

at the right moment did she secure the safety of Hampton Roads and all that depended on it, but the ideas which she embodied revolutionized the system of naval warfare which had existed from the earliest recorded history. The name of the *Monitor* became generic,

representing a new type; and, crude and defective as was her construction in some of its details,* she yet contained the idea of the turret, which is to-day the central idea of the most powerful armored vessels.

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Commander U. S. Navy.

* In regard to this criticism of the *Monitor*, Captain Ericsson has sent to the Editor the following statement: "Evidently the author refers to sea-going qualities, forgetful of the fact that the *Monitor* was constructed to perform the functions of a river-battery, impregnable to Confederate ordnance of the heaviest caliber. With reference to its properties as a fighting machine, the maritime world deemed it not only a complete success, but a remarkable specimen of naval engineering. The Emperor of Russia accordingly sent the accomplished Admiral Lessofsky to study its construction and watch the building of the new fleet of Passaic class of monitors—which, in all essential features, resembled the original. The Russian admiral, after having been present during a trial trip from New York to Fortress Monroe, of the monitor *Montauk* (subsequently hit by Confederate shot 214 times) reported so favorably to his government that the Emperor ordered twelve vessels to be built to Captain Ericsson's plans, precisely like the American monitors. This fleet paid a visit to Stockholm immediately after completion, causing a profound sensation among the Swedes."

† On account of the recent death of the writer of this paper, which occurred December 11, 1884, soon after its preparation, the proofs did not receive the benefit of his revision. The article appears substantially in the form in which it was written, without changes other than verbal ones and a slight rearrangement of paragraphs.

Commander S. Dana Greene was the son of General George S. Greene, who was graduated at West Point in 1823, and served with distinction throughout the Civil War, being severely wounded in the face at the battle of Wauhatchie, near Chattanooga, Tenn., in October, 1863. He was appointed to the Naval Academy from Rhode Island in 1855, and was graduated in 1859. He served as midshipman on the *Hartford* in the China Squadron from 1859 to 1862; as lieutenant on the *Monitor* in 1862; on the *Florida* in 1863, blockading on the coast of North Carolina; on the *Iroquois*, under Commander (now Rear-Admiral) C. R. P. Rodgers, in 1864-65, making a cruise around the world in search of the *Alabama*, but without finding her, that honor having fallen to the *Kearsarge*; as lieutenant-commander on the *Ossipee*, *Saranac*, and *Pensacola*, in the Pacific Squadron, in 1868 to 1871; as commander of the *Juniata* and *Monongahela* in the Atlantic Squadron, in 1875 to 1878, and of the *Despatch* in 1883-84; with intervals of shore duty in various positions at the Naval Academy—1865-68, 1872-74, 1878-83. He died at the Portsmouth Navy Yard, December 11, 1884, aged 44.

Of the services of Mr. Greene in connection with the *Monitor*, Captain Worden made the following official record in a letter to the Secretary of the Navy: "I was ordered to her (the *Monitor*) on the 13th of January, 1862, when she was still on stocks. Prior to that date Lieutenant S. D. Greene had interested himself in her and thoroughly examined her construction and design and informed himself as to her qualities, and, notwithstanding the many gloomy predictions of naval officers and officers of the mercantile marine as to the great probability of her sinking at sea, volunteered to go in her, and, at my request, was ordered. From the date of his orders he applied himself unremittingly and intelligently to the study of her peculiar qualities and to her fitting and equipment. . . . Lieutenant Greene, after taking his place in the pilot-house and finding the injuries there less serious than I had supposed, had turned the vessel's head again in the direction of the enemy to continue the engagement; but before he could get at close quarters with her she retired. He therefore very properly returned to the *Minnesota* and lay by her until she floated. . . . Lieutenant Greene, the executive officer, had charge in the turret, and handled the guns with great courage, coolness, and skill; and throughout the engagement, as in the equipment of the vessel and on her passage to Hampton Roads, he exhibited an earnest devotion to duty unsurpassed in my experience."—ED.



