

VII

THE SURGEON AND THE HOSPITAL IN THE
CIVIL WAR

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THE SURGEON AND THE HOSPITAL IN THE CIVIL WAR

I. BASIS OF THE PAPER

INTRODUCTION

IN earlier, less scientific, and less strenuous days, the task of the doctor was not to give papers, but to give doses. As far back as about 1845, when I first gained the right to join a medical society, I found in that body of savants a practitioner who spoke of his "basis of practice"; and when I inquired what he meant by a "basis of practice," he replied, "a medicine of which I add a portion to every prescription I make." When I still confessed an inability to recall the remedy applicable to the treatment of every disease, he informed me that it was Prussian Blue. I much doubt if he knew that his "basis" was a preparation of iron, but if he must have a specific, he might have done worse, barring occasional incompatibilities.

Sir Walter Scott relates that stopping for the night at the inn of a small Scotch village, his servant became violently ill. Enquiring of the boniface if they had a doctor, he was told, "Yes, and a very good one, too." When the doctor appeared, he proved to be nothing other than a former and very ignorant servant of Scott's.

"Why, Sawney," said Scott, "you a doctor? And they say here a good one, too. You know nothing about medicine. How do you manage it?"

"Just twa simples, Sir Walter, calomy and laudamy."

I came into the profession when calomel was almost a "basis of practice," with laudanum a fair second. I have lived to see mercurials restored to favor, and employed in every system of practice, though no longer given in heroic

doses; opium, in some of its many preparations, is used in almost every form of disease that we treat. I seem, therefore, likely to go out as I came in, with "calomy and laudamy" at the front.

EXPERIENCE AND AUTHORITIES

I do not intend to-night, however, to deal with the amusing side of experiences completed nearly two generations ago, but to put on record while the memory is still fresh, some account of *THE SURGEON AND THE HOSPITAL IN THE CIVIL WAR*, as an important part of a heroic episode, as a suggestion and a warning, against the coming of other wars; as a personal contribution to the medical history of our country.

In a sketch based in some part on memory, in greater part on records which I made from day to day, during the Civil War, the personal equation cannot be altogether neglected. Forty-one years have now passed since I laid aside the saddle-bags and sulky, the tooth-key, Pancoast's Surgery and Dunglison's Cyclopedia of Medicine, incident to a country practice, and became an army surgeon. For three eventful years from September, 1861, to November, 1864, I served in the Western army under Buell, Grant, Rosecrans, Sherman, and Thomas.

Throughout this paper I shall refer frequently to the history of my own regiment, the 41st Ohio Volunteer Infantry, both because it is the one of which I know most, and because it was a fighting regiment, of which half the men at the end of four years' service were dead or discharged for disability. I shall draw frequently on my personal experiences in the war, for that experience is perhaps a fair example of the demands made upon the surgeon, and the place he was called upon to fill in the war.

Upon some phases of the subject we have a basis in the statistical and other publications — such as Phisterer's familiar book; the publications of the Surgeon-General's Office; and the searching work of the President of the Military His-

torical Society of Massachusetts, Colonel Thomas L. Livermore. I shall not much deal with statistics, or, indeed, with generalizations in this paper. After thirty-nine years, it is unlikely that there will be an entire consensus of recollection as to the army medical organization and service, among all who participated in the surgeons' work. And there were probably some variations within the various military departments, east and west. Still I suppose that most of my hearers who served either as field or as medical officers will remember experiences like my own.

PRIMARY DIFFICULTIES

The first difficulty in the medical service of the war was an absolute inability to imagine that it could take on such dimensions or last so many years. Neither North nor South for a moment supposed that they were entering upon one of the greatest wars of all ages; a conflict in which more than 3,000,000 soldiers would appear on the field of action. The regular army had no experience of actual campaigns in the field, except the Mexican War; and the Medical Department was no better or worse prepared than the rest of the force.

The second difficulty was the slowness of the Treasury machinery to prepare for the purchases of great quantities of medical supplies. Not till 1862 did the paymaster scatter the green promises-to-pay over the whole land — "like leaves in leafy Vallombrosa." When this mighty propelling power began to move, all the wheels began to turn. True, the whole North was fired with the spirit of a noble patriotism, and an all-pervading and unconquerable determination, at any sacrifice, to save the Union. But only unceasing exertions of the Treasury could provide food, clothing, and arms for a great army, and keep it supplied on the field with ambulances, tents, medicine and apparatus, and invalid comforts. This was part of the task to which the North bent all its tremendous and resistless energies for the next four years.

The third difficulty was the enormous number of men who had to be treated, both for disease and for wounds. In Straight's Alphabetical List of Battles, page 195, he says that the report of the Assistant Adjutant-General of the United States gives the number of our killed and died from wounds in the Civil War at 110,000, and the deaths from all causes at 350,000. No record is available of the total wounded, or the total sick. Accepting Livermore's estimate that the number wounded was two and a half times greater than that of those killed or dying of wounds, and that each soldier was on the sick-list five or six times, — statements essentially in accord with my own experience, — we should have 295,000 cases of wounded to treat. Multiply our 2,000,000 individuals enrolled as soldiers in the Northern army by the moderate number of four, and we get 8,000,000 cases of sickness treated in regimental and general hospitals, besides the 275,000 wounded. To care for this innumerable host was the work of the Medical Department.

As by far the larger number of these cases were to be treated in regimental hospitals, the manner in which these were organized, and how they might be made more efficient, became matters of much importance; but first, we must consider the medical personnel.

II. THE MEDICAL OFFICERS

APPOINTMENT

Leaving out of account the naval service, the usual military unit was the regiment, in which the medical officers were a surgeon and an assistant surgeon. In Ohio, from time to time during the war, the surgeon-general of the State gave notice that there would be held at the State Capitol an examination of physicians desiring to enter the medical department of the service. The examinations were written, thorough and full, so

far as our knowledge of medicine and surgery extended at that time. At first it was required that surgeons should be graduates of ten years' standing; assistant surgeons, five years.' These requirements were materially modified as the war went on and the difficulty of securing suitable men increased.

Besides the regimental surgeons there were appointed, on examinations ordered from Washington, surgeons and assistant surgeons United States Army (U.S.A.), and surgeons and assistant surgeons United States Volunteers (U.S.V.).

The number of army surgeons was considerable. Ohio had 198 regiments of infantry and 13 of cavalry in the field; and the records show that during their term of service these commands averaged four and a half medical officers each. Besides these officers a very considerable number of so-called acting assistant, or contract surgeons did duty, chiefly in hospitals, batteries, or detached commands. To provide medical officers for the 210 Ohio regiments during their term of service would require 950 persons; if to this number we add, as a low estimate, 50 contract surgeons, not less than a thousand Ohio physicians entered the service during the war.

Taking the number of enlisted soldiers from Ohio, — 813,000, — we have a medical officer for every 813 men enrolled. If we apply this ratio to the 2,000,000 enrolled in the whole army, we shall have not less than 6300 surgeons and assistant surgeons who served a longer or shorter period on field duty. This does not include the large number of physicians not commissioned, but employed when needed, who worked chiefly in the general hospitals of which I shall speak later; nor the naval surgeons; nor volunteers in times of stress after a fight, or where wounded men were received in cities.

During the latter part of the war, while many able men came forward, it was inevitable that the professional standard should be lowered; some surgeons, as I know from personal observation, were men of very limited experience and even recent graduates. Only the impossibility of securing experi-

regiment was a part, were ordered out on to an open field, half a mile from the ridge three hundred feet above us, and in fair sight of it. We were standing at rest in close columns, and supposed ourselves out of range from their fire; as our troops had for some days been crossing the ground unmolested. But to our surprise the rebels opened fire and killed two men, wounding six more. I ordered the ambulance to carry the wounded men into some second-growth timber near by, out of sight of the enemy, where an assistant surgeon and myself applied temporary dressing. While we were thus engaged the bugle sounded the order to move; as soon as I could leave the assistant to finish the work, I started out of the woods to join the command.

I was riding a cream-colored pony, wounded and captured at the battle of Mill Springs, Kentucky, when the rebel General Zollicoffer was killed, and General Thomas won his first laurels in the war. The pony knew as well as I did which way the balls came from when under fire, and always turned tail to the enemy. The firing had ceased, and I stood a moment looking for our men, who by this time had gone back a hundred and fifty yards to the rear, out of fire, and were stacking arms. A ball or two dropped near me, and then I suddenly found myself the target for a volley which our men estimated at fifty shots. As they fell, *pat, pat, pat*, all around me, I threw myself forward, hugging the pony's neck most affectionately, while he put in his best jumps for our line, where the men stood cheering like mad at the doctor, who for once was getting it all to himself. Some of you know how it is yourselves; when you are in a body of troops, the balls don't seem so unpleasantly personal, but where there's no one else, you know it's you they're after. I escaped unhurt.

STONE'S RIVER

Out of the many experiences of three years' warfare, let me speak of what the surgeon saw in three of the decisive battles

of the West. Stone's River was fought December 31, 1862. The divisions on our right had been driven back in succession, and thousands of our men were stampeded and driven to the rear. By noon we had received at our division hospital two or three hundred of the wounded. Among them were a number of rebel soldiers who were lying side by side with our men, and receiving the same care.

In front of our hospital, looking towards our right wing, were open fields extending a half-mile. By noon straggling men began to appear on this open ground, and soon it was alive with them. Behind them could be seen a line of perhaps two hundred rebel cavalry, while we estimated our stragglers at two or three thousand, nearly all of whom carried their muskets. I remember declaring to those around me that if our men would only halt and form a line, they could instantly check the rebel pursuit, but they came steadily on, driving our men through and beyond our tents and capturing our hospital.

I made my green surgeon's sash as conspicuous as possible. My servant brought my horse to me at the house which was our headquarters, and I was holding the bridle-rein. Four rebel cavalymen rode up and one on foot carrying a saddle. This man, with a bitter oath, seized the rein and demanded my horse. "You can't have him. I am a surgeon and this is a hospital. We are taking care of your wounded. Lieutenant, go in and see for yourself." He went in and came back, saying, "Yes, it's true; go in, Tom, and see yourself; you'll have to give the doctor his horse."

