

Engineer journal of the bombardment of Fort Sumter

By Capt. J. G. Foster,
Corps of Engineers, U. S. Army.

NEW YORK, October 1, 1861.

April 9, 1861. - The four-gun battery on the upper end of Sullivan's Island that was unmasked yesterday morning by blowing up the wooden house standing in front of it was situated very nearly upon the prolongation of the capital of this fort, and, therefore, could enfilade the terre-pleins of both flanks of the work, as well as sweep, to a certain extent, the outside of the scarp wall of the left flank, where alone a vessel of any considerable draught of water could lie near to the fort and discharge her cargo. It therefore became a matter of importance to provide traverses to intercept the fire along the barbette tier of the right flank, as this contains the heaviest battery, intended to operate both upon Fort Moultrie and Cummings Point, and also to prepare means for quickly unloading any vessel that may run in alongside the left flank with supplies for the garrison.

For the first purpose I commenced to prepare (for want of sand bags) a large double curb of boards and scantling, to be elevated upon the top of the parapet at the right shoulder angle, and being filled with earth hoisted from the parade, to serve for a traverse to protect this flank.

For the second I prepared ladders and runways to take in reinforcements and provisions at the embrasures rapidly, one embrasure being enlarged so as to admit barrels, and also cleared the passage around to the main gate. A large stone traverse was also commenced to cover the main gates from the fire from Cummings Point. The masons were put at work cutting openings through the walls of the officers' quarters so as to admit a free communication through them, on the first and second floors, from one flank to the other. The battery in the right shoulder angle, first tier, was also being improved by substituting a 42-pounder for a 32-pounder, cutting into the magazine wall, so as to allow the gun on the gorge to be used against the batteries, and cutting away one side of the embrasure, so as to allow the first gun on the right flank to be used in the same way.

The quantity of bread became very small, and only half-rations of it were allowed to the men. The enemy's steamers were very active carrying supplies to their batteries.

April 10. - Every one, by order of the commanding officer, Major

Anderson, changed his quarters into the gun casemates to-day. The work on the traverse progressed well. Lieut. R. K. Meade, Engineers, being placed on ordnance duty, found the supply of cartridges on hand to be too small, and took immediate measures to increase the supply by cutting up all the surplus blankets and extra company clothing to make cartridge bags. The curb for the traverse at the right shoulder angle was completed and put together on the terre-plein at nightfall, and after dark raised up on the parapet and filled with earth, which had been hoisted from the parade. The working party, under Lieutenant Snyder, increased by a large detail from the command, completed this work about midnight.

The supply of bread failed to-day, and its absence was supplied by rice obtained by picking over some damaged rice, which, while spread out to dry in one of the quarters, had been filled with pieces of glass from the window-panes shattered by the concussion of guns fired in practice.

A second battery was unmasked to-day on Sullivan's Island, nearer the western point of the island than the one last discovered. It is of one gun, and very heavy--evidently a 9-inch Dahlgren gun, or a 10-inch columbiad.

The enemy's steamers were very active at night, but no alarm occurred.

April 11. - At early dawn I detected the presence of the floating battery on the upper end of Sullivan's Island. It is situated between the end of the jetty and the steamboat wharf, where, evidently distrusting her qualities as a floating battery intended to breach the gorge wall at short range, she has been run on shore at high water, and, being left by the receding tide, has become a fixed battery. Her position gives her the advantage of sweeping with her guns the whole of the left flank of the fort, and thus rendering it impossible for any vessel with supplies to lie anywhere along this flank, while the breakwater in front protects her from our ricochet shots.

The stone traverse at the gorge has been raised to-day high enough to protect the main gate, and the traverse on the top of the parapet has been strengthened by the addition of sand bags on the top and sides, and braced in the rear by extra gun carriages. The communications cut through the walls of the quarters are finished, and all the water pipes and faucets prepared for use in case of fire. The third splinter-proof shelter on the right flank, barbette tier, is finished. These shelters are formed of the timbers of extra gun carriages inclined against the interior slope, and covered with 2 inch embrasure irons, securely spiked down. Shot and shells have been

distributed to the guns, and about 700 cartridges reported ready. The work of making cartridge bags is slow, owing to there being only six needles in the fort.

The enemy's steamers are very active carrying supplies and hospital stores to the batteries on Cummings Point.