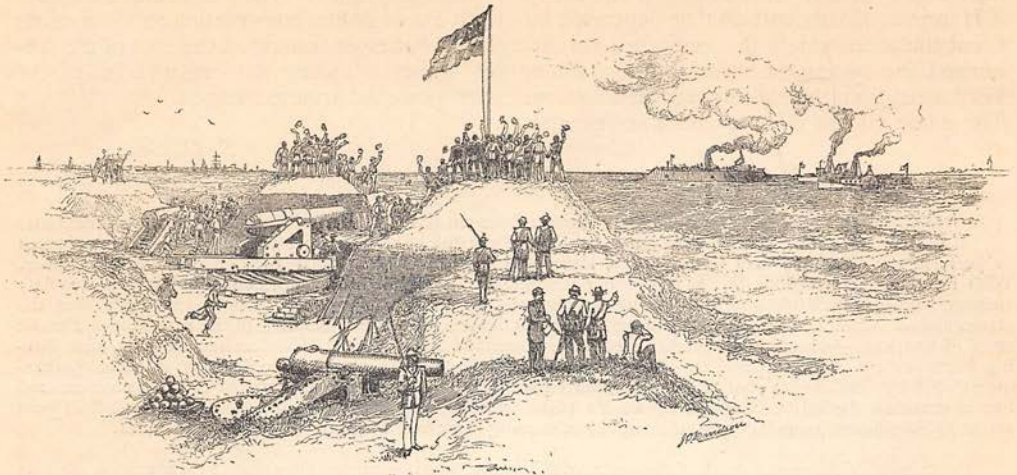
THE "MONITOR" IN BATTLE TRIM.

WATCHING THE "MERRIMAC."

In March, 1862, I was in command of a Confederate brigade and of a district on the south side of the James River, embracing all the river forts and batteries down to the mouth of Nansmond River. My pickets were posted all along the shore opposite Newport News. From my headquarters at Smithfield I was in

constant and rapid communication through relays of couriers and signal stations with my department commander, Major-General Huger, stationed at Norfolk.

About 1 P. M. on the 8th of March, a courier dashed up to my headquarters with this brief dispatch: "The *Virginia* is coming up



THE "MERRIMAC" PASSING THE CONFEDERATE BATTERY ON CRANEY ISLAND, ON HER WAY TO ATTACK THE FEDERAL FLEET.

the river." Mounting at once, it took me but a very short time to gallop twelve miles down to Ragged Island. Newport News, exactly opposite, was an important Federal position completely commanding the entrance of the James. Powerful land batteries had been constructed, and a blockading squadron consisting of the United States frigates the *Cumberland* and the *Congress* (both sailing-vessels) had been stationed there for many months.

I had hardly dismounted at the water's edge, when I descried the *Merrimac* approaching. The *Congress* was moored about a hundred yards below the land batteries, and the *Cumberland* a little above them. As soon as the *Merrimac* came within range, the batteries and war-vessels opened fire. She passed on up, exchanging broadsides with the *Congress*, and making straight for the *Cumberland*, at which she made a dash, firing her bow-guns as she struck the doomed vessel with her prow. I could hardly believe my senses when I saw the masts of the *Cumberland* begin to sway wildly. After one or two lurches, her hull disappeared beneath the water, her guns firing to the last moment. Most of her brave crew went down with their ship, but not with their colors, for the Union flag still floated defiantly from the masts, which projected obliquely for about half their length above the water after the vessel had settled unevenly upon the river bottom. This first act of the drama was over in about thirty minutes, but it seemed to me only a moment.

The commander of the *Congress* recognized at once the impossibility of resisting the assault of the ram which had just sunk the *Cumberland*. With commendable promptness and presence of mind, he slipped his cables,

and ran her aground upon the shallows, where the *Merrimac*, at that time drawing twenty-three feet of water, was unable to approach her, and could attack her with artillery alone. But, although the *Congress* had more guns than the *Merrimac*, and was also supported by the land batteries, it was an unequal conflict, for the projectiles hurled at the *Merrimac* glanced harmlessly from her iron-covered roof, while her rifled guns raked the *Congress* from end to end with terrific effect.

A curious incident must be noted here. Great numbers of people from the neighborhood of Ragged Island, as well as soldiers from the nearest posts, had rushed to the shore to behold the spectacle. The cannonade was *visibly* raging with redoubled intensity; but, to our amazement not a sound was heard by us from the commencement of the battle. A strong March wind was blowing direct from us toward Newport News. We could see every flash of the guns and the clouds of white smoke arising after each discharge, but not a single report was audible. The effect was unspeakably strange. It seemed a picture of a battle rather than the reality. This flashing and moving but silent panorama continued to fascinate our gaze until near sunset, when the wind suddenly falling, the roar of the cannonade burst upon us in thundering majesty.