A number of men had been killed and wounded about the hospital grounds. I prepared, under the protection of a rebel sergeant, to gather them up. A half-hour passed. The rebels were plundering our tents, when suddenly one of them called out, "Here come the Yanks. Get out of this, if you don't want to be captured." It was a glad sight to see our cavalry coming on in line, driving the rebels before them. The rebels

threw down the fences in their way, and quickly retreated some distance beyond our hospital, our men following in hot pursuit. Then the rebels made a stand, and both sides prepared for a fight. The fences were levelled and line of attack formed. A chaplain was with me, and we led our horses into one of the negro quarters near the house. Then I saw what I think is the grandest spectacle in war, cavalry charging. The balls occasionally struck the house we were in, and when I said I was going out to have a fair view of the fight, the chaplain remonstrated, but I said, "It may be the only chance I shall ever have to see a cavalry charge," and it was.

I was near enough to our line to hear the orders given "Walk! Trot! Draw revolver! Take aim! *Fire!* Return revolver! Draw sabre! *Charge!*" Then down they went, every horse plunging forward, every man yelling like a madman, every sabre flashing in the bright sunlight. I could see the wounded falling from their saddles. It was a never-to-be-forgotten sight. But the rebels outnumbered our men, and we were driven back. Before the rebels could capture our hospital again, a reinforcement of our cavalry came up. A new line was formed, there was a short fight, the rebels were driven from the field, and the day was ours. All the afternoon and the whole night through, the ambulance brought a steady stream of wounded to the hospital. We held the battle-field, and it was my lot to remain for forty days on duty at the general field hospital.

CHICKAMAUGA

I was on duty with my regiment at the battle of Chickamauga, September 19 and 20, 1863.

General Rosecrans had, with a great effort and an all-night march, closed up with his scattered forces, and fought one of the most stubbornly contested battles of the war. Of the 115,000 troops of both armies engaged, the losses were about 33 per cent. At 3 P.M. of the second day's fight came an order

to evacuate the hospitals, take as many as possible of our wounded with us, and retreat to Chattanooga, eight miles distant.

General Rosecrans had crossed the Tennessee with some flourish of trumpets, apparently thinking that he had Bragg on the run. After our long line with our wounded men had retreated a mile, we were halted, and I counted thirty-nine loaded ammunition wagons filed into the line in advance of us. This confirms the statement of General Thomas in his report of the battle that if the ammunition had not been ordered off the field by his superior officer, he would have refilled his cartridge-boxes and held the field. I well remember a surgeon asking me what I thought about it all, and replying:—

"Woe betide the man,
That ever he was born,
That did n't draw the sword,
Before he blew the horn."

Thirty-two years later, September 20, 1895, I stood once more upon the battle-field of Chickamauga. Once more it was the scene of a great concourse of men, gathered from distant North and sunny South. But this time they met, not to engage in mortal conflict, but to unite in dedicating this battle-field as a great National Park, where side by side lay the honored dead of both armies.

"After life's fitful fever, they sleep well." Forever shall their graves be tenderly cared for, and what was once a field of blood, shall blossom with the flowers of peace.

BROWN'S FERRY

After our defeat at Chickamauga, our army fell back to Chattanooga; General Rosecrans had abandoned our hold on Lookout Mountain and with it the direct route to Bridgeport, our nearest base of supplies, compelling us to haul over a rough mountain road. We were on half-rations, sometimes on

one-third. We were practically in a state of siege. Hooker was coming up from Bridgeport to open the "cracker line"; but the Confederates entrenched on Lookout Mountain could prevent him from getting to the river at an available point, or crossing to join our army in Chattanooga. Some plan must be devised to meet this emergency.

Grant arrived in Chattanooga October 28, and three days later a plan suggested by General Rosecrans was set in motion. At my own request I was ordered to accompany the expedition, which was to be a night attack on the pontoon boats.

I now quote from a letter which I wrote to my boys the next morning.

41st Regiment, O. V. I., Tennessee River,
nine miles below Chattanooga,
Tuesday morning, October 27, 1863.

MY DEAR BOYS:—

I write you from the river-bank, with my hospital knapsack my writing-desk. But this morning is the fastest in military matters which I have ever known since I have been in the army, and I must sketch it to you just as it is before me. . . .

About five o'clock yesterday afternoon I received an order from Brigade Headquarters, that "One surgeon or assistant surgeon will accompany each regiment in the march to-night." It was dark when 175 men out of our regiment, who on some pretence had been previously detailed, and ordered to have cartridge-boxes filled up to sixty rounds, were ordered to be ready to go on a march without blankets. No intimation was given as to the nature of the service. As the night wore on, it became known that a boat expedition was on foot.

I was called up at 1 o'clock A.M., and found a detail from each regiment in our brigade waiting to march. It was 2 o'clock A.M. when we got down to the river. Here a flotilla of fifty pontoon boats awaited us, and slowly we got on board. The boats were twenty-five to thirty feet long, and about

seven feet wide, but shallow. On board of each twenty-five men embarked, with five rowers and a steersman to each boat.

It is a moonlight night, but fortunately cloudy, and we gladly see the fog, which hangs over the river, thicken, and the dark shadow of the forest, skirting the right or north bank of the river, widening and throwing its friendly protection out to shield us even partially from observation. We are 1500 strong, bold, resolute, daring men, with enough electric fire among officers and men to kindle enthusiasm for any required deed of danger or daring. But night attacks are notoriously uncertain, and ours is no exception. I think it all over in quiet reflection as we float down, and make up my mind that some of us are pretty sure to sink in the waters of the Tennessee before the expedition is over.

It is understood that after we have descended two miles, or two and a half, the rebels hold the south side of the river with their pickets, and that we are liable to be fired upon at any point below that. Perfect silence is enjoined. I sit beside one of our captains, facing the south bank, and waiting for the first gun from the enemy. After two miles our oarsmen ceased rowing, and we floated still and silent down the rapid stream.

One of the boats near me struck a snag on the shore, a man is caught by the collar of his blouse, lifted out of the boat and dropped into the river. From the boat comes a sharp cry for help. We push for the spot, but the man has already reached the shore. "Go along with your old boat; I 'm not half drowned yet." A quiet "All right," and again with muffled stroke we move on.

General Hazen is in the van, directing in barely intelligible voice, and calling out clear and low, "Close up! Close up!" For the boats are straggling as they move at different speed, and when we make our landing our boats should be together, that we may not be beaten in detail. My head drops down upon my arm; I find room between the legs of the oarsmen,

drop upon the bottom of the boat, and sleep sweetly and soundly. We have floated miles while I slept. We have descended nine miles by the river in just two hours. There is the sharp rattle of musketry as we turn toward the left bank. I fully awaken only after several shots are fired from the shore, to find the balls whizzing over and around, and striking the water close to our boat. "Push for the shore! Push for the shore!" The oarsmen pull heavily at the oars. Our boats have dropped a little below our intended landing, but we reach the bank and leap ashore as we may. The company in our boat is formed instantly, and rushes up along the bank to reach our proper position. Day is just beginning to break, but objects are confused at a short distance.

We are at Brown's Ferry. A few feet above the water there is a narrow bench of level ground 100 to 150 feet wide, above which towers a hill ascending at an angle of forty-five degrees. At this landing a ravine terminates, which cuts through the ridge I have described, and a road comes down along it to the water's edge. On each side of this road is the high hill. In going back along this road 500 yards, you come out upon the broad valley beyond. Stopping to dress a wounded man I get behind the regiment. I had not gone up more than two hundred yards, when I came upon a squad of sixty men of the 23d Kentucky holding the road, and although ten minutes had hardly elapsed since the landing, they were already cutting down trees to build a breastwork. I had only ascended a little distance when a fierce fight began at the point I had just left. I could not see it in the gloom, but I could hear the short, shrill yells of the rebels, so different from the cheer which our men use. Crack upon crack came the musketry. I could hear our men falling rapidly back; the rebels had got upon the opposite hill, and as our men retreated, the rebel shots crossed the road and came thick and fast around us. Our men threw out skirmishers to the right along the precipitous side of the hill to the right of the ravine, and the whole force

pressed forward with furious cheers, and moved up over the rocks, and up the almost perpendicular hill down which the rebels in the same order were advancing but a moment before. No man could guess what force the rebels had, or how soon we might run upon a line of battle which would sweep us down the hill like chaff. But the officers, who had been made fully aware of the ground to be gone over, pressed on at the best speed they could make, and in a few minutes more they reached the top of the ridge on this hill. Meanwhile our detachment of 600 men with which I had landed had moved up the precipitous path and reached the top of the hill on the left. The perpendicular ascent was not less than 300 feet. Great boulders, rocks, rubbish, and underbrush were in their way. Along this ridge, or razor-back, a few feet wide, our men were posted when I reached them. Of course, our regiment with Colonel Wiley is in the advance; the 6th and 24th O. V. I. and 5th Kentucky follow. The top is scarcely two yards wide, and in front again descends rapidly, but it is not so steep as on the river side. Our skirmishers form and push down the hill through the trees and underbrush. The rebels form rapidly, and, probably imagining our force to be small, make a furious effort to take back from us the ground we have gained. Our skirmishers fall back for a moment, but soon drive back the enemy, who, as the daylight advances, are to be plainly seen in the broad valley below, and can be heard giving orders for a rapid retreat. The day is won. But to secure ourselves in our position, our men throw up quickly a breastwork of small trees hastily cut down, loose stones, and earth scratched up with their tin plates.

