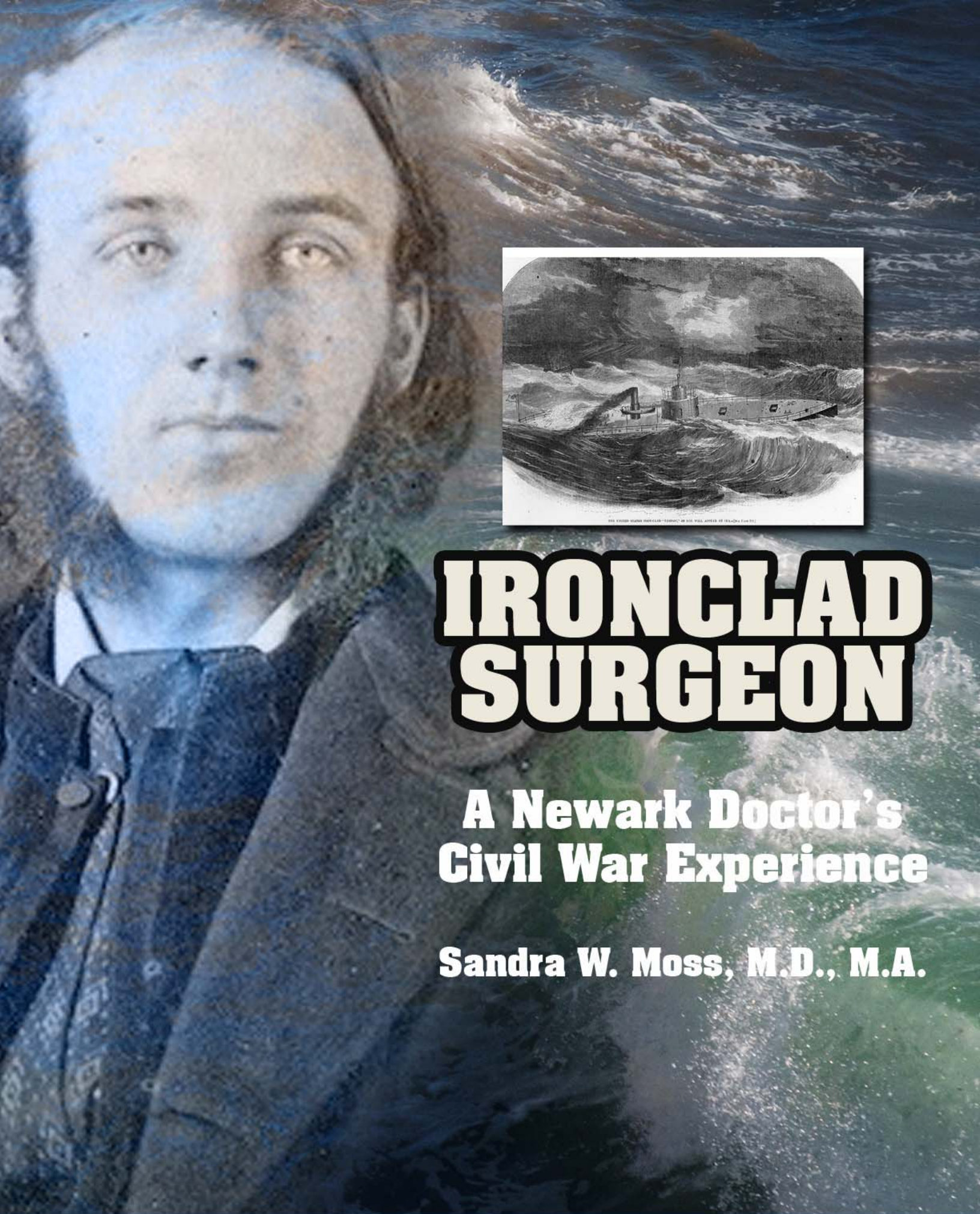

IRONCLAD SURGEON

A Newark Doctor's Civil War Experience

Sandra W. Moss, M.D., M.A.

Born in 1838 to foundry owner Asa Holden and his wife Anna, young Edgar Holden carried with him warm memories of a childhood in the Massachusetts shore town of Hingham. Although he would later write short stories and articles about seaside life and marine tragedies, there is no evidence that Holden experienced shipboard life prior to his service in the Union Navy. During Edgar's teenage years, the Holdens left Massachusetts and joined extended families in Newark.[1]

In 1856, Holden joined the gentlemen scholars at the College of New Jersey in Princeton as a sophomore, having prepared for his entrance examinations with Presbyterian minister and educator John Pingry **(Figure 1)**.[2] If any professor at Princeton influenced Holden in his choice of medicine as a profession, it was John Stilwell Schanck, a practicing physician in Princeton. Schanck taught a range of science courses, including anatomy and physiology, hygiene, natural history, zoology, and chemistry.[3] In addition to active participation in undergraduate shenanigans, Holden showed a modest talent as a poet, and contributed regularly to the college's *Nassau Literary Magazine*. He also enjoyed a reputation as a sketch artist and amateur musician.[4]

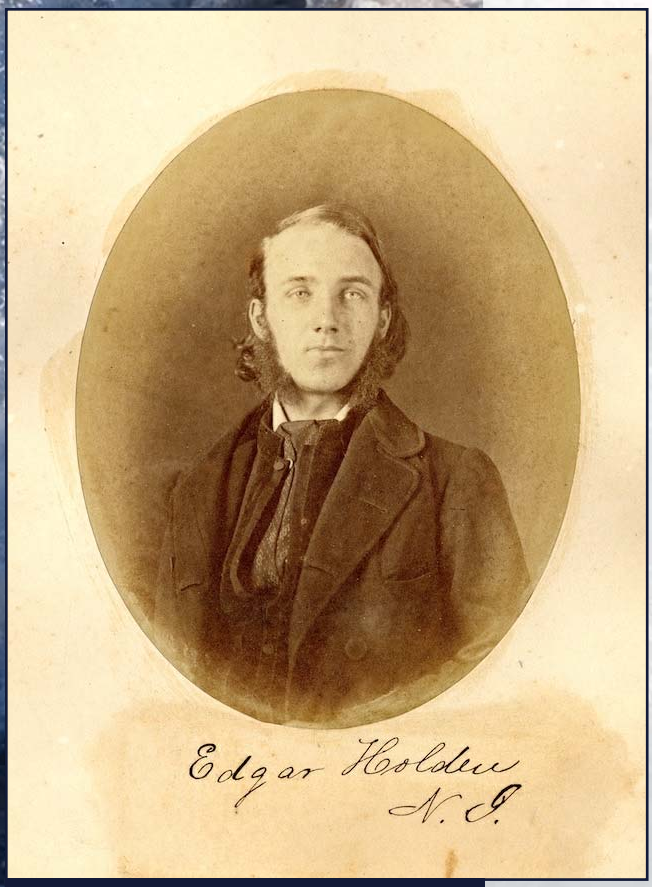

FIGURE 1
Edgar Holden, student portrait, College of New Jersey.
Princeton University Archives

Flanked by the robust and progressive medical meccas of New York and Philadelphia, 19th century New Jersey medical institutions lagged far behind. There were no medical colleges for aspiring physicians and no prestigious teaching hospitals. So, young Holden chose New York's College of Physicians and Surgeons, entering in 1859.

