-called typhus which was at the time making sad havoc in the district. He was quite prostrate, with quick weak pulse, sallow



countenance, skin moderately but not excessively hot to the touch. Tongue dry and coated, but no brown fur upon it. No spots anywhere; no tympanites; no purging. This case differed somewhat from the one already mentioned, but this was probably owing to the different stages at which we observed the disease.

The cases of fever and dysentery together were being brought into Saarbruck from the Metz army at the rate of about forty a day; the mortality of the latter, we were informed, did not exceed five per cent.

We were much interested with the *Dutch Ambulance*, and had the advantage of being shown over it by a most courteous and intelligent volunteer surgeon, Dr. Lehmann.

The Dutch had immediately after the battle of Spicheren established their ambulance hospital in the Gymnasium and Riding School. This was a large one-roomed building, 80 or 90 feet long by 60 wide, and with a very high open roof. The windows opened, and were about twelve feet from the ground, arranged opposite, and there was a large door at each end of the building. The floor was several inches thick with tan and sawdust. Carbolic acid was used so freely that the surgeons on going to dinner were redolent of it, and at the time we saw the place, more than a fortnight after being cleared, the smell was quite strong. For about five weeks the cases went on very well. At the end of that time a compound fracture went wrong, soon another, and another. Then dysentery and pyæmia



made their appearance, and it was decided at once to vacate the building. The patients were removed, some into adjoining barracks, others into large tents, but the latter had soon to be relinquished on account of cold. The rooms in these barracks were small, most of them having only four or five beds, and were, perhaps, the worst adapted for the purpose of any we had seen. There were some cases of *fever*, of similar type to those already mentioned, and they were evidently considered as typhoid, although we came to the conclusion that the Continental surgeons seemed, as a rule, not to distinguish as clearly as we do the line between typhus and typhoid. Many cases of *dysentery*, too, had come in—usually of a severe form—but not very fatal, as we have already mentioned in speaking of the Swiss Hospital. The patients suffered much pain, with frequent purging, and almost constant tenesmus; their faces pale and pinched. Greatest relief was afforded by the hypodermic injection of morphia in doses of  $\frac{1}{8}$  to  $\frac{1}{4}$  of a grain; but opium was also freely given. There was a man with a gunshot wound of the shoulder, with one opening in front of the axilla and four others on posterior surface, the ball, no doubt, having been split up into fragments, which were still left in. The rule is with the Dutch only to remove the ball when this can be accomplished quite readily. These wounds were dressed with charpie dipped in carbolic acid lotion, the edges of the wounds being first pencilled over with collodion.

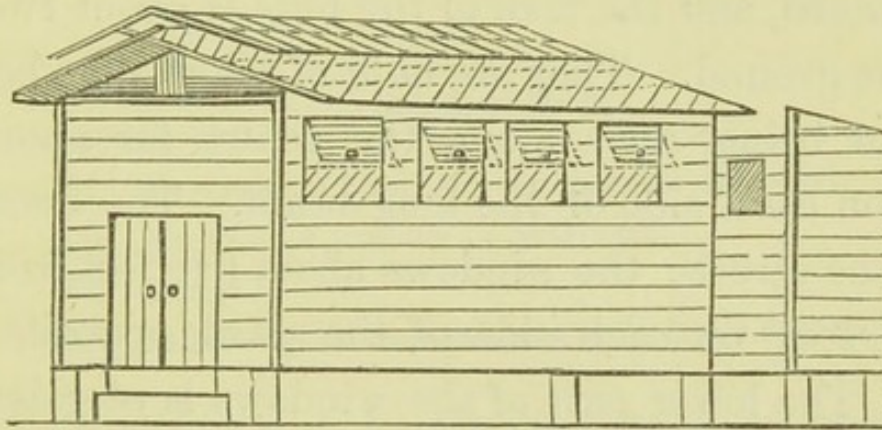


The *diet* was very liberal; meat in full quantity twice a day, soup twice, one bottle of wine, coffee, tea and biscuits (similar to rusks) as much as they liked, constituted ordinary diet. Extras of all kinds were ordered when necessary.