As soon as the position was secured, another act began. As I sat fronting the ferry, a crowd of men appeared on the opposite shore. At half-past 8 A.M. a pontoon bridge, made with the boats which carried us down, started from the bank. As it was pushed into the river, straight as an arrow, I thought how savage Indians of the olden time, watching its progress

from the shore, would have thought it some wondrous animal, pushing itself across the water, and bearing upon its broad back a thousand strange and unknown men, coming to drive them from their hunting-grounds. At 4 P.M., I crossed the river upon this bridge, capable of ferrying over a great army. And over it, a day or two later, Hooker coming up from Bridgeport with the Eleventh and Twelfth Army Corps, would reëstablish our "cracker line," and bring hope and relief to our starving army in Chattanooga.

THE SOLDIER'S END

MILITARY EXECUTION

No medical experience or interest could prevent the fatal result of thousands of wounds and diseases, which under more favoring circumstances could have been cured. I have seen death in many forms — once and once only in its most dreadful form, a military execution. A deserter had been brought back from the North, tried and condemned to be executed. Twenty thousand men were massed upon three sides of a hollow square. Around this square he passed, his arms secured behind him, soldiers with bayoneted muskets before and behind him, the band playing the Dead March, while the guards kept time to the music, in the sight of all the soldiers. Apparently he had been thoroughly drilled, for he was keeping step with the guard, I turned to the officer sitting on his horse beside me, and exclaimed, "See that man unconsciously keeping time to his own death march." He looked from side to side, apparently hoping up to the last moment for the reprieve which was never to come; the guard stopped beside his coffin, his back was turned towards the firing squad, the lieutenant in charge dropped the handkerchief, the fatal shots riddled his body, and he fell dead across his own coffin.

A NEGRO SOLDIER'S GRAVE

Later on the soldiers came to speak of the fatalities of the war, and the loss of lives, especially of the enemy, with the utmost unconcern. The Southerners had buried a great number of their men in a vacant part of a large old cemetery in Atlanta. As was usual in such cases, the graves were crowded close together. As I went into the cemetery one morning, I met one of our soldiers coming out. Pointing back over his shoulder, he drawled, "I guess the rebs planted about three acres of their fellows over there."

In a corner by themselves they buried their slaves. I copied and preserved some of the inscriptions on the rough headboards.

"Slave, property of J. T. Gilman."

"Slave, in Government employ."

"Tom, a slave."

Among these humble graves was one with an inscription which I never forgot: —

"Lieutenant-Colonel J. B. Kerr, 74th Illinois."

They buried him there beside the despised slave. If their purpose was to dishonor him even in death and the grave, they failed, for no doubt he would have wished to lie, like your own hero, Colonel Shaw, among those lowly ones for whom he gave his life.

A SOLDIER'S FUNERAL

Yet out of the many funerals that I have known, that which comes most closely to mind is the first military funeral in our regiment. Among my army letters I find an account of it, written at the time, as follows: —

41st Regiment, O. V. I.
Camp Wickliffe, Ky.,
December 21, 1861.

MY DEAR WIFE: —

"We shall never get there," said a soldier in my rear.
"We shall all get there, and sooner than most of us desire,"

I said to the chaplain as we rode together at the head of the column. Dirge, mournful and slow, men without arms, marching with the soldier's measured tread, thoughtful or silent, or speaking in suppressed tones of families or loved ones at home, eight men with their muskets reversed, and then a coffin draped with our country's flag, the band and the long array of officers and men that make up our regiment. It is near the close of the day, cloudy and sombre, and which at home would assure us of coming winter near and earth soon to be covered with snow. All around united to render it a solemn and impressive hour. A march of half a mile along a gentle rise and we turn into a cultivated field; a few rods farther, and the bearers halt beside a small oak, beneath whose leafless boughs is the open grave that is to receive all that remains of one of our regiment, who was the first to answer with his life his country's call to arms. The regiment is formed, the coffin is lowered, the chaplain makes some very appropriate remarks, followed by the reading of the Episcopal burial service, and closing with a fervent prayer. "Earth to earth, ashes to ashes." Three volleys are fired over the open grave, and just as closing day merges into twilight we turn slowly away and retrace our steps toward our camp. My thoughts wander away five hundred miles to the home where my own loved ones sit at the hearthstone, and I recall again, as I often do, the plaintive words —

"When I remember all the friends, so linked together,
I've seen around me fall like leaves in wintry weather,
I feel like one who treads alone some banquet hall deserted,
Whose lights are fled, whose garlands dead, and all but me departed."

THE COMMON SOLDIER

In death and in life I have had the opportunity which comes only to the surgeon to see the real character of the common soldier, to whom let us render our highest praise, our most tender memory, and our undying gratitude, for his un-

flinching courage and matchless bravery on a thousand battle-fields; and for the even greater heroism with which he endured days and weeks of untold suffering, and, far from home and loved ones, faced the one invincible enemy. At Harvard Memorial Hall is a splendid stained-glass window, put up by the class of '61 in memory of their soldier classmates. The inscription below is simple, but who can read unmoved the words,

"LAETI PRO PATRIA AD ARMA" —
"Joyful the battle for our country."

the tent turned back, and this was a ward, open the whole length, and was assigned to a surgeon. My ward had 70 cots, and at times they were all occupied, but 50 or 60 patients were the usual number. After breakfast in their mess tent, the surgeons went to their wards, and, attended by nurses with dressings, prescribed for and dressed their patients. If there were cases likely to need an operation, they were carried to an operating tent. Here the surgeons met, consulted, and performed the operations decided upon. Nearly all our 200 capital operations were cases sent back to us from the front with the hope of saving the limb.

As fast as our patients were thought transportable, and sometimes unavoidably before that, they were sent back to Chattanooga, and thence to Nashville, Louisville, and on north to their own States. As the army moved to the front, the wounded and sick must be pushed in the opposite direction to make room for the recurrent wave of the disabled always moving to the rear. Every few weeks came an order to move our hospitals forward, so as to get nearer to our army, slowly fighting its way down to Atlanta. This made it necessary to send all our patients to the rear at once. At such times we were usually furnished, for our worst cases, two or three passenger cars fitted up as hospital cars, with the cots suspended on rubber rings. The rest must be put in box cars used to bring down army supplies of all kinds.

On the campaign, first dressings were applied and primary operations usually performed at the division hospitals. But after an engagement these hospitals must follow their divisions as they advanced, and be prepared to care for the wounded in the engagements constantly occurring. If the wounded could not be put on trains for Chattanooga in a day or two, they were sent back to our hospital in ambulances. If, as happened repeatedly, two or three hundred came back in one day, for whom they had time to do very little in front, some of their surgeons came with them and remained until they were attended to.

Never before had the wounded of an army received the attention and care given ours: but the immense proportions of the conflict, on so many battle-fields, often made it impossible to give our brave men the prompt and thorough care they so richly deserved. And still more helpless we would have been but for the aid given us by that noble band of Northern women, the Ladies' Aid Society. They filled a thousand gaps left by the Medical Purveyor's Department, and gave the surgeons untold help on the field, in the regiments, and in the hospitals.

COOKING AT FIELD HOSPITALS

Where great numbers of wounded and sick were to be cared for, even with the best we could get on the field, we often fell short of many things we greatly needed. Where there had been large loss of blood, and suppuration from extensive wounds, the patient's only chance of recovery was in having nourishing and appetizing food. The problem, therefore, of obtaining and preparing a suitable diet was one of the most serious and difficult ones confronting the surgeon.

I found at the field hospital while we were on duty at Marietta, Georgia, that, while there were cooks and a "cook-shanty," everything was done in a haphazard way, and there was no one to hold the cooks to responsibility. I made repeated complaints to the surgeon in charge, but in vain. Every surgeon was doing all he felt able to do; finally, I reluctantly agreed to take the cooks in charge for a time if allowed full control. I called the eighteen cooks together, and told them that they were now under military rule, that I was their commanding officer, and disobedience to orders would be followed by what they most dreaded, — an order to join their regiments at the front.

I next proceeded to investigate the condition of affairs. Much of the regular army ration was unsuitable for sick men, and the cost of each ration, which was forty cents per day per

man, was commuted, that is, credited to the hospital, and the commissary issued any available supplies on requisition to that amount. So that if we had 600 patients, we could expend \$240 per day for food supplies alone.

I found that the patients were not being as well fed as the cooks and nurses. There were with us two ladies from the Sanitary Commission, whose help had been refused by the cooks, but whom I at once put in charge of that part of the work requiring the most skill; and thereafter their services were invaluable.

The next morning I found that the head cook had wilfully neglected my orders: I made written charges to the surgeon-in-chief, proved them, and the man was sent at once to the front. The next day his successor tried the same experiment, and had the same experience. The third day a tall Kentuckian presented himself, saying, "I'm the next man; tell me what you want done, and I'll do it. I don't want to go to the front." This ended my trouble with the cooks.

To my surprise I found a large and ample supply of commissary stores which had not been fully reported to the surgeons. These were put freely into use, and conditions began to improve at once. Surgeons had been directing special diet at random, not knowing whether there was any supply to meet their demands. To remedy this, and to provide for a larger use of what we had, I made out and sent to each surgeon a bill of fare, from which they could order what they required. This bill of fare was changed every few days, and the diet for all patients was much improved.

I have preserved one of these bills of fare, and it may be of interest, as showing what could be done under favorable conditions.

BILL OF FARE.

FIELD HOSPITAL,
MARIETTA, GEORGIA, AUGUST 10TH, 1864.

Breakfast.

Mackerel, Cod Fish,
Roast Beef,
Fried Mush, Tomatoes, Farina,
Soft Bread, Soda Crackers, Butter Crackers,
Coffee and Tea.

Dinner.

Beef Soup, with Rice or Vegetables,
Oyster Soup, Farina, Indian Pudding,
Bread and Crackers.

Supper.

Toast, Tomatoes, Fruit,
Boiled Rice, with dressing,
Tea.

Canned fruits and jellies for cases especially requiring them.