At 4 p.m. three aides of General Beauregard (Colonel Chesnut, Colonel Chisolm, and Captain Lee) came as bearers of a demand for the surrender of the fort. The unanimous decision of the officers council was in the negative, and a written answer, in accordance, was returned by Major Anderson.

April 12. - At 1 a.m. four aides of General Beauregard (Colonel Chesnut, Colonel Chisolm, Captain Lee, and Mr. Pryor, of Virginia) came with a second letter, stating that as Major Anderson had been understood to make the remark to the bearers of the first letter, in taking leave, that he would "await the first shot, and if not battered to pieces, would be starved out in a few days," it was desired to know what importance might be attached to it. The reply of Major Anderson did not satisfy the aides, who were authorized in that case to give notice that the fire would open. Accordingly, on leaving at 3½ a.m. they gave notice that their batteries would open in one hour.

At 4½ a.m. a signal shell was thrown from the mortar battery on James Island; after which the fire soon became general from all the hostile batteries. These batteries were, as nearly as could be ascertained, armed as follows, viz.:

On Morris Island: Breaching battery No. 1, two 42-pounders; one 12-pounder Blakely rifled gun. Mortar battery (next to No. 7), four 10-inch mortars. Breaching battery No. 2 (iron-clad battery), three 8-inch columbiads. Mortar battery (next to No. 2), three 10-inch mortars.

On James Island: Battery at Fort Johnson, three 24-pounders (only one of them bearing on Fort Sumter). Mortar battery south of Fort Johnson, four 10-inch mortars.

On Sullivan's Island: Iron-clad (floating) battery, four 42-pounders. Columbiad battery No. 1, one 9-inch Dahlgren gun. Columbiad battery No. 2, four 8-inch columbiads. Mortar battery west of Fort Moultrie, three 10-inch mortars. Mortar battery on parade, in rear of Fort Moultrie, two 10-inch mortars. Fort Moultrie, three 8-inch columbiads; two 8-inch sea-coast howitzers; five 32-pounders; four 24-pounders. At Mount Pleasant, one 10-inch mortar.

Total, firing on Fort Sumter, 30 guns, 17 mortars.

At 7 a.m. the guns of Fort Sumter replied, the first shot being fired from the battery at the right gorge angle, in charge of Captain Doubleday. All the officers and soldiers of Major Anderson's command were divided into three reliefs, of two hours each, for the service of the guns, Lieutenants Snyder and Meade, of the Engineers, taking their turns with the other officers in the charge of batteries.

Of the forty-three workmen constituting the Engineer force in the fort nearly all volunteered to serve as cannoneers, or to carry shot and cartridge to the guns.

The armament of the fort was as follows, viz.:

Barbette tier: Right flank, one 10-inch columbiad, four 8-inch columbiads, four 42-pounders. Right face, none. Left face, three 8-inch seacoast howitzers, one 32-pounder. Left flank, one 10-inch columbiad, two 8-inch columbiads, two 42-pounders. Gorge, one 8-inch sea-coast howitzer, two 32 pounders six 24-pounders. Total in barbette, 27 guns.

Casemate tier: Right flank, one 42-pounder, four 32-pounders. Right face, three 42-pounders. Left face, ten 32-pounders. Left flank, five 32-pounders. Gorge, two 32-pounders. Total in casemate, 21 guns. Total available in both tiers, 48 guns.

Besides the above, there were arranged on the parade, to serve mortars, one 10-inch columbiad to throw shells into Charleston and four 8-inch columbiads to throw shells into the batteries on Cummings Point. The casemate guns were the only ones used. Of these, those that bore on Cummings Point were the 42-pounder in the pan-coupé of the right gorge angle, the 32-pounder next to it on the gorge, which, by cutting into the brick wall, had been made to traverse sufficiently, and the 32-pounder next the angle on the right flank, which, by cutting away the side of the embrasure, had been made to bear on a portion of the Point, although not on the breaching batteries.

The guns of the first tier, that bore on Fort Johnson, were four 32-pounders on the left flank. (Of these, one embrasure had been, by order, bricked up.)

The guns that bore on the three batteries on the west end of Sullivan's Island were ten 32-pounders, situated on the left face, and one at the pan-coupé of the salient angle (four embrasures being

bricked up).

The guns bearing on Fort Moultrie were two 42-pounders, situated on the right face, and one at the pan-coupé of the right shoulder angle.

The supply of cartridges, 700 in number, with which the engagement commenced, became so much reduced by the middle of the day, although the six needles in the fort were kept steadily employed, that the firing was forced to slacken, and to be confined to six guns--two firing towards Morris Island, two towards Fort Moultrie, and two towards the batteries on the west end of Sullivan's Island.