By the rather dismal standards of mid-19th century American medical education, College of Physicians and Surgeons offered lectures and demonstrations taught by a capable and, in some cases, outstanding faculty. Classroom study was supplemented by observation of patient care by faculty members in clinics and hospitals, as well as privately arranged preceptorships. The hospital's clinical lectures in surgery offered students the opportunity to witness operations "of the gravest nature."[5]

Following graduation in 1861, Holden took up a post as assistant physician at the hospital of the Kings County Almshouse in the Flatbush section of Brooklyn, where he could hone his clinical skills **(Figure 2, next page)**. The almshouse and hospital were managed by the Brooklyn Superintendents of

the Poor. As the almshouse hospital population grew, such junior house physicians, who resided on the hospital grounds, were hired to assist the resident physician and visiting consultants.[6]

The house post at Kings County was an opportunity for Holden to gain experience and polish his diagnostic and therapeutic skills. The annual report for the fiscal year ending July 1, 1861, by which time Holden had been at work for several months, noted that the hospital had admitted over two thousand patients during the year.[7] Even if he was not intent on pursuing a career in New York, a year or two of post-graduate work at Kings County would put him in a good position to advance quickly in the relatively uncompetitive professional environment of Newark. Whatever Holden's plans for civilian practice, however, they were abandoned with the fall of Fort Sumter on April 12, 1861.

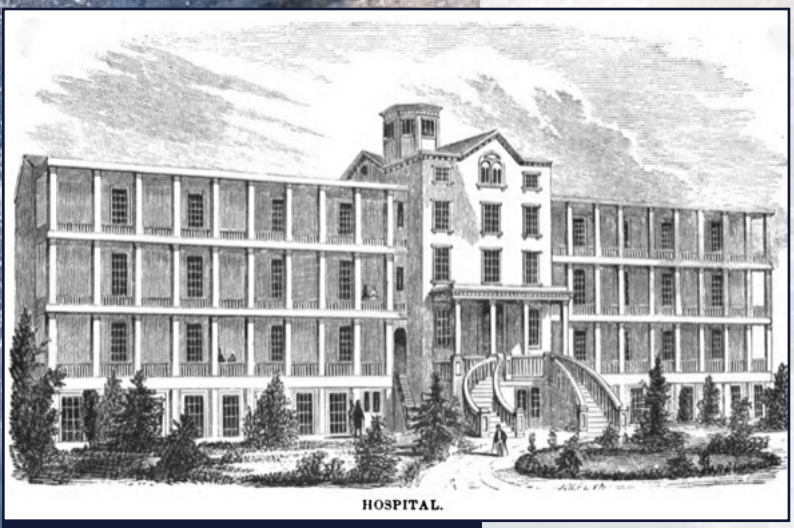

FIGURE 2
Kings County Almshouse Hospital.
Annual Report of the Superintendents of the Poor of Kings County, for the Year Ending July 31, 1861

ESSEX COUNTY PHYSICIANS GO TO WAR

With the outbreak of the Civil War, Essex County physicians answered the call. The historian of the Essex District (i.e. County) Medical Society, Dr. J. Henry Clark, listed twelve member physicians who served in units of the New Jersey Volunteers or United States Army and eight who served in the United States Navy. Four gave their lives.

Young Edward Pierson, member of a Newark medical dynasty, was medical officer of the USS *Penobscot,* assigned to blockade duty off North Carolina in May 1862. Pierson had laid out his surgical instruments below decks when a shell from Confederate Fort Fisher hit the cabin. He was struck in the head by a large flying splinter of wood and died within hours. Pierson was 26 years-old when he became Essex County's "first [medical] martyr to a preserved nationality."

Following active service in the field and an appointment as the last medical director of Newark's Ward United States Army Hospital, James T. Calhoun died at age 27 of cholera at the military hospital on New York's Wards Island shorty after the end of the war. Luther G. Thomas, surgeon of a New Jersey volunteer regiment, died of "congestion of the brain." Joseph Addison Freeman, who had earlier conducted a landmark investigation into mercury poisoning among Essex County hatters, died of fever at age 30 while serving at a military hospital in Nashville.[8]

NAVY SURGEON

The Civil War for many young physicians, both Union and Confederate, was a professional baptism by fire. Perhaps Holden's early childhood near the commercial shipyards of Massachusetts influenced his decision to join the naval medical service. His medical school training and almshouse hospital experience appear to have prepared him well for his shipboard "sick call" and battlefield trauma duties. Since the Civil War Navy was mainly a coastal operation, difficult or complex cases could often be transferred to port facilities or hospital ships.

FIGURE 3
The steam frigate USS *Minnesota*.
wikipedia.org

Medical care in the Union Navy was under separate administration from that of the Army. Physicians on individual vessels reported to a fleet surgeon, who reported to the chief of the Bureau of Medicine and Surgery, and thence to Secretary of the Navy Gideon Welles. As one historian of naval medicine observed, "a medical officer below decks in a wooden ship [was] not really a noncombatant."[9] "Below decks" is not quite the same thing as "behind the lines."

In early October 1861, the *New York Times* listed Dr. Edgar Holden among the physicians who passed a "rigid but fair" examination before the Naval Medical Board convened at the United States Naval Hospital in Brooklyn.[10] A gifted writer, Holden would chronicle his eventful wartime years—both thrilling and terrifying—in two popular national periodicals: *Harper's New Monthly Magazine* and *Century Magazine.*

MEDICAL OFFICER AT HAMPTON ROADS

Holden was 23 years-old on February 25, 1862, and just a year out of medical school, when he took up his post as acting assistant surgeon aboard the steam frigate USS *Minnesota* **(Figure 3)** with the Union fleet at Hampton Roads, Virginia, in anticipation of an attack by the Confederate fleet and its rumored secret ironclad behemoth.[11] Holden, class poet of his Princeton graduating class, wrote these lines about the coming battle:[12]

The Merrimac & Monitor from the Frigate Minnesota

Within the capes of the lower bay
In stately grandeur on the ocean's swell
The old line Frigate *Minnesota* lay
Her long spars gleaming in the bright spring day
As with monotony sublime she rose and fell.

In the lazy calm comes the Boatswain's call
And the "Second Cutter" is called away
A moment more it is "give way all"!
But hark! a startling sound on the senses fall
The drum long rolling beats "to quarters all"!
And swift the scene is changed to war's array.

Beneath the deck so lately still
The rattling blocks and the hurrying feet
The creak of hawser and engines' thrill
Perchance with hoarse command a common will
And each pulse throbs with a quickening beat.

Then swift a change to silence dread
And the gunner's feet on the sanded deck
And the sailor's cry as he heaves the lead
Strike the high strung nerves with ominous dread
Of the coming slaughter and battle's wreck.

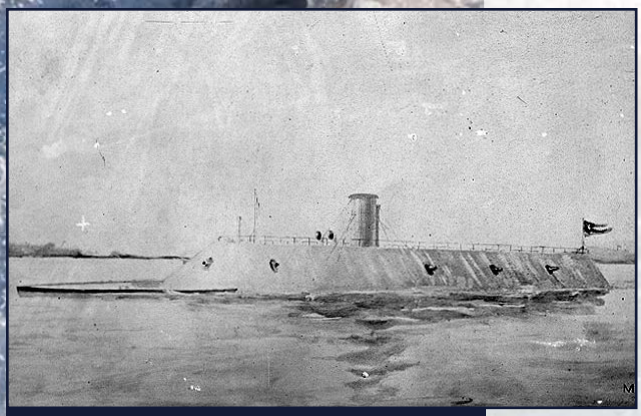

FIGURE 4
Ironclad CSS *Merrimack*.
wikipedia.org

On the morning of March 8, 1862, the Confederate ironclad CSS *Virginia* (formerly the refloated wooden steam frigate USS *Merrimack*) **(Figure 4)** and conventional Confederate naval forces wreaked havoc among the Union vessels at Hampton Roads. The *Minnesota* ran aground and was bombarded by the Confederate fleet. Two Union vessels, *Cumberland* and *Congress,* were lost. Recoil from her own heavy guns drove the *Minnesota* further onto the shoal. Nightfall and a falling tide sent the *Virginia* and her flotilla into shelter in a Confederate held river for the night.