CARE OF CONFEDERATE SOLDIERS

At the general field hospital I found eight Confederate soldiers, and had them transferred to one tent in my ward, where they received the same treatment in every respect as our own men. They were much pleased with this arrangement. I have preserved two other lists of rebels whom I treated in our hospitals at other times. They all expressed their gratitude and their surprise at the kind treatment they received: much better, as they uniformly declared, than was given in their own hospitals.

These men were uniformly thin, with ill-developed muscles; and they were very poor patients, with but little endurance. They complained of their wounds much more than our men did under like conditions, recovered more slowly, and the mortality among them was greater.

I attributed the poor physique of the rebel soldiers to the meagre diet of the poorer classes in the South, which they themselves called "hog and hominy." Every one familiar with their way of living knows that the corn bread in universal use was made of nothing but corn meal and water; and, as I often saw done, half-baked on a board before an open fire. Wheat bread was rarely to be seen among common people, and few Southern women could make it.

I always managed to have some wheat flour in my hospital stores, and we had a large iron bake-kettle called a Dutch oven, which we had confiscated somewhere. When we halted for a day near some settlement, I would go around with the flour and bake-kettle in an ambulance, often to a dozen places before I found a woman who could bake what is known as "salt-rising" bread, raised without yeast. I always tempted them by offering one-half of the flour for baking the other half. Afterwards, my hospital cook learned how to manipulate the "salt-rising," and we regularly had soft bread, to the great comfort and advantage of our patients.

A great hardship to the people of the South was the lack of salt. We were in the habit of exchanging our Commissary supplies with the natives for farm products, to help out the hospital diet. Our nurses reported that the people often preferred a pound of salt, costing us three cents, to a pound of coffee, costing forty cents. The last year of the war, Southern people repeatedly told me that they had been without salt for months.

VI. SURGICAL APPLIANCES

FRACTURES

Although the hospitals were in general well favored, and we always had medicines and anæsthetics in abundance, we never were properly provided with surgical appliances. Those

furnished by the Government for surgical injuries, and especially for fractures, were woefully deficient. The only splint for fractures of the femur that I could find was that known as Smith's anterior. At Stoue's River I had under treatment two of my own men with fractured femur, and two from other regiments. No one seemed able to use Smith's splint satisfactorily.

Remember, this was before the day of making extension by adhesive plaster. I called personally on the medical purveyor at Murfreesboro for apparatus. He responded in promises, which was a currency at greater discount on the field than greenbacks. From the half-inch boards of hard-bread boxes I made inclined planes, portions of bed-quilts from the supplies of the Ladies' Aid Society furnished the padding, and leather from cartridge-boxes the material for connecting the parts together. This was supplemented by three or four hours' daily close attention to these cases by the surgeon. All the cases but one were compound fractures; in three there was not more than an inch of shortening. The fourth case, an obstinate, ugly rascal who continually loosened the bandages, had much shortening and a bad leg.

AN IMPROVISED COT

It was, of course, impossible to transport with the army many things we had once considered indispensable. The surgeon, out of his surroundings, must improvise as best he could. One morning, when we had been in camp two or three days, a surgeon asked me to examine one of his cases. The man was lying on a blanket, on the ground, in the corner of a tent. He was unwashed and groaning with pain. "What would you do for such a case?" asked the surgeon after I had examined him. "The first thing I would do," I replied, "would be to give him a chance to get well." "But I don't understand what you mean." "Well, then, I would give him an anodyne at once, to relieve his agony, a thorough bath with

soap and hot water, and put him on a comfortable cot." "A cot? We have n't got such a thing." I said, "I see them all around the camp. Send out a couple of men to bring in four forked sticks for bedposts, two poles for bedrails, and short poles for slats. Then with a thick layer of cedar boughs you have a luxurious spring bed. After that will be time to think of medicine."

AN IMPROVISED SPLINT

After the battle of Stone's River, fought December 31, 1862, our brigade was in camp for three or four months, at Readville, Tennessee, twelve miles west of Murfreesboro. Here there was frequent necessity for foraging to secure rations for a cavalry force of a hundred men. Now foraging often consisted in exchanging the lives of a couple of men, and a few others wounded, for a couple of loads of hay, and fifty or a hundred bushels of corn on the ear. This may sound gruesome, but it is war. One day, while our regiment was out guarding foraging trains, one of our men was shot through the forearm. I brought him into camp, chloroformed him, and proceeded to examine his wound, with the assistance of a couple of other surgeons. Both bones had been fractured. The other surgeons discouraged any attempt to try to save his arm. My own judgment was that, although an after-amputation would be accompanied with a loss of a larger portion of the arm, yet I thought that, on the whole, an effort ought to be made to save it. I removed eight fragments of bone, temporary dressings were applied, but we had no splints at all adapted for such a case. I went to the brigade quartermaster, without whom no mechanical work could be done by our carpenter, and asked him to give me an order on his carpenter to make a splint for my case. He gave the order, and I hunted up the carpenter's quarters and explained what I wanted — that the splint was to be curved in part. He said that it would be impossible to make such a splint without

a gouge, and that there was no such tool in the brigade; though it was possible the blacksmith might be able to make me one.

Returning to the quartermaster, I got an order on the blacksmith to work for the surgeon: appealing to the blacksmith, he said that he had no steel among his supplies, and that the gouge could not be made without it. Looking around to see what I could do next, I saw his scrap-box, and, turning it over, I found an old file. "There's your steel." "Oh, I did not think of that; but it is useless for me to make you a gouge, for there is no grindstone in camp, and it would be good for nothing when you get it." "Well, you make the gouge, and I will try to find some way to get it ground."

With hammering and filing, the blacksmith put it in the best condition in his power. Then I went to the brigade headquarters, and got a permit for two men to go outside of camp. Taking this to the hospital, I told two of the nurses to start out in the morning, and not to come back till they had that ground out to the shape of a gouge. They said they travelled miles, but found the grindstone, and returned with the tool in the best shape they could give it.

Meanwhile, we had hunted up a cedar plank which could be easily worked, and then I told the cook that he was the best man we had with tools, and that as he had time he must work out the splint, which I described, showing him that it must be curved so that the hand would fall back into its natural position. He worked at it as he had time, spoiled one or two samples, but in a day or two brought out a splint which completely fitted the arm. We had nothing to make a pad for it, so I had one of the quilts, which some Ladies' Aid Society had sent us, cut up to make a soft covering for the splint. I used the last oil silk that I had to cover it, and our best seamer secured the coverings. Thus seven or eight men and some Northern ladies had all contributed to complete that splint. But we got there. I took care that the ends of the fractured

bones were thoroughly separated and perfectly parallel, and the hand and arm were secured to the splint with light bandages. Erysipelas ensued, that we managed to subdue; some small fragments of the bone escaped, and there was copious suppuration. I thought it better to keep the man under my own observation. The wound gradually healed, and at the end of seven or eight weeks had nearly closed, and I then started him off north.

Eight months afterwards, my regiment veteranized, and after thirty days' furlough returned to Cleveland, Ohio. With them came this man, who presented himself to me, and said: "Doctor, I want you to examine me for reenlistment: I want that \$400 the boys are getting." The arm showed that every movement was perfect: flexion, extension, and rotation were complete. He said he was able to do all ordinary work with it, and went through the manual of arms as readily as any man could have done. I kept him under observation for a day or two, and then told him that if he returned with us and went on camp diet, and endured the exposure and fatigue of rank life, the arm might break out again: but that if he remained at home, it was not likely ever to trouble him again; so that for his good and the good of the service, I should have to reject him.

VII. MEDICAL AND SURGICAL NOTES

WOUNDS

For members of the profession, and perhaps for others, it may be interesting to observe some of the wounds and diseases encountered in the military hospitals. The severity of wounds depended much on the missile. Before we got into actual service we were furnished with the Springfield rifle. The introduction of the rifled musket and the elongated or Minié ball gave a longer range, more precision in firing, and greater

force to the ball, and more dangerous wounds. A wound from a smooth-bore and a round shot striking the thigh bone was often deflected with no serious injury to the bone. At the same time, a Minié ball fired from a grooved musket under similar conditions might not only fracture, but crush two or three inches of the bone.

The rebels made a good deal of use of "buck and ball," that is, a round ball with three buckshot. The buckshot, of which I saw many wounds, might disable a man at the time as effectually as a large ball, though the wound might not be dangerous. There were many charges early in the war on both sides that poisoned balls were being used, but I think the claim was eventually withdrawn by both armies.

Bayonet charges are often spoken of in histories, but that the armies rarely crossed bayonets was evident from the small number of bayonet wounds, except accidental ones, which were presented to surgeons after a battle. I think half a dozen would include all the wounds of this nature that I ever dressed. Cavalrymen would occasionally get close enough to slash each other with their sabres, but these wounds were few and far between.

TRIGGER-FINGER WOUNDS

On the one hundred days of the Georgia campaign of '64, my brigade was much of the time so near the enemy that on twenty-three nights out of the one hundred, a detail threw up a light breastwork along its front. We repeatedly slept where we were often wakened by the *zz-zipp* of the rebel balls, as they went over our heads. Thousands of men along our line were continually under fire by day and by night. Not less than from fifteen to twenty thousand of our army were wounded on the campaign.

The nervous strain of living day after day under such conditions wore terribly on the endurance of the men, and it is not strange that they resorted to every expedient to get to the

rear, where they might hope that the campaign would be over before they could be returned to duty.

Among the wounded brought from the front one day was a man, the end of whose right forefinger had been shot off, which of course disabled him from using his musket. It had not been dressed, and was burned with powder. I inquired how he got that wound. He said in line of battle. "Where was the man who shot you?" "In the rebel line, I suppose; I didn't see him." A shot from a distance could not have blackened his finger with powder, and he had unquestionably shot it off himself. On inquiry among the other surgeons, I found that out of six hundred patients, we had seven or eight cases of wounds of this finger, and it was simply impossible that so small a portion of the body should be hit so many times in the ordinary chances of battle. Most of these were undoubtedly self-inflicted.