At 1 o'clock two United States men-of-war were seen off the bar, and soon after a third appeared.

The fire of our batteries continued steadily until dark. The effect of the fire was not very good, owing to the insufficient caliber of the guns for the long range, and not much damage appeared to be done to any of the batteries, except those of Fort Moultrie, where our two pounders appeared to have silenced one gun for a time, to have injured the embrasures considerably, riddled the barracks and quarters, and torn three holes through their flag. The so-called floating battery was struck very frequently by our shot, one of them penetrating at the angle between the front and roof, entirely through the iron covering and woodwork beneath, and wounding one man. The rest of the 32-pounder balls failed to penetrate the front or the roof, but were deflected from their surfaces, which were arranged at a suitable angle for this purpose. We could not strike below the water line on account of the sea wall behind which the battery had been grounded, and which was just high enough to allow their guns to fire over it, and to intercept all of our ricochet shots.

The Columbiad battery and Dahlgren battery near the floating battery did not appear to be much injured by the few shot that were fired at them. Only one or two shots were fired at Fort Johnson, and none at Castle Pinckney or the city.

Our fire towards Morris Island was mainly directed at the iron-clad battery, but the small caliber of our shot failed to penetrate the covering, when struck fairly. The aim was therefore, taken at the embrasures, which were struck at least twice, disabling the guns for a time. One or two shots were thrown at the reverse of batteries 3 and 4, scattering some groups of officers and men on the lookout, and cutting down a small flagstaff on one of the batteries. At one time during the day a revenue schooner which had been seized by the insurgents was observed lying at anchor between Sullivan's Island and Mount Pleasant. Lieutenant Snyder, Corps of Engineers, who had charge

at this time of the battery firing in this direction, directed two or three shots at her with such effect as to put one of them through the vessel and cause her to haul down her colors, the flag of the so-called Confederate States, to hoist her anchor and sails, and get out of range as soon as possible.

One or two shots were thrown at the hulks which had been anchored in the channel on a line between Cummings Point and Fort Moultrie, to be fired at night if our fleet should attempt to come in. As no person appeared on board, the fire was not continued in this direction.

The barracks caught fire three times during the day, from shells, apparently, but each time the flames, being in the first or second stories, were extinguished by a pump and application of the means at hand. Peter Hart, who was formerly a sergeant in Major Anderson's company, and employed by me at the time as a carpenter, was very active and efficient in extinguishing the flames.

The effect of the enemy's fire upon Fort Sumter during the day was very marked in respect to the vertical fire. This was so well directed and so well sustained, that from the seventeen mortars engaged in firing 10-inch shells, one-half of the shells came within or exploded above the parapet of the fort, and only about ten buried themselves in the soft earth of the parade without exploding. In consequence of this precision of vertical fire, Major Anderson decided not to man the upper tier of guns, as by doing so the loss of men, notwithstanding the traverses and bomb-proof shelters that I had constructed, must have been great. These guns were therefore only fired once or twice by some men who ventured upon the parapet for this purpose. In doing this they managed without much care, producing little or no effect upon the enemy, besides doing injury to the guns. At the third fire of the 10-inch columbiad at the right gorge angle, it was omitted to throw the friction wheels out of bearing and consequently in the recoil the gun ran entirely off its chassis, overturning itself and in its fall dismounting the 8-inch sea-coast howitzer next to it.

The direction of the enemy's shells being from the northeast, north, southwest, and southeast, sought every part of the work, and the fuses being well graduated, exploded in most instances just within the line of parapet. To this kind of fire no return was made. The four 8-inch columbiads that I had planted in the parade to be used as mortars on Cummings Point were not used, neither was the 10-inch columbiad, arranged to fire shot and shells towards the city. The hot-shot furnaces were not used nor opened. The effect of the direct fire from the enemy's guns was not so marked as the vertical. For several hours firing from the commencement a large proportion of their shot

missed the fort. Subsequently it improved, and did considerable damage to the roof and upper story of the barracks and quarters, and to the tops of the chimneys on the gorge. The aim of the guns during the day, with the exception of batteries Nos. 1 and 2, on Cummings Point, appeared to be directed to dismount the guns of our barbette tier. Those from Fort Moultrie succeeded in dismounting an 8-inch columbiad, and in striking on its side and cracking a second 8-inch columbiad, both situated on the right flank. The roof of the barracks on this flank and the stair towers were much damaged by this fire.