Meanwhile, the USS *Monitor* was racing south from the Brooklyn Navy Yard. The *Monitor* was the prototype of a new class of fighting ship. Structurally, it was little more than two iron hulls and a novel rotating iron turret armed with two eleven-inch Dahlgren guns. The *Monitor* and her crew survived near disaster on the run to the Chesapeake. Seawater poured in through the ventilation blower pipes, causing the fires to go out and the engines to fail. Engineers and crewmen, suffocating from escaping carbon dioxide gas, were dragged out "more

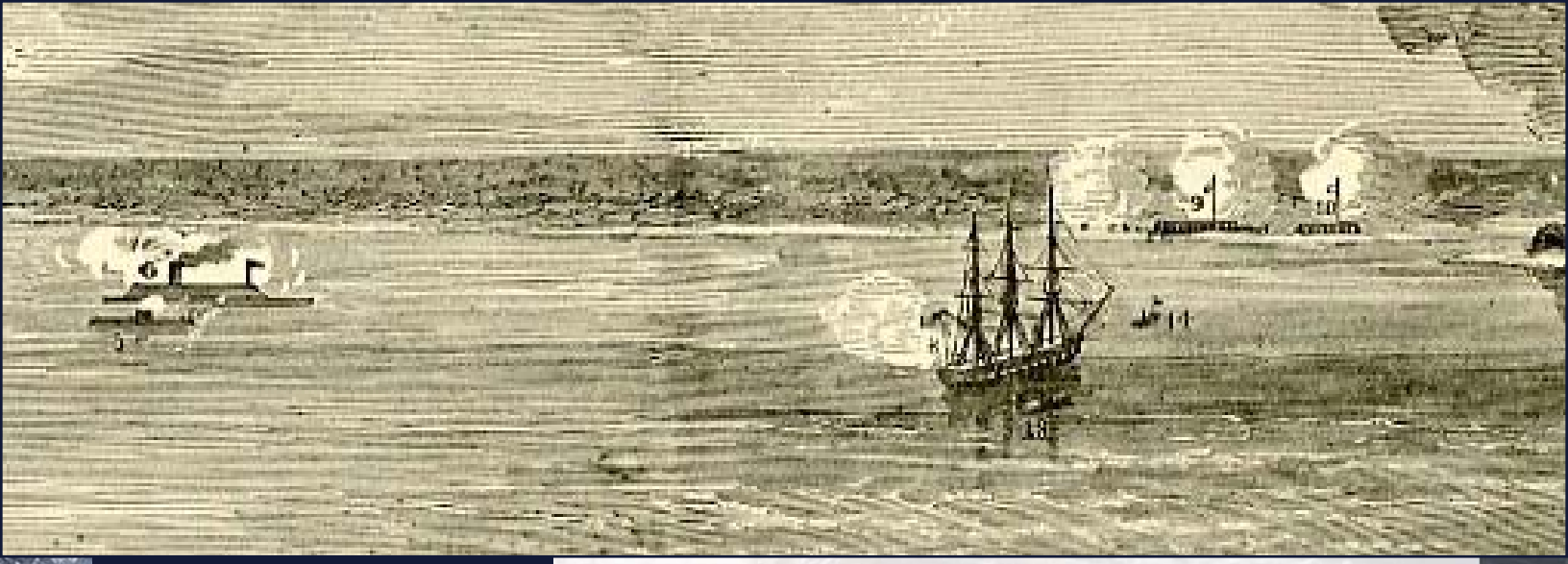

FIGURE 5
Detail from "Scene of the Fight of the Iron-Clads" with the *Monitor* and the *Merrimack/Virginia* center left and the shoaled three-masted *Minnesota* to the right.
Harper's Weekly, 6: 237

dead than alive," and laid out on the roof of the turret to recover. The crew fought on through the night, bailing and pumping until the seas calmed and the engines could be restarted. Under cover of darkness, the strange little ironclad slipped alongside the shoaled *Minnesota.*[13]

The following day (March 9th), Holden was eyewitness to the epic naval battle between the USS *Monitor* and the CSS *Virginia.* The outcome has been judged a standoff, but the *Minnesota,* though damaged by Confederate shelling and still aground, was saved **(Figure 5)**. The critical Union blockade of the Chesapeake held. An Essex County colleague later recalled young Holden's medical service in the wake of the battle:

> [He passed] a large portion of the time, during the two days' fight, in plying from the frigate [*Minnesota*] to the other ships engaged, in attending upon the wounded. Upon the close of the engagement, and in the necessary absence of the Fleet Surgeon, he was placed in charge of the wounded from the *Congress, Cumberland* and *Minnesota,* and performed, for several weeks, the duties of the Senior Surgeon of the Fleet. He participated in the bombardment of Sewell's Point, and was then made Surgeon in charge of the Squadron Hospital at Norfolk.[14]

USS PASSAIC

Excited by the events at Hampton Roads, Holden likely became aware that a fleet of *Monitor* class ironclads was under construction and due for completion near the end of 1862. Officers on these early ships—which doubtless included medical officers—were volunteers. After short service on the steamer *Wyandotte,* Holden found himself at the recruiting

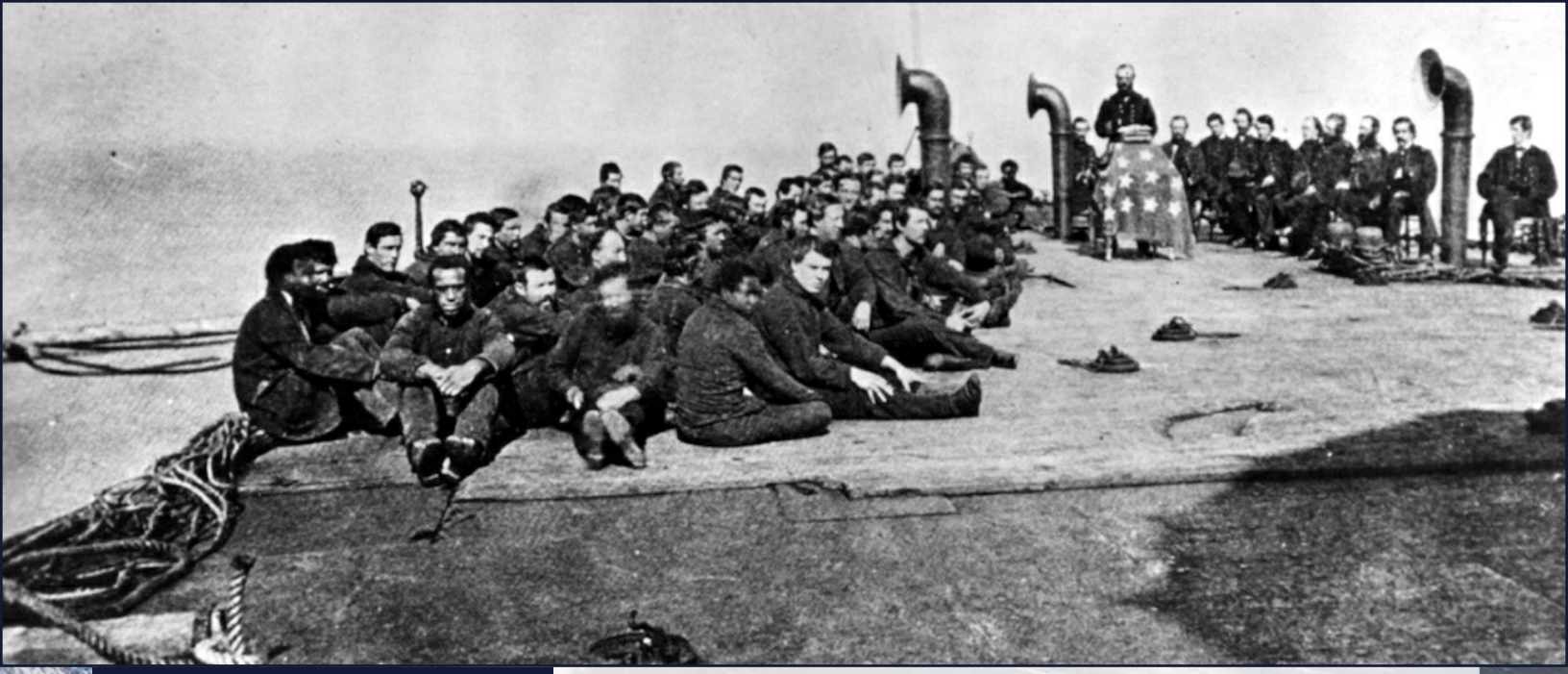

FIGURE 6
USS *Passaic* officers and crew at divine services off Charleston; Holden was likely one of the heavily bearded officers to Captain Drayton's left.
Naval History and Heritage Command, NH 59426

station in New York, from which he was ordered to the USS *Passaic,* the first of the new ironclads, "without delay."[15]