THE HOSPITAL PEST

One of the pests of the hospital was the innumerable swarms of flies. In spite of every effort that could be made, the wounds were often fly-blown, and in a few hours came the inevitable crop of maggots. Their movement in the wound gave the patient great distress, and they sometimes assumed considerable size. To remove them with the forceps was slow, tedious, and painful. I finally concluded to try the effects of injecting the wounds with spirits of turpentine, anticipating that it might be severe and painful in its effects. To my surprise, I found it soothing and that the patients were not even aware from any sensation that it was being used. The maggots would at once leave the quarters as rapidly as possible, although they were not immediately killed. But the neatest way was to inject half a drachm to a drachm of chloroform into the wound, which killed them instantly with only a slight degree of pain to the patient. They disappeared with the discharges from the wound.

BLOOD-POISONING

What we now term pyemia or blood-poisoning, has always been a scourge of armies, and ours was no exception. At the field hospital the cases were very frequent. Statistics are unnecessary: they proved uniformly fatal: some were cases of pyemic abscess. The dividing-line between septicemia and pyemia was not closely drawn, but the cases we saw would be now characterized as pyemia. As an example characterizing the class of cases we met, on going one day to take charge of a number of patients not previously under my care, I found an intelligent man, a printer from one of our cities, with an amputation of the shoulder high up. His condition was to all appearances in every way hopeful; but in the morning, I found that he had had a severe chill, followed by very high fever of several hours' duration, and long drenching perspirations. There was then a complete intermission for several hours, when he had another paroxysm of the same character. I at first had some hope that this might be only a very severe attack of malarial fever, but the jaundiced appearance of the eye by the end of the second paroxysm plainly showed what we had to deal with. I then asked him about his friends, and intimated to him that he was in a very serious condition. He asked me earnestly if I thought he was going to die, and I then felt compelled to say that he was in a most dangerous condition; that in a few hours he was almost certain to have another return of the chill and fever, and that I thought that he then would become insensible and never recover consciousness. He then said that he was not afraid to die, but that he wished to have a letter written to his wife and daughter. In that letter he said to his wife, "Teach our daughter to remember that her father died for his country." The case ended in a few hours as I had foreseen.

TETANUS

Contrary to the general impression lock-jaw was not common in the army — certainly not in my experience. The first place that I met it was after our second battle, Stone's River, in December, 1862. Four or five days after the battle, heavy and continuous rains ensued, and a little later several cases of tetanus appeared. One in my own tents was that of a man, strong and vigorous, who had a severe but not dangerous wound in the leg. So far as I can recall, none of the eight or ten cases of tetanus that we then had among the wounded could throw any light on the reason for its appearance. A theory at the time was that the rebels were firing poisoned bullets; but this idea was entirely abandoned at a later date.

Among some patients placed under my care, fourteen days after the battle, was a man with an amputation near the shoulder joint. I asked him how he felt, and he replied: "I feel very well, but it hurts me to swallow." "Put out your tongue as far as you can." He barely succeeded in protruding the point of the tongue through the jaws. With the assistance of other surgeons, we treated him five or six days, with the same unfortunate result as in the other case. In all the battles where I was present afterwards, I do not recall having ever seen a case of tetanus. I do not think there was one in the thousands of patients we treated in the general field hospital, where I was on duty.

TYPHOID FEVER

At the head of all the fatal diseases of army life was typhoid fever. In the regimental hospital, on the field, and in the general hospitals, it was alike prevalent and fatal. With bad water, imperfect nursing, and doubtless, in many cases, the too free administration of remedies, no other result could have been anticipated. "How not to do it" had not been as well learned at that time as in our day. It was at our first winter

camp that there first appeared that new development, then and for a long time afterwards termed "typho-malarial fever." The cases began with the ordinary symptoms of malarial fever — a chill, high fever, and very copious perspiration, followed by complete intermission for from twelve to twenty-four hours; after two or three paroxysms the ordinary symptoms of typhoid fever supervened. For this condition I finally found that quinine in large doses was the only effectual remedy: beginning with the first paroxysm and giving large doses, the typhoid symptoms usually did not follow. Convalescence began at once, but was very slow and very much longer than followed ordinary malarial attacks. In fifteen days I gave twenty-five ounces of quinine to this class of cases.

The homesickness so prevalent seemed to be even more usual in this disease than in the others. I called a surgeon to advise with me in one of these cases, and after examining the man with much care, he assured me that he would get well. The man replied: "No, no, I never shall get well." When we went out the surgeon expressed his surprise that I should have been so alarmed by the case. I said, "He has a symptom that you did not see." "I examined him with great care; what can it be?" "He insists upon it that he is going to die; and my experience has been that in cases where a man is as sick as he now is, if he keeps up that idea, he is very apt to die."

SOMEBODY'S BOY

As for the ordinary case of the physical and nervous breakdown, and consequent disease, many hundreds of instances might be given. Let one suffice as an illustration. Forty miles above Chattanooga my regiment was left as train guard for all the transportation of the brigade, while the other regiments went one day's march in advance. I found at their camp a boy very ill in one of their tents, with nobody to care for him, except a quartermaster, who was himself sick; I had him car-

ried on a stretcher to my regimental hospital. He was a slender, emaciated boy of eighteen, who had a very acute attack of dysentery. When I got back to him, my nurses had given him a thorough bath of soap and hot water, and had put him on one of the temporary cots which I have described. He evidently belonged to an intelligent family.

Presently, the commanding officer of the regiment came to me and asked if I knew who the boy was. I said I did not, but that he was "somebody's boy," and he was going to die unless he had the best care we were able to give him; and not unlikely he would die in spite of every effort. The officer told me that the boy was the son of a member of the Ohio State Senate, from Cleveland, a very active and influential man, brother of a renowned naval hero. The father told me afterwards that he had urged enlistment on every hand, and that although the boy was always slender, when he came to military age and asked to be permitted to enlist in a new regiment which was to be commanded by one of his father's friends, he had not the heart to refuse him. I said if he was a good man's son, so much the better. We later became very much interested in the case. He was bright, cheerful, hopeful, and determined to survive. For two or three days he was between living and dying. Then came an order to move fifteen miles forward over a very rough and precipitous mountain road. The weather was exceedingly hot, and all day long our nurses hunted for mountain springs to get cool water for the patient. Arrived in camp at night, he seemed more dead than alive. Here a fortunate halt for several days gave time to check the disease. He rallied from immediate danger, and when a little later we came to Chattanooga he was left in the general hospital there, and eventually got home and recovered. My children have never had a warmer or more constant friend than this "somebody's boy," from that day to this known in my family as Johnny Foote.

VIII. THE SURGEON IN THE FIELD

BEHIND THE FIRING LINE

Perhaps enough has been said about medical incidents of camp, hospital, and march. The object of war is to strike the enemy with such loss of life to him that he will surrender or flee; battle is the centre of war; and just behind the actual firing line was sometimes the station of the surgeon.

When a battle was expected, the general location of the hospital was made by the military department or by the corps surgeons. It was intended to be in the rear of the ground on which the division was expected to fight, and beyond the enemy's artillery fire, one and a half or two miles in the rear of our line of battle; if possible a good supply of water must be at hand. All the tents were set up, dressings, instruments, and tables for dressing and operating prepared, and everything made ready for our work.

Three assistant surgeons and one surgeon were detailed to follow each brigade. They established a temporary depot just out of reach of the enemy's musketry fire. Here the ambulances stopped. The detailed nurses with stretchers followed immediately behind the line of battle. The wounded men, if able to walk, with the permission of their company officers hurried back to the temporary depot. Those unable to walk were carried by the nurses on the stretchers. No soldier was permitted to leave the ranks to assist the wounded, unless to carry the dead and wounded back a few yards. Temporary dressings were applied. Serious operations only were performed in extreme cases at the temporary depot. Those unable to walk were taken in ambulances to the division hospital. There the serious work began, and was continued until the best thing possible in our surroundings was carried out for every man.

EXPOSURE IN ACTION

No experienced soldier, whether he carried sword, musket, or green scarf, fails to know that the surgeons in their work of saving life often run the risk of losing their own. The Medical and Surgical History of the War of the Rebellion gives a list of 47 medical officers killed and 105 wounded while in the service, and says: "The above mortuary record, proportionally larger than that of any other staff corps, should correct the popular fallacy that in time of battle the post of medical officers is one of comparative safety." This record says nothing of the larger number of those who died in the service from disease. A Confederate surgeon informed me that on the field of battle they followed directly behind the troops, and that from that practice their surgeons suffered far more than ours.

Even with the greater precaution on our side, surgeons were often under fire. Our regimental and brigade commanders, when we were in pursuit of the enemy, were much more anxious to take the advance than were the men, and often got us into skirmishes without previous notice to the medical department. I think in this way I must have been twenty times under fire; and one instance may be instructive.

After the battle of Perryville in 1862, while we were pushing Bragg's army toward Cumberland Gap, one day just at dark we reached a point called Pitman's Cross Roads. As we halted, a native came up, and said that the rebels had two pieces of what our men called "Jackass Artillery" planted on the road a little ahead of us. This light gun could be unlimbered, mounted on a couple of mules, and trotted off almost instantly. The regiment was strung along the road and we were sitting on both sides of it. We all knew how inconsiderate the rebels were in the use of these guns, and that at any moment they were liable to make a ten-strike along our line; but the major commanding did not see it that way and that

the sooner he got us off that road the better. The delay was brief. There was a murderous shriek, and that villainous shell passed just over our heads straight down the whole length of our line. Before we had time to move, the second shot came. It seemed the first cousin to the other, and a great deal too familiar for comfort. No one was hurt.

By this time it was intensely dark, and we had to almost feel our way off the road into an adjoining field; no fires, not even a match to be lit. I got my saddle off my horse for a pillow, wrapped a blanket around me, and lay down, but the ground under me seemed to be covered with large pebbles. I pushed these aside as well as I could, and dropped asleep. And still, as I frequently awakened, shivering with cold, those tormenting pebbles seemed to grow and multiply. With the first light of dawn, I discovered what my "pebbles" were: I was lying under a loaded crab-apple tree!