The shots from the guns in the batteries on the west end of Sullivan's Island did not produce any considerable direct effect, but many of them took the gorge in reverse in their fall, completely riddling the officers' quarters, even down to the first story, so great was the angle of fall of many of the balls.

Three of the iron cisterns over the hallways were destroyed by shots during the day, and the quarters below deluged by their contents of water, aiding in preventing the extension of the fire. The shots from these batteries and from Fort Moultrie, aimed at the embrasures, failed to produce any effect. None of the shot came through, although one shell exploded in the mouth of one embrasure.

A part of the guns from Cummings Point essayed to dismount the barbette tier on the gorge, and the remainder to breach the gorge, or rather the pan-coupé at the right gorge angle. At this latter point, two columbiads and a Blakely rifled gun fired almost constantly. The effect of this fire on this day was to breach around the embrasure of the first tier at the pan-coupé to a depth of twenty inches, and to put one shot through the filling, consisting of brick and bluestone combined, with which the embrasure opening of the second tier had been filled. One shot was also put through the top of a loophole window on the second tier, another through the top of the main gate, and a third through the magazine ventilator at the right of the gorge, falling between the pier and the inner wooden ceiling.

Three of the embrasure cheek-irons that I had placed in the second tier loopholes, were knocked out of place. Several of the stones that had been placed in the first tier loopholes were struck, but owing to the lead run in around them to hold them in place none were broken.

The penetration of the 8-inch columbiad balls from Cummings Point was eleven inches at the first shot--and that of the twelve-pound bolt from the Blakely gun was the same, as ascertained by measurement. The latter, however, threw its shot with greater accuracy, and with less time of flight, than the former. The distance was about 1,250 yards.

The shot from Cummings Point that passed a little over the gorge took the left face in reverse, damaging the masonry of the parade wall, coping, &c., and splintering the chassis of one gun in barbette. As an instance of strength of masonry, I may mention that one 10-inch shell from Cummings Point fell upon the second tier casemate arch, which was not covered by concrete or flagging, and so good was the masonry of this 15-inch arch that the shell did not go through, although it bedded itself, and broke off from the soffit below a large fragment of brickwork.

The night was very stormy, with high wind and tide. I found out, however by personal inspection, that the exterior of the work was not damaged to any considerable extent, and that all the facilities for taking in supplies in case they arrived, were as complete as circumstances would admit. The enemy threw shells every ten or fifteen minutes during the night. The making of cartridge bags was continued by the men, under Lieutenant Meade's directions, until 12 o'clock, when they were ordered to stop by Major Anderson. To obtain materials for the bags all the extra clothing of the companies was cut up, and all coarse paper and extra hospital sheets used.

April 13. - At daybreak no material alteration was observed in the enemy's batteries. The three U. S. men-of-war were still off the bar. The last of the rice was cooked this morning, and served with the pork - the only other article of food left in the engineer mess-room, where the whole command has messed since the opening of the fire. After this the fire was reopened, and continued very briskly as long as the increased supply of cartridges lasted. The enemy reopened fire at daylight, and continued it with rapidity. The aim of the enemy's gunners was better than yesterday. One shot from the rifled gun in the battery on Cummings Point struck the cheek of an embrasure in the right gorge angle, and sent a large number of fragments inside, wounding a sergeant and three men. The spent ball also came in with the fragments. An engineer employee Mr. John Swearer, from Baltimore, Md. was severely wounded by pieces of a shell which burst inside the fort close to the casemates. One or two balls also penetrated the filling of the embrasure openings of the second tier, but fell entirely spent inside - one of them setting a man's bed on fire.

It soon became evident that they were firing hot shot from a large number of their guns, especially from those in Fort Moultrie, and at nine o'clock I saw volumes of smoke issuing from the roof of the officers' quarters, where a shot had just penetrated. From the exposed position it was utterly impossible to extinguish the flames, and I therefore immediately notified the commanding officer of the fact, and obtained his permission to remove as much powder from the magazine as was possible before the flames, which were only one set