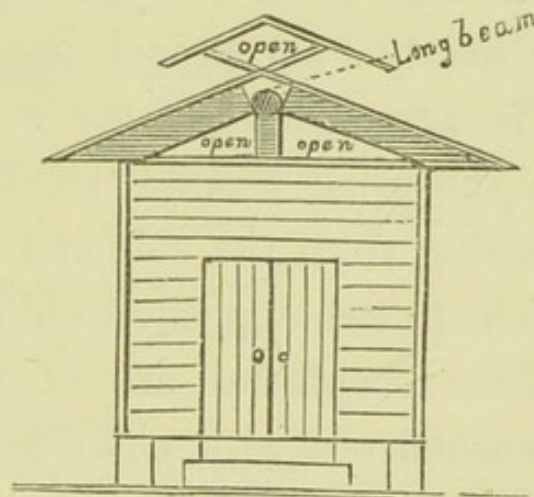
The iron bedsteads had a hinge near the centre, so as to form a bed-rest, and in this way pillows were to some extent superseded.

We found the *stores* of this ambulance most admirably arranged, being entirely under the management of a private Dutch nobleman, and a very pleasant, jolly-looking, and intelligent one withal. Everything was brought from Holland except meat and bread and milk. All the different articles were arranged in a room of moderate size outside the barracks, in a most methodical manner, each portion allotted having a plain label. We noticed a large quantity of preserved edibles, such as extract of beef, extract of milk, extract of coffee, herrings, cheese, tea, coffee, sugar, &c., *ad infinitum*. Along with all these we were shown a portable cooking stove, after the pattern of one recommended by Prof. Longmore. It is only about eighteen inches square, but in a few minutes will make soup or coffee for fourteen or sixteen men, and a chop or steak can be prepared as quickly. Nowhere else did we see anything approaching the completeness of the arrangements of this store. In this, as in the Prussian hospitals we visited, we noticed the absence of any superfluous attendants, though there was everywhere

enough of everything needful, and the patients in every case expressed themselves as being comfortable, and all of them equally well cared for.



Side view.



End View.

Belgian Ambulance Huts at Saarbruck, made of rough logs of pine; cost about £9 each to build only, and accommodate 15 patients.

The *Belgian Ambulance* is situated in a garden about



a quarter of a mile out of the town, and consists of a series of ten wooden huts, five on each side, with a street between. They are each about forty feet long and twenty-five feet wide, and the space between each is about thirty feet; fifteen beds in each. The ground is well drained, and the floor of the huts is about two feet from the ground. They are built of rough pine boards, the roof being open along the centre for about six inches on each side of the long beam. The doors are facing the street; the windows about five feet from the ground, four on each side of the ward, opposite each other. The lower part of the windows is of glass, but the upper part consists of a wooden shutter opening by means of a hinge above, so that it can be closed or opened to any required extent. In this way air can find its way in and out most freely, the planks forming the floor being nearly half an inch apart to facilitate ventilation. The atmosphere of the wards was peculiarly free from the usual hospital smell. At the end of each hut, opening from the side and separated by a corridor in which are two opposite windows, the closets are placed. The receptacles are of wood, and are emptied and washed out with chloride of lime twice a day, earth being used. The huts for stores and kitchens, &c., were more firmly built, and excellently arranged.

The results in this ambulance had been most satisfactory. Of 300 cases admitted, only twelve had died; and of thirty cases of fever, only four or five had

died. There had been some dysentery, but of a mild type.

### COST.

Total cost of the Ambulance from commencement to the  
 23rd September . . . . . Frs. 5402  
 Or, £216

### *Details of Cost.*

Frs. 3561. Purchase of food, &c., for patients and staff.  
 529. Expense of journey to Saarbruck.  
 562. Drugs.  
 750. Indemnity to medical men at 10 frs. a day each.

Up to the 18th of September 159 sick and wounded admitted.  
 Total died, 7.  
 Of these, of typhus, 4.  
 Sent out cured, 38.

There were 141 Germans and 18 French.

Of Germans.—33 wounded.  
 37 typhoid.  
 64 dysentery.  
 2 ophthalmic cases and 5 other cases.

Of French.—17 wounded.  
 1 typhoid.

*Staff*—Two Directors.

Four Physician-Surgeons.

One Dispenser and his Assistant.

Six Male and six Female Nurses, one Cook and Assistant,  
 and one Laundress.

We must not leave Saarbruck without expressing our warmest thanks to Dr. Hardwicke, whom we met



there, and who was most obliging in putting us in the way of obtaining information. He had been at Saarbruck nearly a month, and his only grievance appeared to be that he really had nothing important to do during the whole of that time. The English work there appears to have been done in a very desultory way, little calculated to bring our country into good repute.