The high point of Holden's naval career, at least in memory if not the actual harrowing experience, was his service on the *Passaic.* He reported aboard at New York on October 18, 1862. The captain was Percival Drayton, an experienced naval officer who had overseen the construction of the *Passaic.* There were fourteen officers, and sixty-five men, including surgeon's steward Orlando Davis **(Figure 6)**.[16]

Life aboard the early ironclads was, at best, uncomfortable, and, at worst, intolerable. The cramped quarters, fetid air, dim light, extremes of temperature, constant wetness, and persisting sense of danger wore on officers and crew alike. The vessel itself posed as great a danger as the Confederate Navy.[17] Holden's thoughts turned to his Newark home and his young wife, as evidenced by the skillful and moving pencil drawing, "Dream of Home," preserved in his diary **(Figure 7, next page)**.

Holden's thrilling shipboard account, "The First Cruise of the 'Monitor' *Passaic,*" was published in October 1863 in *Harper's New Monthly Magazine.*[18] The *Passaic* set out from New York on November 26, 1862, towed by a sidewheel steamer (the monitors were unseaworthy on the open seas), and headed for Fortress Monroe at the entrance to the Chesapeake. The hatches, "far from tight, leaked in constant streams." A gale on the second day threatened the life of the *Passaic* and her crew:

> Every wave broke over our low decks, and, like a huge sea-monster, the ship plunged through them, dripping and leaking in a manner unpleasantly suggestive. . . . We had plunged and plowed along as far as a night's voyage from the

Fortress [Monroe] when we were suddenly startled by a dull report, a shout, and then a rush of men from the engine-room, accompanied by a hissing cloud of steam and smoke. . . . [I heard] the groans of the scalded, and the cries of the terrified struggling to get up the ladder to the deck . . . then a lull and again the cry, "The boilers have burst!" With alacrity the men sprang to the hatches of the fireroom. Swifter than it can be told they tore them off, and one after another was taken out almost stifled, wet, breathless, and exhausted. Fortunately none were found seriously injured. . . . [19]

The wind and seas abated, and the *Passaic* arrived safely at Fortress Monroe. The vessel was towed to Washington naval yard, its damage kept secret.[20] Repairs took until Christmas, when it returned to Fortress Monroe without incident.

On glimpsing the *Monitor* near Fortress Monroe, Holden wrote: "The *Monitor* lay there . . . painted a sombre [*sic*] black, and looking almost like our own reflection in the water." From the *Monitor,* paymaster William Keeler wrote to his wife: "The *Passaic* is in & lies close by us, the two looking as much alike as possible."[21] We can imagine the two officers—surgeon Holden and paymaster Keeler—gazing at each other across the water from the decks of their respective monitors.

FIGURE 7
"Dream of Home," Holden's sketch of his "quarters" on the USS *Passaic* from his Civil War Journal; note paired Dahlgren guns like those in the *Passaic* turret.
William B. Birdsall family collection

OFF THE OUTER BANKS: "THE MONITOR IS GONE"

The *Monitor,* towed by the steamer *Rhode Island,* and the *Passaic,* towed by the sidewheel steamer *State of Georgia,* set out on Monday, December 29, 1862, at noon, heading south. Their destination may have been Wilmington, North Carolina, in preparation for an ironclad assault on a southern port, although the exact purpose of the mission was unknown to Holden.

Historians of the *Monitor* and its death struggle off the Outer Banks of North Carolina on the night of December 30 rarely (if ever) mention the *Passaic,* the second monitor fighting for its own life in that selfsame storm. The official log of the *Passaic* in the National Archives confirms the events, (if not the melodrama) detailed by Holden in his *Harper's* article.

At sunset the first day out, the wind freshened and the swell increased. After midnight, " . . . a leak was discovered near the turret in a boat-davit socket and another in the socket of the turret itself [the fit of the rotating turret to the deck was a

problem with all the ironclads of this class] . . . the water poured over our decks in larger volumes, the stream grew to fearful size." By noon on Tuesday, December 30th, the *Passaic* was off Cape Hatteras, with winds increasing **(Figure 8)**.

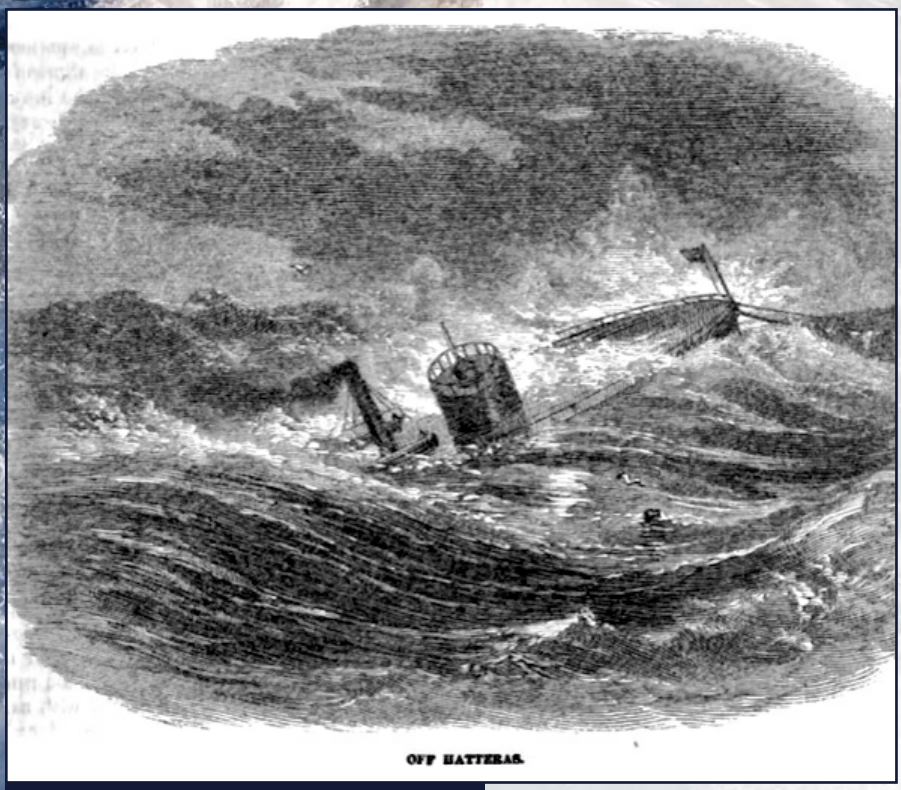

FIGURE 8
The *Passaic* "Off Hatteras" during the storm that sunk the *Monitor*; note the tow rope from the USS *State of Georgia* attached to the bow of the *Passaic*.
Harper's New Monthly Magazine 27: 583

Toward sunset, the *Passaic* made out the *Monitor* **(Figure 9, next page)** in the distance. A new leak was discovered in the bow of the vessel. "A stream poured in like a miniature cataract, but with the velocity of that of a steam engine, and threatening to give serious trouble." Both main pumps gave out, and the crew was forced to rely on bilge injection pumps. A signal was sent to the *State of Georgia* to tow the *Passaic* into the "nearest lee." By midnight the gale gained strength and "we began to despair of ever seeing port." The captain ordered ballast thrown overboard and the crew struggled to jettison tons of shell.