of quarters distant, should encircle the magazine and make it necessary to close it. All the men and officers not engaged at the guns worked rapidly and zealously at this, but so rapid was the spread of the flames that only fifty barrels of powder could be taken out and distributed around in the casemates before the fire and heat made it necessary to close the magazine doors and pack earth against them. The men then withdrew to the casemates on the faces of the fort. As soon as the flames and smoke burst from the roof of the quarters the enemy's batteries redoubled the rapidity of their fire, firing red-hot shot from most of their guns. The whole range of officers' quarters was soon in flames. The wind being from the southward, communicated fire to the roof of the barracks, and this being aided by the hot shot constantly lodging there spread to the entire roofs of both barracks, so that by twelve o'clock all the woodwork of quarters and of upper story of barracks was in flames. Although the floors of the barracks were fire-proof, the utmost exertions of the officers and men were often required to prevent the fire communicating down the stairways, and from the exterior, to the doors, window frames, and other woodwork of the east barrack, in which the officers and men had taken their quarters. All the woodwork in the west barrack was burned. The clouds of smoke and cinders which were sent into the casemates by the wind set on fire many boxes, beds, and other articles belonging to the men, and made it dangerous to retain the powder which had been saved from the magazine. The commanding officer accordingly gave orders to have all but five barrels thrown out of the embrasures into the water, which was done. The small stock of cartridges now only allowed a gun to be fired at intervals of ten minutes. The flagstaff was struck by shot seven times during the day, and a fragment of shell cut the lanyard of the flag. The part thus cut was so connected that the flag must have come down by the run had not the flag been, as it was, twisted around both parts of the lanyard. During the night I endeavored to remedy this by lowering the topmast so as to reeve a new halyard, but failed in consequence of the sticking of the mast, which was swollen by the rain. The most that could be done was to reeve the uncut part of the lanyard through a block attached to the topmast, as high up as a man could climb, so that if the flag untwisted and came down it could be immediately rehoisted as high as this block.

As the fire reached the magazines of grenades that were arranged in the stair towers and implement rooms on the gorge, they exploded completely destroying the stair towers at the west gorge angle, and nearly destroying the other.

At 1 o'clock the flagstaff having been struck twice before this morning, fell. The flag was immediately secured by Lieutenant Hall, and as soon as it could be attached to a temporary staff, hoisted

again upon the parapet at the middle of the right face by Lieutenant Snyder, Corps of Engineers, assisted by Hart, and Davey, a laborer.

About this time information was brought to the commanding officer that Mr. Wigfall, bearing a white flag, was on the outside, and wished to see him. He accordingly went out to meet Mr. Wigfall, passing through the blazing gateway, accompanied by Lieutenant Snyder. In the mean time however, Mr. Wigfall had passed to an embrasure on the left flank, where, upon showing the white flag upon his sword, he was permitted to enter, and Lieutenant Snyder entering immediately after, accompanied him down the batteries to where some other officers were posted, to whom Mr. Wigfall commenced to address himself, to the effect that he came from General Beauregard to desire that, inasmuch as the flag of the fort was shot down, a fire raging in the quarters, and the garrison in a great strait, hostilities be suspended, and the white flag raised for this object. He was replied to that our flag was again hoisted on the parapet, that the white flag would not be hoisted except by order of the commanding officer, and that his own batteries should set the example of suspending fire. He then referred to the fact of the batteries on Cummings Point, from which he came, having stopped firing, and asked that his own white flag might be waved to indicate to the batteries on Sullivan's Island to cease also. This was refused; but he was permitted to wave the white flag himself, getting into an embrasure for this purpose. Having done this for a few moments, Lieutenant Davis, First Artillery, permitted a corporal to relieve him. Very soon, however a shot striking very near to the embrasure, the corporal jumped inside, and declared to Mr. Wigfall that "he would not hold his flag, for it was not respected."

At this moment the commanding officer, having re-entered through an embrasure, came up. To him Mr. Wigfall addressed nearly the same remarks that he had used on entering, adding some complimentary things about the manner in which the defense had been made, and ending by renewing the request to suspend hostilities in order to arrange terms of evacuation. The commanding officer desiring to know what terms he came to offer, Mr. Wigfall replied, "Any terms that you may desire - your own terms - the precise nature of which General Beauregard will arrange with you."

The commanding officer then accepted the conditions, saying that the terms he accepted were those proposed by General Beauregard on the 11th, namely: To evacuate the fort with his command, taking arms and all private and company property, saluting the United States flag as it was lowered, and being conveyed, if he desired it, to any northern port. With this understanding Mr. Wigfall left, and the white flag was raised and the United States flag lowered by order of the

commanding officer.