The *Merrimac*, taking no notice of the land batteries, concentrated her fire upon the ill-fated *Congress*. The latter replied gallantly until her commander, Joseph B. Smith, was killed and her decks were reeking with slaughter. Then her colors were hauled down and white flags appeared at the gaff and mainmast. Meanwhile, the James River gun-boat flotilla had joined the *Merrimac* after

the sinking of the *Cumberland*. The *Beaufort* ran alongside, carrying her commander, Lieutenant Parker, who received the flag of the *Congress* and the swords of Commander William Smith and Lieutenant Pendergrast. These two officers were taken on board of the *Beaufort*, but at their own request were allowed to return to the *Congress* to aid in the transfer of their wounded to the *Beaufort*. But the land batteries kept up such a terrible fire from heavy guns and small arms, that the boats were driven back with loss, Lieutenant Minor, of the *Merrimac*, among others, being wounded in one of the boats of that vessel. Through my field-glass I could see the crew of the *Congress* making their escape to the shore over the bow. Unable to secure her prize, the *Merrimac* set her on fire with hot shot, and turned to face new adversaries just appearing upon the scene of conflict.

As soon as it was known at Fortress Monroe that the *Merrimac* had come out, the frigates *Minnesota*, *Roanoke*, and *St. Lawrence* were ordered to the assistance of the blockading squadron. The first was one of the most powerful of her class, mounting forty guns. The *Roanoke* was also a large steam-frigate, and the *St. Lawrence* was a sailing-vessel. The *Minnesota*, assisted by two tugs, was the first to reach the scene, but the *Cumberland* and *Congress* were already past helping. As soon as she came within range, a rapid cannonade commenced between her and the *Merrimac*, aided by the *Patrick Henry* and the *Jamestown*, side-wheel river steamers transformed into gun-boats. The *Minnesota*, drawing nearly as much water as the *Merrimac*, grounded upon a shoal in the North Channel. This at once put an end to any further attacks by ramming; but the lofty frigate, towering above the water, now offered an easy target to the rifled guns of the *Merrimac* and the lighter artillery of the gun-boats. The *Merrimac* narrowly escaped getting aground herself, and had to keep at a considerable distance, but she and the gun-boats could choose their position, and they raked their motionless antagonist from stem to stern, inflicting great damage and slaughter. She replied, undaunted, with her formidable battery, and the gun-boats were soon driven back; a shot exploded the *Patrick Henry's* boiler, causing much loss of life, and disabling that vessel for a considerable time.

In the mean time the *Roanoke* and *St. Lawrence* were approaching, aided by steam-tugs. As they passed Sewall's Point, its batteries opened fire upon them, and they replied with broadsides. Just at that moment the scene was one of unsurpassed magnificence. The bright afternoon sun shone upon the

glancing waters. The fortifications of Newport News were seen swarming with soldiers, now idle spectators of a conflict far beyond the range of their batteries, and the flames were just bursting from the abandoned *Congress*. The stranded *Minnesota* seemed a huge monster at bay, surrounded by the *Merrimac* and the gun-boats. The entire horizon was lighted up by the continual flashes of the artillery of these combatants, the broadsides of the *Roanoke* and *St. Lawrence* and the Sewall's Point batteries; clouds of white smoke rose in spiral columns to the skies, illumined by the evening sunlight, while land and water seemed to tremble under the thunders of the incessant cannonade.

The *Minnesota* was now in a desperate situation. It is true that, being aground, she could not sink, but looking through the glass, I could see a hole in her side, made by the *Merrimac's* rifle shells. She had lost many men, and had once been set on fire. Her destruction or surrender seemed inevitable, since all efforts to get her afloat had failed. But just then the *Merrimac* turned away from her toward the *Roanoke* and the *St. Lawrence*. These vessels had suffered but little from the distant fire of the Sewall's Point batteries, but both had run aground, and had not been floated off again without great difficulty, for it was very hazardous for vessels of deep draught to manœuvre over these comparatively shallow waters. When the *Merrimac* approached, they delivered broadsides, and were then towed back with promptness. The *Merrimac* pursued them but a short distance (for by this time darkness was falling upon the scene of action, the tide was ebbing, and there was great risk of running aground), and then steamed toward Norfolk with the *Beaufort*, leaving her wounded at the Marine Hospital. Among these was her brave commander, Admiral Franklin Buchanan, who had handled her that day with unsurpassed skill and courage. The command now devolved upon Lieutenant Catesby Jones, who the next day proved himself a most able and gallant successor.