> A rocket was sent up as a distress signal, and informing the *State of Georgia* that we were sinking. . . . At intervals the gale would burst with redoubled fury, and we would rise high on a monstrous wave, and then plunge down completely out of sight of our convoy, or come crashing down on the succeeding wave, with a shock that made the ship tremble like an aspen.

All hands were ordered to bail. Officers—including Holden, who had no navigational duties—and men alike "toiled at the work with an energy that could be stimulated only by desperation." Masses of water rolled over the decks and turret. "Wet through, faint, cold, and despairing, we bailed and bailed, hoping beyond hope."

Despite their efforts, the water rose to within three inches of the fires and the last pumps failed. As the water "swashed and hissed over the glowing grates" and the ship rolled heavily, some of the men sank to the deck in despair; some rushed to the turret "to be, if possible, the last to go down, or to see the open night once more." As officers drove the men back to work,

the pumps began to work, the ship found a more favorable heading, the winds decreased, and the torrential leaks abated. All hands bailed until morning and the *State of Georgia* and the *Passaic* sailed on through the day of December 31st.

As 1862 turned into 1863, the *Passaic* was northeast of Cape Lookout and once again in the teeth of the gale. The official log of the *Passaic* made no mention of a touching ceremony described by Holden for *Harper's* magazine:

> Even now so desperate was our condition that a bottle, containing a short account of our prospects and the state of affairs, was sealed up, a red flag attached, and the whole trusted to the mercy of the waves, in the hope that if the worst of our fears were realized some one [*sic*] would find it, and from that account learn how we had gone.

But the *Passaic* and all hands survived the night and made Beaufort harbor late on New Year's Day. The harbor pilot came aboard and informed the crew that "the *Monitor* is gone and all aboard," news that "fell like a weight upon our hearts." To their relief, Holden and the *Passaic* crew soon learned that two-thirds of the *Monitor* crew had been rescued by daring small boat crews from the *Rhode Island.*

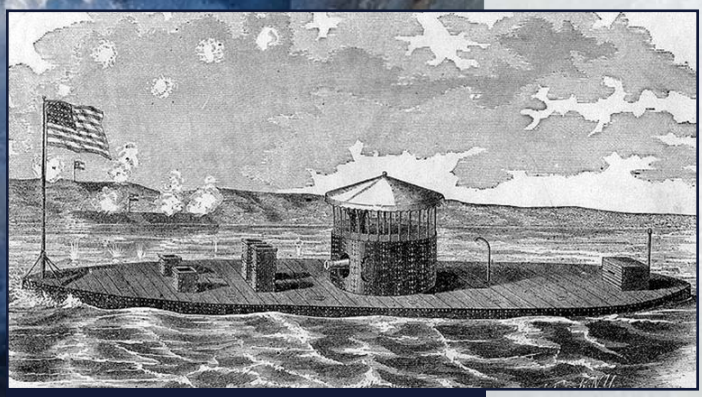

FIGURE 9
The ironclad USS *Monitor*.
US Naval History & Heritage Command

A few days later, the *Passaic* left port, towed by the *Rhode Island* ("the ship that lost the *Monitor*") through another raging storm. "Hour after hour, for miles, we were hurled along, growing less and less hopeful, and ignorant of our whereabouts. . . . Once we nearly ran on the shoals, but where no one knew." But the sun came out, the *Passaic* anchored off Hilton Head and made harbor at Port Royal.[22] Several months of inshore blockade duty followed, climaxed by the failed bombardment on March 3, 1863 by the *Passaic* and other monitors, of a Confederate sand fort (Fort McAllister)—a disappointing trial of ironclad performance—in the lead up to a naval assault on Charleston.

THE SURGEON'S LIFE ABOARD THE PASSAIC

In all, Holden spent five months on the *Passaic.* His first official duty was preparing his medical log, now preserved at the National Archives. He embellished the first page with the words "Journal—Ironclad Passaic" in his elegant calligraphy **(Figure 10)**. The medical log kept by Holden during the first

month at sea showed that he treated one to four men in sickbay daily.

On the night of the gale that claimed the *Monitor,* Holden recorded four officers and five men sick with diarrhea, but on duty. On January 7, he requested and was granted permission to send the first assistant engineer ashore with diarrhea, "as fires are out & the damp & cold are almost unbearable." Other crewmembers were treated for bronchitis, scorbutic purpura (scurvy, probably acquired ashore before joining the crew), carbuncle, sore joints, influenza, lacerations and burns, pneumonia, fevers, and "melancholia." For each man transferred to a hospital ship or shore hospital, Holden prepared a "hospital ticket"—a short summary of the case.[23]

The sickest man on the *Passaic,* however, was the surgeon himself. An uncharacteristically lengthy entry in the medical log appeared in Holden's hand on April 1st, 1863:

> Memorand: During the Quarter [i.e. three months] I have myself been constantly under treatment for Dysentery with frequent convalescences & relapses the latter sufficient at times to confine me to bed for one two & three weeks. The end of the Quarter shows no material improvement save in ability to be out of bed for the greater part of each day (under use of Opium).[24]

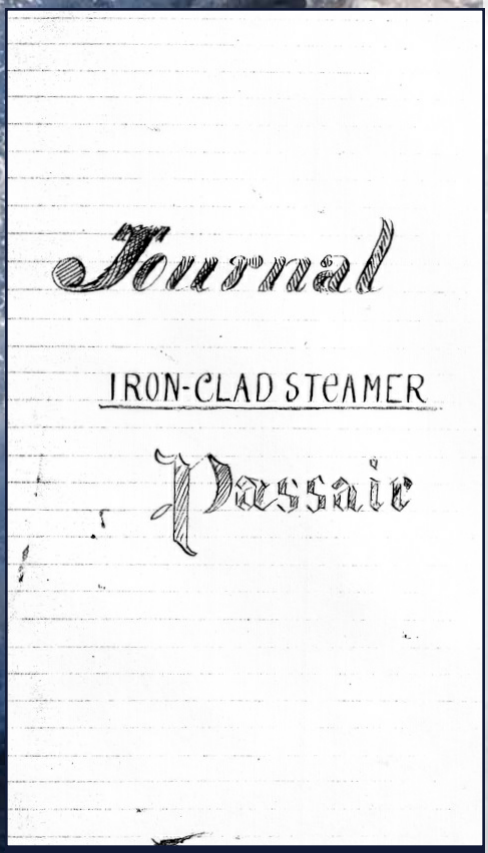

FIGURE 10
"Journal Iron-Clad Steamer Passaic," medical log of the USS *Passaic*, with Holden's calligraphy.
National Archives and Records Administration

IRONCLAD ATTACK ON CHARLESTON HARBOR

Gideon Welles, Secretary of the Navy, ordered a fleet of ironclads to take Charleston Harbor, the most heavily defended port of the Confederacy. The *Passaic* arrived there on April 6th, 1863. In his medical log, Holden called April 7th a "day of action." Rear Admiral Samuel DuPont was in command. The Union order of battle included seven *Passaic* class monitors: *Weehauken, Passaic, Montauk, Patapsco, Nantucket, Nahant,* and *Catskill.* The smokestacks of the monitors were painted in different colors for identification by commanding officers. Two larger ironclads of novel design, the *New Ironsides* and the *Keokuk,* made up the attacking force.