The indomitable determination of the Prussians was nowhere more clearly shown than by a visit to the heights above the town, where the battle of Spicheren took place. The position is so impregnable that we could not help expressing our astonishment at the French ever allowing it to be taken from them.

At Saarbruck, as elsewhere, the number of patients in the ambulances was fast lessening, as those who were sufficiently recovered were being sent away. The places of the wounded were, however, being filled up to some extent by others affected with dysentery and fever, who were daily being brought in from the army before Metz. In the carriage with us when we left Saarbruck were three very interesting cases:—One man, a Prussian corporal, wounded at Gravelotte, had received a chassepôt bullet below the left orbit, which passed through the palate and made its exit in the middle of the neck on the opposite side. The wounds were nearly healed. Another, a Prussian private, at Spicheren, was about to fire when a bullet struck him



on the upper jaw, carrying away the whole of his upper front teeth, and the alveolar process with them. While he was spitting out this unpleasant bolus a second shot entered his mouth, smashing the left side of the upper jaw and passing out through the malar bone. The third had a bullet wound of the forearm, and another in the loins, the balls having been in both instances extracted. They were all in capital spirits, and ready enough to keep up a vigorous song, the jaw-maimed man quite as loudly as the rest. These men were going with a number of others to Coblenz. Such instances might be multiplied almost indefinitely, so eccentric and so varied are battle-field injuries.

We next visited the model hospital at Bingen. To begin with the station of Bingerbrück, we noticed that the arrangements for receiving the wounded were even more perfect than elsewhere. A restaurant in the station was arranged as a surgery, in which those patients who needed it had their wounds dressed, bandages readjusted, food, &c. given them before being sent on to their destination. For it must be remembered that some—indeed, most of these poor fellows—had to travel from one to two hundred miles; and although everything was done which ingenuity and humanity could devise to mitigate their suffering, this must have been to many of them a severe trial. One object of the Bingen Hospital, established by Dr. Thudichum, is to waylay some of these cases—the



more interesting ones, we were told, but let us charitably hope rather the more severe ones, whether interesting or not. At any rate, those we saw served to confirm the latter view.

The hospital, (if such a term can fairly be applied to it) is situated on the Rochusberg, a hill about 250 feet above the Rhine, and more than a mile and a half from the station of Bingerbrück. It was a stiff forty minutes' walk. Why it might not have been placed somewhat lower down we could not understand; but we came to the conclusion that if the officers in charge had to descend many times a day, they will not be long before they wish it were at a somewhat lower elevation than it is now. If the comfort and convenience of the wounded soldier are to be studied, surely easy access ought to be the primary consideration. After a railway journey of considerable length, it will not tend to improve a compound fracture or a severe case of fever to be carried up such a long, steep hill.

The International Field Hospital, as it is termed, is situated in a field overlooking the Rhine, and bounded on the west by the Rochus Hotel. This building was used at first as the hospital, the upper rooms being made into wards, the lower ones being, as they are now, adapted to stores. The kitchen is an outbuilding of the hotel. On the western side the field is enclosed by wooden hoarding, and on the other sides by a strong hedge of fir twigs and poles. This protection was found necessary to protect the tents from being blown



away into the river below!\* The field has been well drained by means of hard glazed pipes, which receive the waste water of the sinks. The liquid is carried into a distant shrubbery, where it is absorbed. No solid matter of any kind is allowed to enter the drains. At the entrance to the field is a porter's lodge, made of wood, and near this another building used as a store for spare tents, poles, &c. There are eighteen tents, each thirty feet long and sixteen feet wide, arranged in two rows, with a wide path between them. The tents are pitched on a wooden floor, raised about eighteen inches from the ground and surrounded by a trench, over which a little wooden bridge leads to the entrance. The sides of the tents are boarded. The canvas sides

\* The following is an extract from a letter from Mr. H. W. Page, one of the Assistant-Surgeons at the Bingen Hospital, which appeared in 'The Times' of October 30th, 1870.

"Last night, amid a storm unparalleled for its violence, and such as I never shall forget, which rose as suddenly as it departed, after forty-five minutes' duration, the whole hospital was swept off the face of the earth. Never was such a scene; never such agony. If it was awful for wounded men, without shoes or stockings, with nothing but their blankets, which in a second were drenched, to turn out and be exposed to the elements, it was even worse for the sick. Imagine a typhoid fever patient, for whom it is almost fatal to move in bed, having to take up his bed, and walk.