ROCKY FACE RIDGE

Another example of a surgeon under fire came under my observation. On the Georgia campaign of 1864, our brigade was part of the force engaged in endeavoring to drive the enemy off Rocky Face Ridge while Sherman moved to the right to "flank them again," as the Southern people termed it. We were pushed up along the very steep hillside, while our skirmishers were still farther advanced toward the enemy, and were keeping up a brisk fire through the woods, which was vigorously returned by the enemy from the crest of the hill.

I was on duty as surgeon in charge of the field that day. Not satisfied with the way the wounded were being handled, I went up from the temporary depot to the front line myself. The skirmish line had just been relieved, and ordered to lie down. As they did so, a soldier only a few feet away from me was shot through the chest, fell to the ground, and died almost instantly.

A few hours later about four hundred men, of whom my

enced men justified their employment for the responsible duties assigned them.

Having passed the examination and been put on the eligible list, the assignments to regiments were made by the governor. Practically, I think they were largely at the request of the officers of the regiments, who selected friends who had taken the examination with the understanding that they were to be so assigned. The acceptance of a commission was voluntary; but once sworn in, only the War Department could accept the surgeon's resignation during his term of service, and his request was usually refused, if his work was acceptable.

SURGEON'S STATUS

The surgeon ranked as a major, his pay and allowances, \$165 a month; assistant surgeon, as captain, pay, \$130. Out of this he must pay for his own subsistence, horse (forage was furnished), uniform, servant's pay, etc.; all amounting to \$75 to \$125 per month, according to circumstances and economy. At first, while in camp, the sutler provided a mess table for all the officers, each paying his share of the expense; but when we got into the field we had to break up into small messes. The officers of a company went together. The field and staff usually did the same. The commissary sold officers provisions at government cost, and provided some not in the army rations.

Every brigade, division, corps, and army headquarters had a surgeon on the staff. At first in the West they were largely detailed from the surgeons of regiments on the field, where they had shown ability; and sometimes they came up on seniority; but in all cases they were detailed, not promoted to a higher rank as they should have been, leaving vacancies in their regiments to be filled by appointments from their own states. After a time these higher appointments were filled from the ranks of the United States surgeons I have just mentioned, who were, as a class, not men of remarkable abil-

ity, had never been on the field, and knew nothing of the duties to which they were assigned. The system was such that throughout the war regimental surgeons were the only officers not eligible to promotion for able and faithful service.

SUPPLIES AND HELPERS

The medical supplies for a regiment of 1000 men in the field would now be thought "fearful and wonderful." Mine filled two four-horse army wagons to the cover; a few tinctures, no fluid extracts, but fortunately a full supply of opiates, chloroform, and quinine; the rest almost entirely crude drugs. What would now be thought a fatal defect was the entire absence of antiseptic remedies. A liberal supply of carbolic acid, even, would have been an inestimable boon. But the science of bacteriology was utterly unknown. Now the army supply table is up to date in every particular.

Each regiment had a hospital organization. Every company detailed two soldiers as nurses whom the surgeons could call upon. Of course they were utterly inexperienced, and often detailed by the company commanders because of their unfitness for duty as soldiers. One nurse for each ten patients could be called for, — convalescents must assist as far as possible. At first three hospital tents, 16 × 16 feet, and two ambulances were issued to each regiment; finally, as the regiments became smaller, one of each. Three men could lie down in the ambulance, or six or eight could sit up.

Of one medicine, I should like to speak from personal and long-continued contact. Before the war I had been subject to attacks of malarial fever. At our first winter camp, alarmed at myself, I began to take quinine as a prophylactic in my own case. The hospital steward would put up fifty four-grain powders of quinine; these I carried in my pocket, and took one after each meal, or twelve grains in a day. There were months in which I certainly did not miss three doses of the medicine. I continued to take the remedy almost continuously

for two years and a half, and I never discovered any unfavorable or unpleasant result from it. I believe that it was this treatment that enabled me to carry successfully the very heavy duties that fell to my share, and to escape almost entirely the camp diseases which were such a scourge all around me.

III. THE SURGEON'S ORDINARY FUNCTIONS

EXAMINATION OF RECRUITS

A distinction may conveniently be made between the usual functions of the surgeon in camp, or on the march, and his extraordinary functions while fighting was going on. The first duty of the surgeon after joining his regiment was that of examining the recruits. It was his duty to be thorough in every respect, so that none but able-bodied men should be enlisted; but the green surgeon could have no real knowledge of the duties required of a soldier or of the demands to be made on the vitality of the men. How could he estimate the effect of the great change from civil to military life? The cry was that the war would be "over in ninety days," and the regimental and company officers urged the acceptance of every available man. The surgeon could not but be affected by the constant calls to fill up regiments and to get to the front as soon as possible. Under this pressure many men were passed who proved utterly unfit for military service, and when put on ordinary steady duty, and especially on a march, with a soldier's impediments, they were soon in hospital or convalescent camp.

The surgeon soon had the surprising experience of seeing the stalwart six-footers, the pride of their companies, ambitious men, who gave every energy to the work, among the first to give out entirely, go to hospital, and perhaps never rejoin the regiment. At the same time he would see the slender

"counter-jumper," or the disreputable, snug-built "bummer," carry his gun, accoutrements, knapsack, and rations, without flinching, on every march and in every battle. The enlistment age was eighteen to forty-five years, but many boys at sixteen and seventeen, calling themselves eighteen, were accepted. As was to have been anticipated, these boys were most of them a dead weight on the service. The men who did almost the whole of the marching and fighting in my regiment were between nineteen and forty.

It was at first supposed that men from the rural districts, with their regular habits and well-developed muscles, would prove enduring soldiers, while the city recruits of less robust build, and with more or less irregular habits, would fare ill. The recruits were a great surprise; it proved that steady farm work had not developed good legs for drilling and marching. On the other hand, the man from the city was less affected by irregular meals, labor, and sleep. He was better prepared to look out for his own comfort on the field, and proved to have more adaptation to the exigencies of the service.

My regiment was made up chiefly of young men from farming communities, whose most arduous night work had consisted in coon hunting.

THE SICK CALL

The surgeon's regular daily duty began with the morning sick call. Every morning, whether in camp or on the march, the bugle sounded this call. The orderly sergeant of each company brought to the surgeon's quarters those reporting sick. He gave a list to the surgeon, who examined each man and prescribed; the hospital steward entered the prescription on the hospital record, and if possible gave the man his medicine then and there. The surgeon on the surgeon's book reported the men according to their condition; as "to hospital," "to duty," "excused from drill," "light duty," etc.

And here at first the surgeon is sure to get into trouble. For if it is true that —

“For ways that are dark,
And tricks that are vain,
The heathen Chinese is peculiar,”—

what can we say of the army malingerer, save that he is very peculiar? At our rendezvous, on three successive mornings, men reported sick, complaining of backache and headache, and with a very heavily coated tongue, but without other symptoms. Thinking it might prove an oncoming fever, I excused the first and second lots, and then saw that they were “old-soldiering the surgeon.” Long afterwards one of the men explained the trick. The camp was surrounded by rose-bushes in bloom, and a liberal chewing of rose-leaves a little before sick call produced the effect I saw on the tongue. This is but an illustration of innumerable devices to mislead the surgeon and get excused from duty or escape the battlefield.

The hospital steward was in effect a dispensing drug clerk, and if efficient and faithful, he could be of great aid to the surgeon in many ways.

On one question, just now of special interest to the profession, I had an opportunity, with the assistance of military authority, to prove beyond reasonable doubt an important and much disputed medical theory. While at our camp of rendezvous, in September, 1861, my commanding officer, after much urging on my part, issued an order for the vaccination of the entire regiment. This was bitterly opposed by the men at the time, but they afterwards fully appreciated its value. It was thoroughly enforced, and many complete vaccine pustules and a multitude of incomplete ones resulted. The old Jennerian virus was used, bovine virus not having been introduced at that time. The result was complete immunity from small-pox on the part of the regiment, after repeated exposure, where regiments around us, not revaccinated, suffered severely from the disease.

Nominally the surgeon was supreme in his department, and could excuse from duty any officer, or soldier, or company, and even the entire command. But military necessity often dominated everything else, and when the invalids might determine the fate of a battle, even a sick man, if able to get to the battle-field and to load and fire his musket, must go into the fight if possible.

SELECTION OF CAMPS

Unfortunately the opinion of the surgeon was not always asked as to the proper camp-grounds, either when in quarters or on the march. Still more than once I saw the question raised whether the military or hospital department should have the preference of quarters which both desired to occupy, and on one occasion I participated in settling such an issue.

After Sherman's attack on Kenesaw Mountain, he prepared to “fink them again,” as the natives expressed it. This would uncover the general field hospital, and we were ordered to send our patients to the rear, and most of our effects were put on a train which I was ordered to take back twenty miles to Cartersville station, the surgeon in charge remaining to finish the work of removal.

My orders were to select suitable ground close to the railroad track with an ample supply of water, and, if possible, shade, and to set up the tents and prepare to receive patients. On arriving at Cartersville station, I at once examined the ground in both directions, and half a mile from the station found a location which filled every requirement, with a large house for headquarters thrown in. As I finished my inspection a brigade of cavalry which had just arrived to relieve the command on duty rode up.

I at once reported to the colonel in command, repeated my orders, said that this point was the only one which supplied the facilities which the hospital required, and asked permission to occupy the ground.

He replied that there was a suitable location on the other side of the station which I could have. I said that I had already been there and examined the ground, and that it was unsuitable, with poor water supply. He insisted it would answer me very well, and added that he proposed to occupy the place where we then were for his own headquarters. My reply came quickly, "Colonel Innes, I had supposed that in our army the demands of the wounded and sick took precedence of everything else. Good-morning, sir."