> In every direction there seemed to be nothing but batteries and guns, while Fort Sumter's walls were crowded with pieces of every description. . . . No one looking from *this* side the battle [after it was done] can realize the feeling of the participants just on its eve. Slowly we [the ironclads] steamed along in single file, and

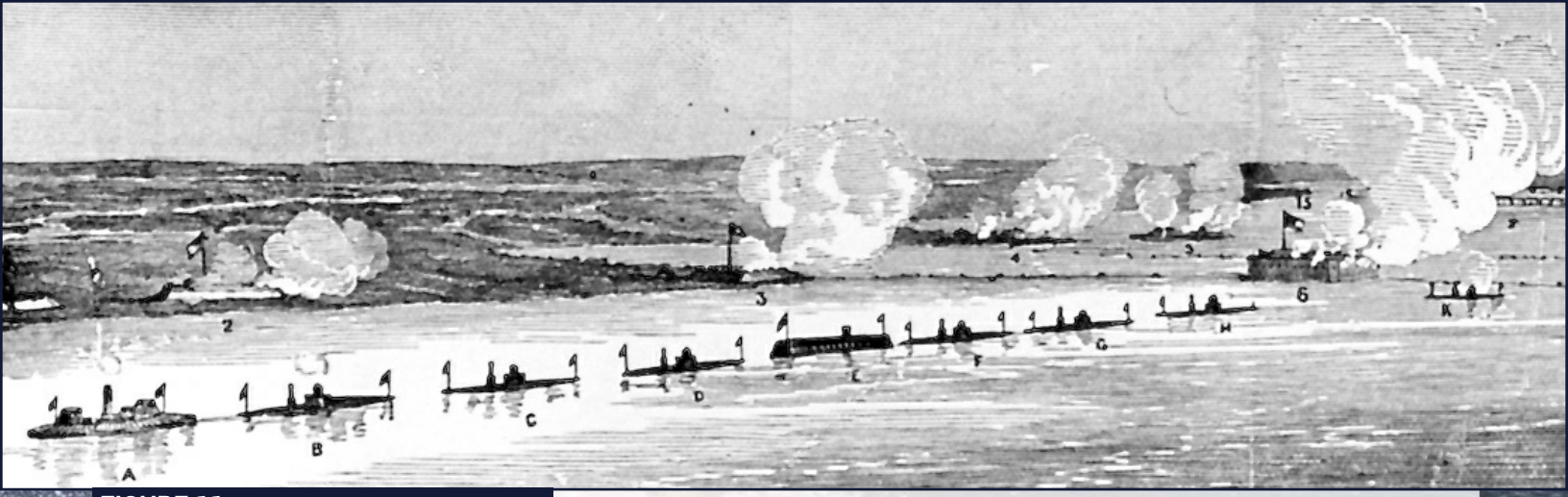

FIGURE 11
Detail of "Panoramic View of Charleston Harbor-Advance of the Ironclads, to the Attack, April 7, 1863." Seven *Passaic* class monitors in battle order: *Weehawken, Passaic, Montauk, Patapsco, Catskill, Nantucket, Nahant;* other ironclads: *Ironsides* and *Keokuk*. Fort Sumter (label 6) is just to the port side of the monitors *Weehawken* and *Passaic* (labels H and K).
Naval History and Heritage Command, NH 59269

> gradually there settled down a solemn hush almost death-like. . . . Suddenly like the crash of thunder, every [Confederate shore] battery opened, and for a few long moments the roar of guns the hiss and scream of shells, the quivering of the ship, and the tremendous explosions from our own heavy pieces, drowned the loud voices of command. . . . In less than half an hour, so furious was the fire, our turret was temporarily disabled, the top of the pilot-house blown off, the 11-inch gun disabled, smoke-stack riddled **(Figure 11)**.

Other ironclads were similarly damaged and the Union fleet was ordered to retire. The crews anticipated quick repairs and orders to renew the assault. But the *Passaic* and its sister ironclads remained at anchor. Holden became concerned for the health of the crew:

> Five days we lay thus, our discomfort growing almost unbearable. The turret was necessarily kept raised for action, and the sea constantly breaking over the decks, a constant stream of water was poured underneath it upon the blower belts, thus almost stopping the blowers and our supply of air, added to this, the hatches were necessarily kept down, and the tracking of grease down below, the darkness, the intensely foul air from the congregation of eighty men into so narrow a space, and the rolling of the ship, could not fail to enervate and sicken the healthiest crew.[25]

The attack on Charleston Harbor was not renewed; a massed assault by ironclads would not be attempted again in the course of the Civil War. Holden's published account

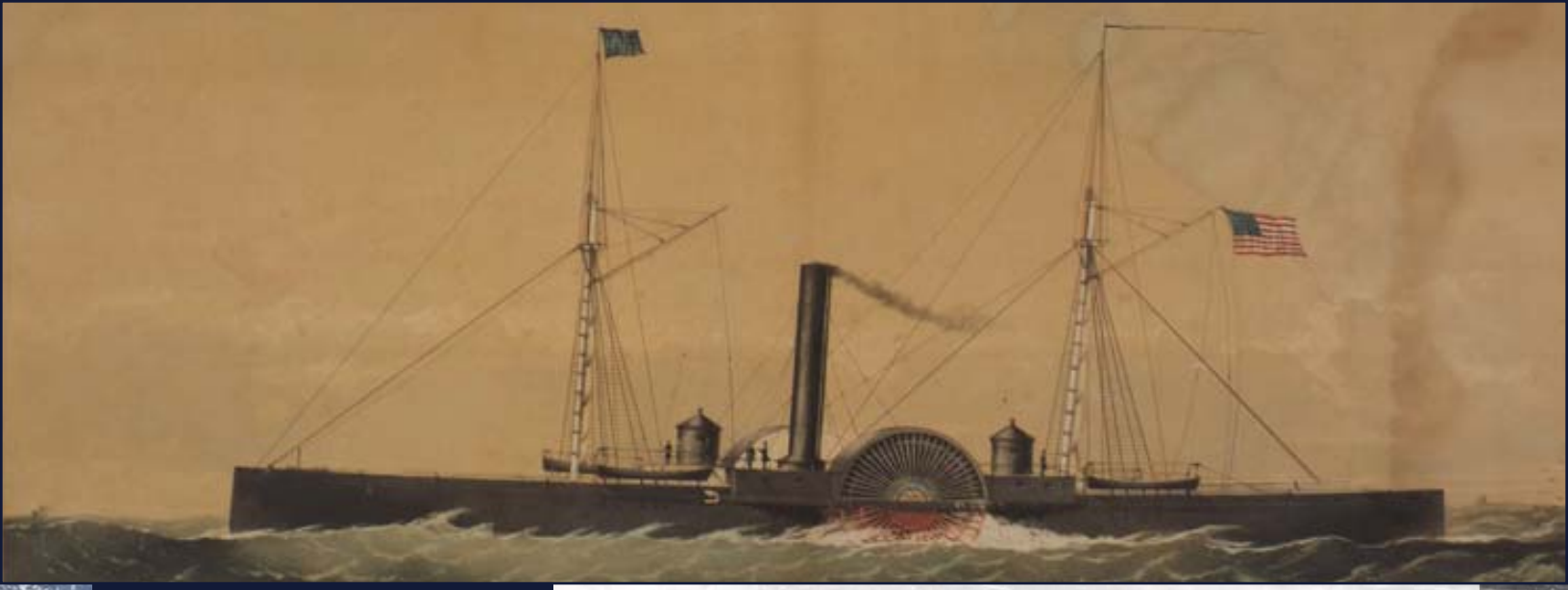

FIGURE 12
The double-ended wooden sidwheel guboat USS *Sassacus.*
catalogs.marinersmuseum.org/object/CL20589

describes a "fair and pleasant trip" aboard the *Passaic* to New York with plans to return south to participate in a renewed attack at some future date. In fact, the *Passaic* medical log tells a different story; he did *not* go north with the *Passaic.* On April 14, a new handwriting appeared in the medical log: "April 14, Port Royal—Doctor Holden was condemned by Board of Medical Survey and ordered north for medical treatment. Acting Asst. Surgeon A.S. Crampton ordered to *Passaic* for temporary duty, Port Royal, April 18, 1863."[26] The captain's log confirms that a "tug came alongside and took the Doctor, who is detached."[27] Holden's ironclad days were over.