"The storm began at 8.15 p.m., and not till 1 o'clock this morning did we succeed in housing the unfortunate creatures in the operation-room, in the porter's lodge, and in the hotel. The wonder is that they all lived through it. To-day, what a wreck! Nearly every roof is stripped, and the people declare they never remember such a storm. The rest I leave to your imagination."



are securely fastened to the floor, as the wind is too strong to allow of their being free. The doorway is made by unhooking one part of the tent, which is double. Ventilation is secured by means of a pipe leading under the bridge to the centre of the tent, and also by means of a small aperture in the roof about six inches wide with a canvas cover which can be shut or opened by means of a string inside. In each tent is a close stove, from which the smoke is carried under the flooring to the outside. The result of this arrangement is that, if the wind be fickle, the smoke is driven back into the tent so as almost to suffocate the inmates, as there is no other outlet for it. The atmosphere of the tents was, when we visited them, decidedly stuffy and close. It was certainly a very warm day, and, on the other hand, we learned that at night the temperature frequently fell as low as  $5^{\circ}$  Cent. ( $40^{\circ}$  Fahr.). The mean temperature during the day was  $25^{\circ}$  Cent. (*i.e.*  $85^{\circ}$  Fahr.). The reason of this is that, the patients often complaining of feeling shivery, there is a temptation to make too great fires, and then the temperature cannot readily be modified.

There is a good operating room of wood, but as yet there has been little need for it. It is very well supplied with every requisite. At the end of the same row is a washhouse, with coppers for boiling linen, which was still unfinished, however. Opposite this is a small wooden shed, containing a stove of simple construction for drying earth for the closets. It is nothing more



than a long brick stove, covered with iron plating, and ending in a chimney. The chimneys are made of an admirable material, being solid perforated blocks about two feet long, of volcanic material mixed with fine cement and baked. The material is found at a village about three miles distant. It is proposed to move the kiln further off, as the smell of the earth is at times unpleasantly strong.

The *water* supply is brought from the Rhine by an eight-horse engine to a large galvanized iron tank, from which it passes to three large iron filters raised upon scaffolding, whence it is distributed by a regular series of pipes. All the water used for drinking, cooking, or for dressing wounds, passes through the charcoal filters. We did not notice any means of heating it, though there must have been some, as particular stress is made of the use of bathing in this establishment.

Arranged along the central street are five receptacles for fluids, which empty into the drains, and every drop of fluid refuse is carried to them. To each one a pump is attached.

There is an earth closet *in* each tent, with a zinc receptacle which is emptied and washed out with "mortar" daily (*lime*?). There was an entire absence of smell about them, though it is intended eventually to have each closet outside the tent, to be approached by a fold of canvas like that at the entrance to the tent.



Dr. Thudichum intends to have a tramway laid down from the kitchen round all the tents; at present it is about 150 yards distant from the furthest one. A telegraph wire is laid down from each tent to the porter's lodge and the hotel (where the medical officers are quartered), and thence to the station at Bingerbrück. By this means notice is given of the arrival of wounded at the station, when measures are at once taken for their removal to the hospital. Four trucks with light covers are used for this purpose, each holding one patient, and four men are required to pull one up the hill, so that sixteen men are thus kept employed whenever any stress of work comes. Each of these ambulances has six springs, so as to reduce the shaking to a minimum.

We now come to the interior of the tents, or wards we will call them. In each there are placed eight beds, not more than from eighteen to thirty inches apart, six only of them being occupied at one time. The bedsteads are of iron, with horsehair mattresses, straw palliasses and bolsters, and hair pillows. A small iron table, two chairs, and the stove and closet already mentioned complete the furniture. They were beautifully clean, and there was certainly an air of comfort about them. But a change from a bright September day to a foggy November one would probably alter the aspect considerably. The nursing is performed entirely by men (one to every four cases), and no women are occupied about the wards.



The *diet* is liberal; five ounces of cooked meat are allowed for dinner, and a smaller quantity for supper, but the amount given to each man varies somewhat as it is divided in the tent, and the patient's appetites are consulted to some extent as to how much each one shall have. This *rational* plan appears to answer well. Stimulants are given freely, chiefly, however, the wine of the district, which forms part of the ordinary diet. The store and kitchen departments are under the management of ladies, of whom Miss Thudichum is chief. There are two principal surgeons, Mr. Simon and Dr. Thudichum, with ten assistant-surgeons and five dressers, seventeen gentlemen in all to attend to at the most 200 patients. As yet, however, there have been but about fifty patients scattered in eighteen tents, so that there is no lack of medical attendance in this instance.