It was a very mad doctor who rode rapidly back to the station. Entering the telegraph office I inquired of the lieutenant in charge if he was in communication with General Thomas' headquarters. I knew Surgeon Cooper on Thomas' staff very well, and I proposed to appeal direct to him. While writing a dispatch, the operator asked if I were in charge of the hospital train, and handed me a telegram. It was an order to hold the train intact, and await orders.

As I went out, a staff lieutenant was dismounting at the door, and inquired, "Is this Surgeon Hart, in charge of the hospital train?" I replied that it was. "Colonel Innes' compliments to Surgeon Hart, and he not only grants permission to occupy the grounds he wants for the hospital, but requests that he use it." Handing him my dispatch I said, "Surgeon Hart's compliments to Colonel Innes, and please say that I have just received this dispatch. If I get orders to set up the hospital, I shall be very glad to avail myself of his kind permission." "Good-morning, Surgeon." "Good-morning, Lieutenant"; and, as we would now say, that closed the incident. Orders soon came to move the hospital down to the front at Marietta.

CAMP SANITATION

The question of camp sanitation is ever present and very serious in any army. First of all, where and how is the camp to be located? Is it temporary or to be occupied for some time?

Is there, and this is most essential, a good and pure water supply? Can the sinks be located where they will not be a nuisance and unsanitary? Is the ground dry and does it admit of thorough drainage? And can camp policing be made effective?

Near Louisville, Kentucky, we had a temporary camp on ground apparently dry, but after a rain it proved wet and soggy. I urged Colonel Hazen to get us on to dry ground. He said we should be gone in a week. I replied that if it were only for three days, it would be better to move; and he consented to do so.

On a march of Buell's army in Kentucky, in 1862, the only water supply was from large ponds partially covered with green ooze, no doubt very lively with microbes. The taste did not seem particularly offensive to me, but our horses, although they had been twenty-four hours without water, refused to drink it.

Since the Spanish-American War, much has been said about camp sanitation, as if it were a new question; and the development of the germ theory, throwing new light on the causes of disease, had shown its importance as never before. To know the cause of disease is the first step toward its prevention. With the microscope we now readily detect many of the germs of disease and especially the bacilli of typhoid fever. We had every reason to expect that a disease so preventable as this would not find its way as an epidemic into a camp where a pure water supply was possible. But with the arrival of our troops at the camps¹ at Chickamanga Park, we were given a very bitter disappointment. A surgeon of an Ohio regiment, who was there at the time, told me that in one regiment of Ohio troops there were thirty cases of typhoid fever from the use of infected water. After the harm had been done, the cause was detected and removed.

We are now better prepared than ever before to meet these

¹ Established during the war with Spain. — Ed.

questions, but when there shall be discovered some available means for purifying and disinfecting the water soldiers have to use, we shall remove the most prolific and dangerous source of camp disease.

ON THE MARCH

A very important duty devolved upon the surgeon when, after being in camp for a time, we were ordered to take the field. All who considered themselves unfit to march reported to the surgeon. Some idea of the hardships to be met could perhaps be obtained from the superior officers, though probably they knew no more than the surgeons. We had to consider the season of the year, whether the men were well clothed and shod, the prospect of full rations, and above all the physical condition and morale of the men. If all were left back who claimed to be unfit for duty, there would soon be few men left in the regiment.

Shall I illustrate one of the many numerous similar experiences? My regiment fought the battle of Shiloh, April 5 and 6, 1862, with a loss of 142 men, 89 per cent of those engaged, with the usual demoralization which follows a great loss. About June 1st, we were ordered to take the field and march south into Mississippi, and twenty-five or thirty men asked to be excused from going. I examined the first man and said, "You are not very strong, but I think you can go." "Doctor, do you think I ought to go?" "No." "Are you going to make me go?" "Yes." "Is that right?" "Under our circumstances, yes." Then I said to the men, "We are here to help put down this rebellion, and some of us will die in doing it. If we were at home, it would be a shame to compel some of you to perform even ordinary labor. But the conditions here are entirely different. There is no one to take the place of the man left behind. Besides, nearly all of you whom I shall not excuse stand a better chance to pick up and get strong again than you would if sent back to the hospitals and convalescent camps.

Of the great number we sent back to Louisville in March from our Kentucky camp, thirty-three died in the hospitals there. I will have the guns and the knapsacks of the weaker ones carried on the wagons, and put those who give out in the ambulances. You shall sleep in the hospital tent, and the nurses shall cook you as good a supper and breakfast as the hospital supplies can furnish. I have an acute attack of dysentery and the surgeons around advise me to go back, as I must take a good deal of risk in going on the field. But there is no other medical officer with the regiment, and if I leave you, then you must have a man detailed who does not know you, and cannot feel the interest in you which I do. I am too ill to ride my horse, but I will go with you in the ambulance until I can. No one shall go on the march who is not better able than I." This put a different face upon the conditions. Only a few were left behind, and the rest went cheerfully, improved, and were soon on full duty. I had to keep to the ambulance for a few days, attended to my sick, but gradually recovered.

On the march the ambulances followed the regiment, and the surgeon gave a written order for transportation to men becoming sick or exhausted. One hospital wagon for each regiment followed the brigade, carried the hospital tents and extra hospital supplies and medicine, and came up to its own regiment when the halt for the night was made. As far as possible the sick were sent back on supply trains, or if situated to do so, were left in general hospitals, of which I will speak again. It was very important to retain with the regiment men not seriously ill, until able to go on duty again. Once left behind, and sent to general hospital, even if not discharged, the hospital, or some of the many details in the rear, absorbed them.

It was at first a great surprise to see the facility with which the sick recovered on a march. I repeatedly carried men with typhoid fever in an ambulance on a march until they recov-

ered; but when pneumonia was a complication of typhoid fever, two or three days' marching in an ambulance almost always proved fatal.

When my command was once hurrying by forced marches to the relief of Burnside at Knoxville, in 1863, I found the men breaking through their shoes, till the command threatened to be barefoot. What was to be done, when we had cut off our communication with the rear? The surgeon turned shoe-master, cut and fitted raw hide, and the men of his regiment marched in sandals.

THE LOYAL MAN

On the Knoxville march occurred an incident which has always remained in my mind as an example of the necessary hardships of war.

Four days after the battle of Mission Ridge, which was fought November 25, 1863, two army corps, of which mine was one, were started for Knoxville, where Burnside was being held by Longstreet in what was called the siege of Knoxville. We travelled at first along the valley of the Hiwassee River, marching twenty-five miles a day. A boat which accompanied us on the river with supplies was soon compelled to turn back. We carried all the small rations, but fell back on the country to a great extent for our other supplies. Each brigade organized a foraging party under the command of a lieutenant, and they were directed to leave for the support of those among whom they foraged a portion of their provisions. It was a beautiful foraging country, for it had never been traversed by either army. When the lieutenant from our brigade returned one evening, round the camp-fire he related the adventures of the day.

As he came up that day to a large, evidently prosperous farm, well-stocked, the planter met him and said, "I am a loyal man, sir. You must respect my property. You have orders to respect the property of loyal men. Several of your

foraging parties have been here to-day, and they all left me undisturbed. I am a loyal man, sir."

There were a number of negroes about; those behind him were making all sorts of gestures and motions, afraid evidently to utter a word. As the lieutenant was turning away, an idea struck him, and turning and looking the planter full in the face, he asked him the crucial question, "To which government are you loyal?"

The man knew that if he should deny his allegiance to the Confederacy, when the war was over he would have no character or position in the community. The lieutenant said he turned white, as he replied through his closed teeth, "To the Confederate Government, and you may make the most of it." "Well, boys," said the lieutenant, "we shall have to go for him."

When we left the plantation we took with us, as the most valuable prize, six fine mules, on each of which the Government saved \$200 by not paying for them; all the stock on the place, cattle, sheep, hogs, and most of the contents of the smoke-house, flour, and as for chickens, we were loaded down with them. We estimated the value of what was carried off as between two and three thousand dollars.

HALTING THE COMMAND

When the army was actually in motion the surgeon had little authority over men in ranks. An illustration to the contrary may, however, be interesting. It was in our marching orders that in starting in the morning, after marching forty-five minutes, there should be a halt of fifteen minutes and so on while the march continued; but always to keep the column closed up. On a very hot day, when our army, numbering many thousands, was moving southward, after marching steadily for two hours and a half, the men and officers became greatly exhausted. We were not advancing upon the enemy, and there was no excuse for taxing so severely the endurance of the men.

I said to the major in command that I wished I could exercise the authority of surgeons in the English army and command a halt. "If you give the command," said the major, "I will obey it." Whereupon I said, "Major Williston, halt the command." "H-a-l-t," said the major. Instantly every man halted and threw himself on the ground. I did the same; held my watch in my hand, and considered. The winding road ran over rolling ground, and in three minutes those in advance were out of sight. Thousands of men were behind us; there was strong likelihood of an inquiry which might not prove pleasant for the presumptuous surgeon. In thirteen minutes I said, "Major, the men are rested, and we can go on." "Bugle, sound attention," and we swung off. As it proved, some one far in advance had also ordered a halt, and in a few minutes we had reached the column ahead of us, and the gap was closed. Nothing was heard afterwards of my experiment, and this was the only time I ever attempted to control the movements of the army.

IV. QUESTION OF OVER-DRILLING

COLONEL HAZEN'S SYSTEM

Many surgeons must have observed and deprecated a practice, which though not within their medical province, so seriously affected the health and efficiency of the men that it must be briefly discussed. I allude to the persistent over-drilling of green troops.

We are not a military nation — Heaven forbid that we ever should be. But the tide of events set in motion when the Spanish-American War began, moves on in its resistless course, and who can tell whither that tide shall carry us, or where its flow shall cease? If we are ever to have war again, we ought to learn how to diminish the inevitable waste of war, especially the waste of human life. I have referred to our 110,000

killed in battle and died of wounds; what shall we say of the 200,000 who died from disease, and of the hundreds of thousands enfeebled by wounds and disease? The history of the war will never be complete until we can determine whether we could have done or left undone anything that would have reduced this terrible roll of death.