USS SASSACUS

Following his recovery from dysentery and the hardships of ironclad service, Holden was assigned to temporary duty on a naval rendezvous ship in New York Harbor and from there to the naval hospital in New York. In August 1863, he was ordered to the USS *Sassacus,* a double-ended wooden sidewheel gunboat **(Figure 12)**.[28]

Holden's lively account of life aboard the *Sassacus* was published in 1864 in *Harper's New Monthly Magazine.*[29] The *Sassacus* departed Washington on December 3, 1863, headed for New Orleans with an ironclad in tow. Early in the cruise, "there came a crash, a heavy lurch, a shiver of the whole ship," as a sailing brig coming out of nowhere, sheared off the wheel-house of the *Sassacus.* The towed ironclad took evasive action and merely grazed the *Sassacus.* Hearing cries for help from the dark waters, the *Sassacus*' sailing master, along with the surgeon (Holden wrote in the third person, but was undoubtedly "the surgeon"), manned a small boat in search of survivors, though several men from the brig were lost. Back aboard the *Sassacus*, Holden tended to the wounded.

Following repairs at the Washington Navy Yard, the

Sassacus sailed on January 28, 1864, headed for North Carolina's Cape Lookout Shoals to hunt Confederate blockade runners. The *Sassacus* was then ordered to the "sounds of North Carolina, and, as the events proved, to battle."[30]

Holden faced one more epic naval battle. His report of the clash between the *Sassacus* and the CSS *Albemarle* appeared in *Century Magazine* in 1888 and, in slightly modified form, in the four-volume multi-author *Battles and Leaders of the Civil War* published by the Century Company between 1884 and 1888.[31]Even before its completion, the CSS *Albemarle,* with a double layer of two-inch iron plates and heavily armed, enjoyed a mythic reputation as the second *Merrimac.* The iron-encased prow, designed to "ram" enemy vessels, was fashioned from solid oak.

Holden's published description of the clash between the *Albemarle* and the *Sassacus* in Albemarle Sound near the Outer Banks of North Carolina on May 5, 1864, is simultaneously technical and thrilling. The *Sassacus,* anticipating an encounter with the *Albemarle,* had been fitted with a three-ton bronze "beak" to reinforce her bow. **(Figure 13)** As vessels on both sides commenced fire, Lieutenant Commander F.A. Roe, captain of the *Sassacus,* acted boldly to turn the tables on the *Albemarle* by using his own not-very-formidable ship as a ram **(Figure 14, next page)**. Holden, from his station "in the bow, on the main-deck, on a line with the enemy's guns," recalled the moment:

FIGURE 13
The ironclad CSS *Albemarle.*
wikipedia.org

> Straight as an arrow we shot forward to the designated spot [on the port side of the *Albemarle*]. Then came the order, "All hands lie down!" and with a crash that shook the ship like an earthquake, we struck full and square on the iron hull, careening it over and tearing away our own bows, ripping and straining timbers at the waterline.

The *Albemarle,* though damaged, fired point blank at the *Sassacus,* wreaking havoc among the crew. Holden continued:

> Through the starboard shutter, which had been partly jarred off by the concussion, I saw the port of the ram not ten feet away. It opened, and like a flash of lightning I saw the grim muzzle of a cannon, the gun's crew naked to the waist and blackened with powder; then a blaze a roar and the rush of the shell as it crashed through,

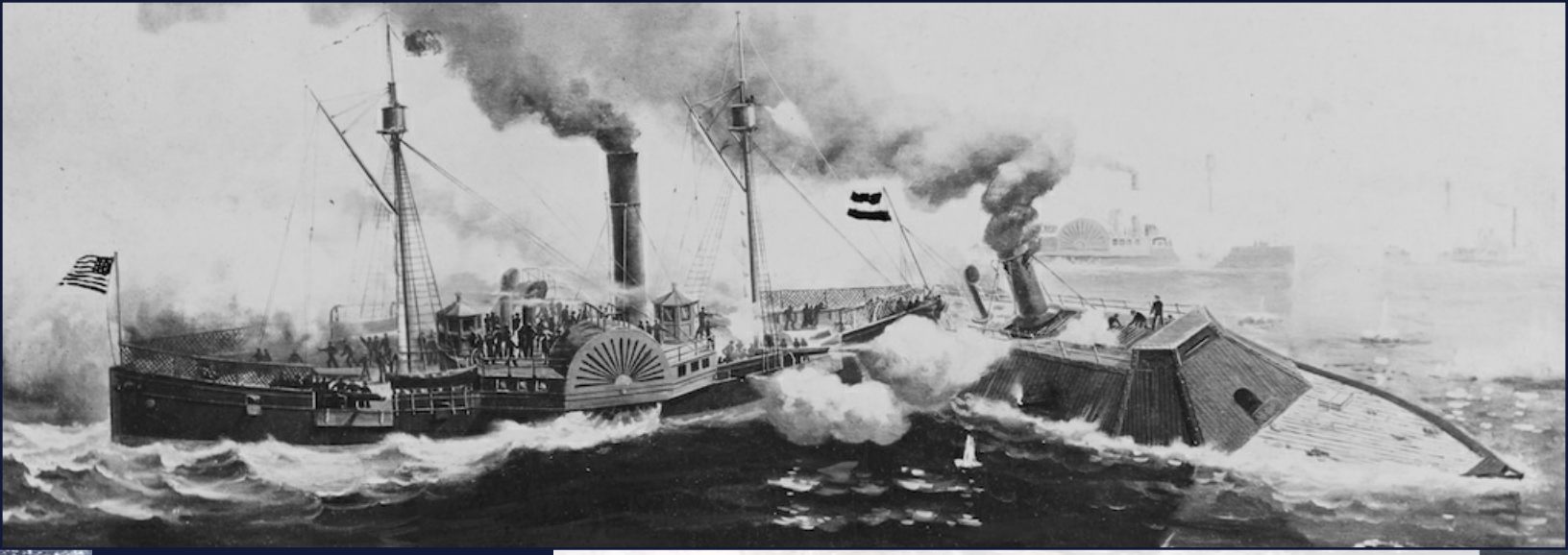

FIGURE 14
"The *Sassacus* and the *Albemarle*," showing the sidewheeler *Sassacus* ramming the metal-plated "ram" CSS *Albemarle*.
Naval History and Heritage Command, NH 5916

> whirling me round and dashing me to the deck. . . . [A] second shot from a Brooke gun almost touching our side crashed through, followed immediately by a cloud of steam and boiling water that filled the forward decks as our overcharged boilers, pierced by the shot, emptied their contents with a shrill scream that drowned for an instant the roar of the guns. The shouts of command and the cries of scalded, wounded, and blinded men mingled with the rattle of small-arms that told of a hand-to-hand conflict above.[32]

Holden described in vivid detail the "cries of agony from the scalded and frantic men." On the day following the battle, a terse official report from the *Sassacus,* signed by Acting Surgeon Holden, recorded the following casualties "arising on board this ship from the engagement." Of twenty wounded or scalded, five died, and five others were seriously scalded and in danger of dying. We can only imagine the grim scene in sickbay in the hours following the battle, as Holden, with little more than opium preparations to relieve pain, tried to ease the suffering of thirteen firemen, engineers, and coal heavers with critical burns and injuries. Seven others of varying ranks and posts were less seriously wounded and scalded.[33] The iron-plated *Albemarle* retreated to the Roanoke River and was destroyed in late October in a daring commando night raid.