Dr. Thudichum very kindly showed us over the hospital, and gave us every information concerning its details. He informed us that the number of visitors was very considerable, as every one is naturally anxious to see a model of what is believed by its promoters to be a perfect hospital.

The fever cases are mixed along with the rest, or were when we saw them; but according to a letter in the 'Times,' a special tent appears to have been set apart for fever cases. This, however, is quite contrary to the principle which Dr. Thudichum expressed his approval of to us—that of mixing. He is decidedly



opposed (as were many whose opinion we asked on the subject) to any such building as a permanent fever hospital. One tent was set apart for cases of dysentery; but the cases had been of a very mild character, for some of them had been sent from a distance of 100 miles or more, chiefly from Saarbruck. The only treatment has been to give plenty of fresh air, simple (Liebig's) food, and now and then a little opium, but not much.

Carbolic acid has been freely used in the surgical cases; but less stress is laid upon this or any special mode of treatment than upon the influences of a fine, bracing atmosphere, good food, rest, and an entire freedom from outward contaminating influences.

The hospital is to all intents and purposes a convalescent institution. All the cases have, as a matter of necessity, to be brought a very long distance, and as there is a very remote prospect indeed of any fighting nearer than Metz, the cases may have to be conveyed further still. Why, then, to begin with, need it be placed in such an inaccessible position, with all its glaring drawbacks to counterbalance the advantages of a fine situation? Surely good air could be found in such a district without ascending nearly 300 feet. Then, again, what can twelve surgeons possibly find to do, even if they had no dressers to assist them?

We could point out what we conceive to be numerous defects in this so-called model hospital, but



will content ourselves with only one or two further remarks. During the lovely weather of summer and early autumn (and it *is* lovely at Bingen) all is admirable enough: but in the wet windy times, such as we are having now—fancy having to carry all the food for the patients a distance of more than a hundred yards through the open air—the medical officers having to pass the same way every time they visit a patient—the tents kept closed on account of the wind, the only ventilation being a small hole in the roof—half the work, in fact, having to be performed in the open air, and what comfort can there be in doing it? Then take midsummer. What patient could endure a canvass tent with the thermometer standing at say 80° or 85° Fahr. in the shade? The main point, however, appears to us to be this:—If it is intended for a *field* hospital, which we understand to mean really an ambulance, it appears little short of ridiculous to perch it upon such a hill, at so great a distance, too, from the scenes of action. If, on the other hand, it is intended to be a permanent hospital, while the same objections hold good with regard to its inaccessibility, it will have the additional drawback, we venture to think, of the loss in comfort and convenience which will more than counterbalance the advantages which are expected to accrue from its undoubted salubrious position. It has not the merit of being on an economical plan, as it has been stated by a member of the committee that the expenses will exceed £20 a day. Let us hope, there-



fore, that while it will serve to afford very many useful suggestions to those interested in hospital arrangements, and at the same time anticipating for it a favourable rate of mortality, it may not be taken as a *bonâ fide* model of what such an institution ought to be.

After leaving Bingen the only further opportunity we had of seeing a hospital was at Mayence, where we paid a very hasty visit to one of the permanent military hospitals. This probably serves as a type of the others; but many have been established in the large towns on the plan of the Belgian Ambulance already alluded to, which is an adaptation of that employed, on a very large scale, in the American war with great success.

The barrack hospital we saw contained 525 patients, as an index in the entrance-hall informed us, on which were also marked the names of the physicians and surgeons of the day, along with other particulars, among which were detailed the number of patients in each particular ward. The hospital was almost entirely filled with wounded men. One ward which we entered was numbered 80, in which were six patients, all Frenchmen. They expressed themselves as being quite comfortable, and well provided for. One had a half-filled bottle of wine by his side, another was eating chocolate, another smoking. As far as our observation extended, and judging from all we heard, no difference whatever was made between the French and Prussians in any of the hospitals, of whatever nation-



ality. We were told, however, but cannot vouch for the truth of the statement, that only French soldiers were taken in the French ambulances, as a rule. Our travels beyond Mayence to Kehl and elsewhere were devoid of any medical interest, so that we need not relate any details of that part of our journey here.

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We will conclude this paper by making a few general remarks on what we have already endeavoured to describe.