Very soon after a boat arrived from the city, containing three aides of General Beauregard, with a message to the effect that, observing the white flag hoisted, General B. sent to inquire what aid he could lend in extinguishing the flames, &c. Being made acquainted with the condition of affairs and Mr. Wigfall's visit, they stated that the latter, although an aid of General Beauregard, had not seen him for two days.

The commanding officer then stated that the United States flag would be raised again, but yielded to the request of the aides for time to report to their chief and obtain his instructions. They soon returned, with the approval of all the conditions desired except the saluting of the flag as it was lowered, and this exception was subsequently removed after correspondence. In the morning communication was had with the fleet, and Captain Gillis paid a visit to the fort.

The evacuation was completed after saluting the flag, in doing which one man was instantly killed, one mortally and four severely wounded, by the premature discharge of a gun and explosion of a pile of cartridges. The whole command went on board a steamer which placed them on board the Isabel, where they remained all night.

April 14. - The Isabel went over the bar and placed the whole command on board the steamer Baltic, which started for New York.

April 17. - Arrived in New York.

The following observations may be made upon the bombardment: The enemy's fire on the second day, the 13th, was more rapid and more accurate than on the previous day. It seemed to be directed at the embrasures, and to set the quarters on fire. The latter object was fully attained, but not the former, for only two embrasures were struck - one at the right gorge angle by the rifled shot mentioned above, and the other at the left shoulder angle by a shot from the so-called floating battery, which struck the shutter, but without destroying it or entering the throat of the embrasure. The attempt to form a breach at the right gorge angle only succeeded in breaching around one embrasure to the depth of twenty-two inches, and in knocking off a large piece of one cheek, but without disabling the gun or rendering the embrasure inefficient. The barbette tier was not much injured by the second day's firing, none of the guns being dismounted by it; and few of them struck. The fire, however, destroyed all the gun carriages and splinter-proof shelters on the gorge.

After the cessation of fire, about six hundred shot-marks on the face of the scarp wall were counted, but they were so scattered that no breached effect could have been expected from such fire, and probably none was attempted except at the right gorge angle. The only effect of the direct fire during the two days was to disable three barbette guns, knock off large portions of the chimneys and brick walls projecting above the parapet, and to set the quarters on fire with hot shot. The vertical fire produced more effect, as it prevented the working of the upper tier of guns, which were the only really effective guns in the fort, being columbiads, 8-inch sea-coast howitzers, and 42-pounders principally, and also prevented the use of the columbiads arranged in the parade to be used as mortars against Cummings Point. The shells that struck the stair towers nearly destroyed them, and filled the stairways with so much rubbish as to render them almost impassable. This, with the destruction of the stairs at the gorge by the explosion of the magazine of shells by the fire, made it almost impossible to get to the terre-plein.

The burning of the quarters and barracks produced a great effect on the defense while the fire lasted, inasmuch as the heat and smoke were almost stifling, and as the fire burned all around the magazines, obliging them to be closed, and thus preventing our getting powder to continue the firing. It also destroyed the main gates and the gun carriages on the parapet of the gorge. But we could have resumed the firing as soon as the walls cooled sufficiently to open the magazines, and then, having blown down the wall left projecting above the parapet, so as to get rid of flying bricks, and built up the main gates with stones and rubbish, the fort would actually have been in a more defensible condition than when the action commenced. In fact, it would have been better if the chimneys, roofs, and upper walls of the quarters and barracks had been removed before the firing begun, but the short notice and the small force did not permit anything of this kind to be done after the notice of the attack was received.

The weakness of the defense principally lay in the lack of cartridge bags, and of the materials to make them, by which the fire of our batteries was, all the time, rendered slow, and towards the last was nearly suspended. The lack of a sufficient number of men to man the barbette tier of guns at the risk of losing several by the heavy vertical fire of the enemy also prevented us making use of the only guns that had the power to smash his iron-clad batteries, or of throwing shells into his open batteries, so as to destroy his cannoneers.

The want of provisions would soon have caused the surrender of the

fort, but with plenty of cartridges the men would have cheerfully fought five or six days, and if necessary much longer, on pork alone, of which we had a sufficient supply.

I do not think that a breach could have been effected in the gorge at the distance of the battery on Cummings Point, within a week or ten days; and even then, with the small garrison to defend it, and means for obstructing it, at our disposal, the operation of assaulting it, with even vastly superior numbers, would have been very doubtful in its results.

Respectfully submitted.

J. G. FOSTER,
Captain, Engineers.