Colonel William B. Hazen, later General Hazen, was a West Pointer, and at the time of his appointment a captain in the 8th Regular Infantry. He had served in the Indian wars in the West, and had there acquired a valuable experience. He was brave, loyal, and thoroughly devoted to the service. He had an honorable ambition that his regiment should be fitted to give the best possible service; and no doubt reasonably hoped that the efficiency of his regiment should further his own promotion. I met no other officer who devoted himself so unsparingly to all the details of the work. He had occupied every regimental position to which he was eligible, and was perfectly familiar with everything pertaining to regimental organization and work. He was a man of iron constitution, and demanded that every one should keep pace with him. He had no patience with slowness, carelessness, incapacity, or indifference. If an officer did not speedily master the tactics and all the details of duty, he soon made his position unendurable.

Nevertheless, like hundreds of men of less experience, our colonel made the great mistake of assuming that raw recruits would show the same endurance as the veterans he had commanded in his frontier experience, and urged forward by the pressure to get ready for active service at the earliest day, instituted long hours of drill and camp duty. No time was given for acclimation, or to accustom men to the great change from civil to military life.

I soon saw that the severe and unaccustomed strain was lowering the vitality of the men, and rendering them less able to resist the unsanitary and epidemic influences they were sure to meet in army life. At our camps of rendezvous I repeatedly

urged these considerations on our commander. My suggestions were always courteously received, but nothing could convince him that he was overworking the men, and rapidly and needlessly wearing them out.

REPORT ON REGIMENTAL DRILL

In many ways a regimental commander was an absolute and irresponsible despot: it may be a mild despotism, or a harsh and cruel rule: or he may order every detail of the soldier's life in camp, and totally ignore every wish and every personal consideration of the men; and from this there is practically no appeal. Nothing but such authority could maintain the discipline of an army, and save it from becoming an irresponsible mob; yet the way in which the commander exercises his authority softens many hardships or makes the service intolerable.

The surgeon has sometimes an opportunity to express an expert opinion in such matters, and General Hazen by a false movement put it in my power to record an emphatic dissent. We were encamped with the three brigades of our division: Hazen, then acting brigadier-general, issued an order to the surgeons of his brigade, — of which we were a part, — forbidding them to excuse from drill any but hospital patients. This was a gross violation of the surgeon's rights and duties; and the result was that I simply put into hospital every man whom I thought unfit to drill.

Just at this time I came on as brigade medical officer of the day. I visited both the other brigades in the division, and took occasion to consult many of the surgeons, and found that they agreed with me in condemning the excessive drill in our brigade. In the official report required of me, I ventured to say officially much that I could not have stated as regimental surgeon.

I quote from my report as follows: —

“I find in

“1st Brigade, no drill, nine sick to a regiment.

“3d Brigade, one hour drill, twelve sick to a regiment.

“2d Brigade [ours], four hours' drill, twenty-seven sick to a regiment.

“The marked difference in the amount of duty required in this and in the other brigades of the division, accounts in part for the larger number reported sick here. For in a large class of temporary attacks of camp diseases, it is the drill which worries the men and from which the surgeon is compelled to excuse them. In the 41st Ohio the absence of the drill would reduce the reported list of sick by from one third to one half in a few days.

“In my judgment the duties above enumerated, and to which is to be added frequent fatigue details, are, at least so far as the 41st Ohio is concerned, excessive, and are injurious to the health of the men.

“The pickets are now forbidden to make fires upon duty, and consequently suffer from insufficient food, and especially for want of hot coffee. That soldiers should be reduced to a diet of hard bread, raw bacon, and cold water is unendurable, except as being unavoidable.

“If this order is not a military necessity, it is a military nuisance and barbarity, which ought to be abated, as health must suffer by it, and lives be sacrificed.

“I refer here to one other effect which I think has resulted from the severe duties required, and I speak again of the 41st Ohio. It is the almost entire absence of cheerfulness and elasticity on the part of the men, and the presence of a depression of mind and deep-seated feeling of dissatisfaction with the duties, and especially with the fact that they are so much in excess of those which fall to many other soldiers in the field.

“These are elements of great importance as respects the present and future sanitary conditions of the men.”

EXPERIENCE AT CAMP WICKLIFFE

It was sometimes a painful experience for the surgeon to see the health of the men affected before help could reach them. My regiment's first two months' service was uneventful. We arrived at Camp Wickliffe, Kentucky, our first winter camp, sixty miles south of Louisville, December 15, 1861. During our stay there we had inclement weather and steady hard drilling whenever it was possible. An epidemic of measles, followed by typhoid fever, jaundice, and malaria, soon tested the endurance of the men. In thirty days we had three hundred patients on the sick-list — a number out of all proportion as compared with the other regiments around us. Ordinary attacks quickly developed alarming symptoms, and the cases showed little resistance to the onset of the disease. Their convalescence proved tedious, and a large number never recovered sufficiently to rejoin the regiment. That winter, before we had fired a gun, cost us the lives of 50 of our soldiers. During the sixty days that we remained at that camp, we sent 250 men to general hospitals at Louisville, and to convalescent camp. We went in 930 strong. We marched out with only 580 men. Of this number just 373 officers and men got into our first battle at Shiloh, May 6, 1862, six months after we left our rendezvous.

No doubt much of our sickness was due to the inevitable effects of camp life. But I have always been firmly convinced that the larger share of our sick-list that winter, the many deaths, and the unusually slow convalescence of patients was in a great measure the result of the *régime* I have described. While no one could have anticipated such serious consequences, it was just such a result as was to have been feared, and was foreseen when the regiment was being pushed to the point of its utmost endurance.

CONCLUSIONS AS TO DRILL

Nothing was gained by this continued working of the command at high pressure, a practice which doubtless was carried out in many regiments. More hours of rest and fewer of drill would have produced better results. As it was, the men always complained that they were never rested. It was not alone four or five hours of drill, harder work than they had ever before done: they had also roll calls, dress parades, reviews, camp police duty, meals, hours in every week spent in polishing arms; from reveille to taps every day was crowded full. No one coaching a green boat's crew would put them on full work for the first few days, but this is what was done with us.

I do not wish for a moment to be understood as underestimating the value and necessity of thorough and continued drill. In no other way can efficient soldiers be made. It gives the cohesion to a body of men which enables it to act as one man. It gives to officers and men courage, confidence in themselves, and in each other; enables them to stand shoulder to shoulder, and when the hour of conflict comes to withstand the shock of battle. Wisely used, the drill develops the power to endure long marches, and to bear unusual fatigue. And all this the soldier soon comes to realize himself.

Was this long, continued, and exhausting drill necessary in order to make an efficient soldier? General August V. Kautz, in the *Century Magazine* for October, 1888, on this point says: "Too much importance is attached to drill tactics. We adhere to rigid lines in the ranks, and drills, and to needlessly complicated systems, when every officer of experience knows that they have no value and are not used in actual warfare. All that is ever used of the endless drilling, when in actual campaign, is the passing from column into line, and from line into column, by the simplest methods, and no other movements, no matter how favorable the ground or how perfect the drill."

I had not thought it possible that this grave mistake of overworking the men would be repeated at so late a date as the Spanish-American War. But an official copy of the order under which a regiment from Cleveland, Ohio, on its way south, was drilled while in camp at Columbus, shows that the unseasoned men were kept on the field five and a quarter hours per day, and the sergeants six hours.

V. GENERAL FIELD HOSPITALS

ORGANIZATION

The exposure and fatigue of camp life, and still more of a campaign in the field, soon brought on a large and varied crop of diseases. These increased so rapidly as to outrun the facilities for caring for them in camp, and still more so when the army was on the march. For this need general hospitals were started in great number: we used, in larger towns and cities, any large buildings available: warehouses, stores, churches, hotels, and school-houses. The farther south we went, the more desirable it became to use tents exclusively: the patients did better, and the tents could easily be moved when a new location was required. The necessary surgeons and nurses were detailed, or employed among civilians, and necessary supplies furnished from army stores.

These general hospitals were extended to most of the Northern cities, where local surgeons were chiefly employed, and to them were sent the sick and wounded of the States where they were located. They were usually barrack hospitals, and well provided to care for those requiring long courses of treatment. In fact, they became so comfortable, both to the patient and physician,—the latter becoming so attached to his patients as to seem unwilling to part with them,—that it was found necessary to send a detail of army surgeons to overhaul and shake up these hospitals; in this way the incurables were

discharged, and hundreds of men sent back to their regiments on the field.

The organization of general field hospitals corresponded nearly to that of the army. The unit above the regiment was the brigade, at first of four regiments: as the regiments became smaller, more were added; the last year and a half my brigade had eight regiments. Three brigades made a division—each brigade and division with its surgeon at their headquarters. On the campaign it was a division hospital that was organized; the three brigades probably would have twenty regiments, with twenty-five medical officers present, the rest being on hospital or other duty. The divisions would number six or seven thousand men at the time I speak of. The theory was to take care of the wounded after a battle in common. But I always endeavored to receive and care for my own men, and, as far as possible, have them brought to my own tents: this method was much preferred by the men.

ON THE GEORGIA CAMPAIGN

More suggestive than general statements may be an account of my connection with the general field hospital, Department of the Cumberland, as it was organized for the Georgia campaign of 1864. I was detailed to this hospital in May, 1864, and remained to November, accompanying the advance from Resaca to Atlanta.

We had a hundred hospital tents 16x18 feet, and as many tent-flies used as tents, with a thousand cots, a good supply of medicine, cooking arrangements, but unfortunately no provisions for bread-making, and a commissary who could procure all reasonable supplies. It was the best arranged and furnished hospital I saw on the field. The medical officers, 12 or 14 in number, were nearly all detailed from regiments, and we were expected to care for 600 or 800 patients. After the battle of Kenesaw Mountain we received 1500 in one day. Four or five of these tents were set up end to end, the ends of