One satisfactory feature stands out prominently in regard to the present war. Enormous as the number of killed and wounded has been, there has probably never before, in any great war, been such a large proportion of the latter who have recovered. This result is attributable, no doubt, to many causes, but the principal have been the multifarious ways in which provision has been made for attending to the wounded and sick, and the manner in which they have been treated. Fresh air has been deemed of more vital importance than heretofore, and in most instances ample means have been adopted for securing a full supply of it. Then, again, the food supply has been in most instances better managed than it could have possibly been had the administration of it been left simply in the hands of the conquerors. For it should be remembered that in this war the Prussians have had to



provide, not only for their own people, but also for a very disproportionately large number of French also. It is manifest enough that the French commissariat, as well as the medical department, has been an utter failure. Thomas Carlyle writes thus of the French :

“ So far as my reading goes, there never was such a war, never such a collapse of shameless human vanity, of menacing, long-continued arrogance into contemptible nothingness.

“ Blow has followed blow, as if from the hammer of Thor, till it lies like a shapeless mass of ruins whining to itself, ‘In the name of all the gods and all the devils, what is to become of us?’ ”

This forcible language well expresses what might have been the language of the French prisoners and wounded, had they been left to the tender mercies of what their own people provided.

One thing is sufficiently clear, that in those buildings in which there has been the most perfect natural ventilation the immunity from hospital diseases has been greatest ; but this alone does not explain why, in some large buildings, such as churches and other high places, the mortality has been so large. We have come to the conclusion that ill ventilation alone is not sufficient to account for the difference. It has been observed that in churches, barns, and other similar buildings which have been long uninhabited, or never inhabited at all, there the mortality has been greatest. This



result has not always manifested itself at once, but, as in the case of the Riding School at Saarbruck, after being used for some little time.

In the case of our own new North Staffordshire Infirmary, in that of the new Infirmary at Aylesbury, and, it has been stated, in the new Leeds Infirmary—all built upon the best possible plans—as well as in many other new institutions, the surgical cases have at first turned out unfavourably. This circumstance is so singular that, taken in conjunction with what we observed among the unused buildings at the seat of war converted into hospitals, in which similar bad results followed, it set us thinking why it should be so.

The only probable explanation which suggests itself to our minds is this—that there must exist in new buildings, and for the same reason in buildings unused for habitation, some damp miasma which must act injuriously on the wounded. What the nature of it may be we are not prepared to say, but that some such cause exists for the ill success attending them we feel certain. In some of those we saw, *e.g.* in some of the churches, holes had been made, accidentally or purposely, in the roof and walls, which allowed of a fair amount of air circulation through; still bad results followed. Again, in some private houses where the wounded were lodged the same occurred; but in this case it might almost invariably be traced to a dislike which either the patients or their attendants had to



the admission of air. Where the ventilation by windows and doors was well managed, in them, as a rule, the results of treatment were favorable. This subject is, we venture to think, one which deserves some investigation, and we should be very glad to hear the opinions of those who have had larger opportunities of observing, as to whether the view we have expressed may not give the true explanation of why, in some buildings (*cæteris paribus*), the patients recovered so favourably, while in others the results were so fatal.

So far as the *treatment* of the cases is concerned, nothing absolute can yet be known regarding the rate of mortality among them as a whole, but it is abundantly clear that the plan generally acted upon has been both a scientific and a successful one. It appears to have been throughout the aim of the surgeons to trust very much to nature; to secure rest as much as possible; cleanliness by the adoption of frequent dressing and washing of wounds; to give as little actual medicine as was really necessary; and to secure a full supply of wholesome food. These conditions, with a well-ventilated room and good nursing, have yielded unusually favourable results. Where from any cause this plan could not be fairly carried out, success has been diminished.

With respect to *nursing*, we cannot say much; but we everywhere heard the conduct and usefulness of many, indeed, all those English ladies who have so



nobly gone out to help, spoken of in the highest terms.

The work is undoubtedly, as has been well said, "disgusting and divine," and those who have done, and are now doing it, deserve the highest praise. Such labour is a very different matter indeed from the dilettanti work at home with which so many self-complacent young ladies like to be amused, while at the same time flattering themselves that they are doing a noble work. We could well dispense with these, but for such nurses as those at Sedan we cannot be too thankful.

The organization, or, more correctly speaking, the want of organization of the English National Society, is a point about which we should like to have said a few words; but we will only remark that in our opinion a comparatively small amount of benefit has been derived from the enormous fund which the English people have so liberally and heartily given for the benefit of the sick and wounded in this terrible war.