And now followed one of the grandest episodes of this splendid yet somber drama. Night had come, mild and calm, refugent with all the beauty of Southern skies in early spring. The moon in her second quarter was just rising over the rippling waters, but her silvery light was soon paled by the conflagration of the *Congress*, whose lurid glare was reflected in the river. The burning frigate four miles away seemed much nearer. As the flames crept up the rigging, every mast, spar, and rope, glittered against the dark sky in dazzling lines of fire. The hull, aground upon the shoal, was plainly visible, and upon its

black surface each port-hole seemed the mouth of a fiery furnace. For hours the flames raged, with hardly a perceptible change in the wondrous picture. At irregular intervals, loaded guns and shells, exploding as the fire reached them, sent forth their deep reverberations, reëchoed over and over from every headland of the bay. The masts and rigging were still standing, apparently almost intact, when, about two o'clock in the morning, a monstrous sheaf of flame rose from the vessel to an immense height. The sky was rent in twain by the tremendous flash. Blazing fragments seemed to fill the air, and after a long interval, a deep, deafening report announced the explosion of the ship's powder-magazine. When the blinding glare had subsided, I supposed every vestige of the vessel would have disappeared; but apparently all the force of the explosion had been upward. The rigging had vanished entirely, but the hull seemed hardly shattered; the only apparent change in it was that in two places two or three of the port-holes had been blown into one great gap. It continued to burn until the brightness of its blaze was effaced by the morning sun.

During the night I had sent an order to bring down from Smithfield to Ragged Island the twelve-oared barge that I used when inspecting the river batteries, and at the first dawn of day I embarked with some of my staff, and rowed in the direction of the *Minnesota*, confident of witnessing her destruction or surrender; and, in fact, nothing could have saved her but the timely arrival of the anxiously expected *Monitor*.

The sun was just rising when the *Merrimac*, having anchored for the night at Sewall's Point, headed toward the *Minnesota*. But a most important incident had taken place during the night. The *Monitor* had reached Old Point about ten o'clock; her commander had been informed of the events of the day, and ordered to proceed at once to the relief of the *Minnesota*. His comparatively small vessel, scarcely distinguishable at night from an ordinary tug-boat, made her way unperceived while all attention was concentrated upon the conflagration of the *Congress*, and she anchored alongside of the *Minnesota* about two o'clock in the morning.

As soon as the *Merrimac* approached her old adversary, the *Monitor* darted out from behind the *Minnesota*, whose immense bulk had effectually concealed her from view. No words can express the surprise with which we beheld this strange craft, whose appearance was tersely and graphically described by the exclamation of one of my oarsmen, "A tin can on a shingle!" Yet this insignificant-

looking object was at that moment the most powerful war-ship in the world. The first shots of the *Merrimac* were directed at the *Minnesota*, which was again set on fire, while one of the tugs alongside of her was blown up, creating great havoc and consternation; but the *Monitor*, having the advantage of light draught, placed herself between the *Merrimac* and her intended victim, and from that moment the conflict became a heroic single combat between the two iron-clads. For an instant they seemed to pause, as if to survey each other. Then advancing cautiously, the two vessels opened fire as soon as they came within range, and a fierce artillery duel raged between them without perceptible effect, although the entire fight was within close range, from half a mile at the farthest down to a few yards. For four hours, from eight to twelve (which seemed three times as long), the cannonading continued with hardly a moment's intermission. I was now within three-quarters of a mile of them, and more than once stray shots came near enough to dash the spray over my barge, but the grandeur of the spectacle was so fascinating that they passed by unheeded. Like gladiators in the arena, the antagonists would repeatedly rush at each other, retreat, double, and close in again. During these evolutions, in which the *Monitor* had the advantage of light draught, the *Merrimac* ran aground. After much delay and difficulty she was floated off. Finding that her shot made no impression whatever upon the *Monitor*, the *Merrimac*, seizing a favorable chance, succeeded in striking her foe with her stem. Soon afterward they ceased firing and separated as if by common consent. The *Monitor* steamed away toward Old Point. Captain Van Brunt, commander of the *Minnesota* states in his official report that when he saw the *Monitor* disappear, he lost all hope of saving his ship. But, fortunately for him, the *Merrimac* steamed slowly toward Norfolk, evidently disabled in her motive power. The *Monitor*, accompanied by several tugs, returned late in the afternoon, and they succeeded in floating off the *Minnesota* and conveying her to Old Point.

During the battle the *Merrimac* had lost two killed and nineteen wounded. Her starboard anchor, all her boats, her smoke-stack, and the muzzles of two of her guns were shot away; but the important fact was established that the guns then in use had proved unable to inflict any injury upon the *Monitor*, and that even the improvised armor of the *Merrimac* had suffered no very important damage from the superior guns of the *Monitor*.