The crippled *Sassacus,* following hasty repairs, remained in the North Carolina sounds for six weeks in support of Union-held eastern North Carolina. In late June, steaming stern-first to spare her damaged bow, she joined the Union fleet in the James River. Holden was put in charge of the medical department of the James River squadron. Although there were no major naval battles in the James River, the number of men, vessels, and ships' surgeons under Holden's medical oversight

FIGURE 15
"Officers of the 'Ward' U.S.A. General Hospital, Newark, N.J." Holden, in civilian clothes and appearing very gaunt, is almost certainly the bearded physicians seated in the front row, far left.
National Library of Medicine, Images in the History of Medicine

was impressive. He was also assigned to shore duty at the siege of Petersburg (1864), making "frequent visits to the battle-fields."[34]

The *Sassacus* remained on James River Squadron duty, despite extensive unrepaired damages, until the end of September 1864, when the new captain, Commander John L. Davis, reported to the Secretary of the Navy that his ship had arrived at the Philadelphia Naval Yard.[35] Following repairs, *Sassacus* returned to action with the North Atlantic Blockading Squadron for the duration of the war. But Acting Assistant Surgeon Edgar Holden was no longer aboard. He had left the *Sassacus* and resigned from the Union Navy, returning to Newark in October 1864.

RESIGNATION

The reasons given for Holden's resignation from the Navy in late 1864 are somewhat unclear, although no-one could deny that he had done his duty and more. On October 10, 1864, Holden wrote to the Secretary of the Navy from the *Sassacus,* docked at Philadelphia: "Sir: I have the honor to tender my resignation as an Assistant Surgeon in the U.S. Navy owing to urgent and peculiar demand for my professional care in my family. Very respectfully Your Obt. Servt. Edgar Holden, Asst. Surg." The request was forwarded and approved. On October 11, 1864, William Whelan, chief of the Navy's Bureau of Medicine and Surgery, responded in a handwritten note: "Mrs.

Holden's health disqualifies him for service [illegible] Navy."[36] Holden had married Katharine Hedden of East Orange, New Jersey, while he was still a house physician in Brooklyn in the months prior to the outbreak of war. It is possible that Katharine was ill with tuberculosis, the probable cause of her death in 1870 at age 33.[37]

As of January 1864, Holden had logged sixteen months at sea, four months on shore or other duty, and seven months "unemployed."[38] The latter designation included home leaves and periods of incapacity from illness. By the time of his resignation in October 1864, another ten full months of service, at least half of this time at sea, was added to his war record.

Holden must have taken a month or two after his resignation from the Navy in October 1864 to attend to family or personal health problems. His younger brother, Henri, who left Princeton to join the Army, had died of tuberculosis in 1863. As the sole surviving son with aging parents, three sisters, a two-year-old daughter, and a pregnant (and possibly ill) wife, Holden would have had pressing family obligations in Newark.

Although he had done his duty to the Union as a naval surgeon, Holden signed on as an acting assistant surgeon at the Ward United States Army Hospital in Newark, and served there until the hospital was decommissioned in September 1865[39] **(Figure 15, previous page)**. "An Inquiry into the Causes of Certain Diseases on Ships of War," his first medical publication, appeared in the *American Journal of the Medical Sciences* in 1866.[40]

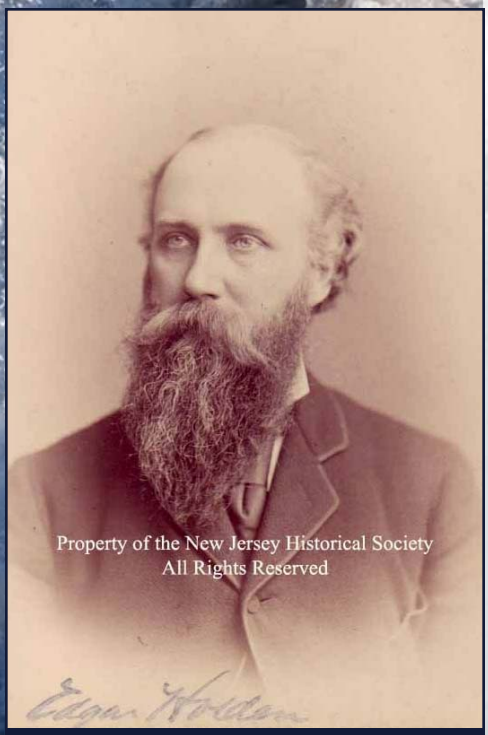

FIGURE 16
Studio portrait of Holden during his active years of practice in Newark, ca 1870s.
New Jersey Historical Society

POST-WAR CAREER

Holden built a distinguished multi-faceted postwar career **(Figure 16)**. As medical director of Newark's Mutual Benefit Life Insurance Company, he established guidelines for the company's nationwide examining force of local physicians and analyzed patterns of disease (particularly tuberculosis) based on company statistics. In addition to general medical and surgical practice, Holden was a respected consultant in circulatory disorders and tuberculosis of the lungs. He did extensive experiments on a device called the sphygmograph, a forerunner of the modern blood pressure apparatus. In all these fields, Holden published frequently in the state and national medical literature.

A happy second marriage and pleasant family life enriched Holden's postwar decades **(Figure 17, next page)**. His spare hours were occupied by modest literary efforts (some published privately) and family musical evenings in which he played the flute. He had some skill at art, and enjoyed sketching

FIGURE 17
Holden family, summer 1908, at their country home in Chatham, N.J. Holden's second wife, Helen, is holding a grandaughter. The young man in the foreground is son-in-law James Brown Burnett, Jr., the baby's father.

William B. Birdsall family collection

trips to Morris County and the Jersey shore **(Figures 18, 19, next two pages)**.[41] After some years of poor health, Holden died suddenly in 1909 of heart disease at the family's summer home in Chatham.

Dr. Sandra Moss *is a retired internist who served as president of the Medical History Society of New Jersey and president of the American Osler Society, an international organization for clinician historians. She has published and spoken extensively about New Jersey's medical history.*

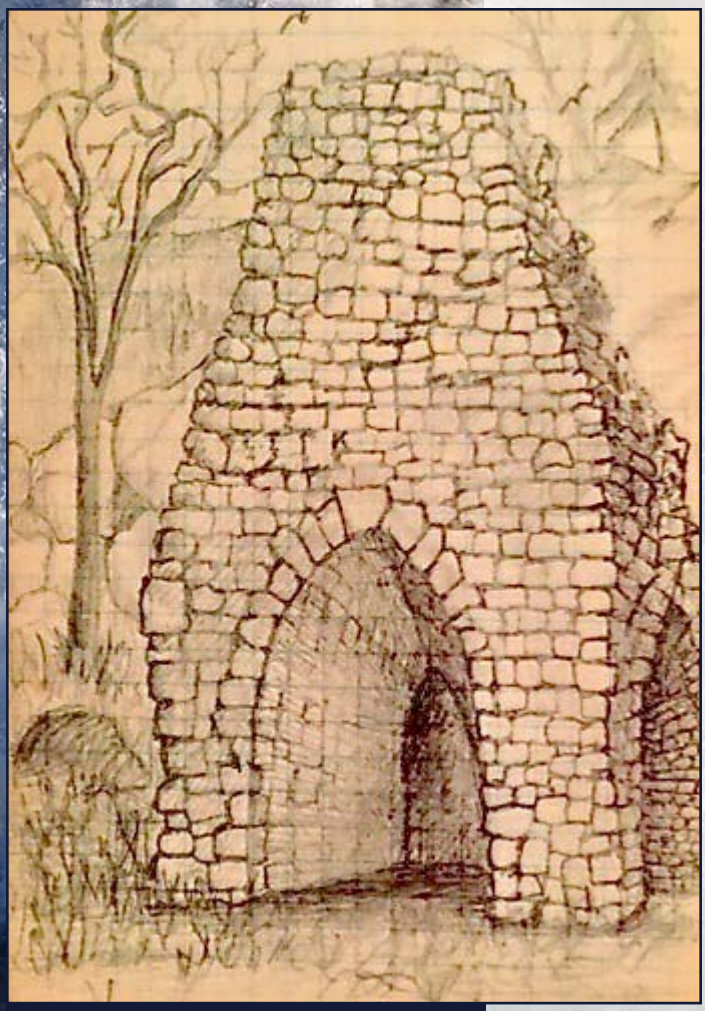

FIGURE 18
"Abandoned Furnace, Morris County, N.J.," sketch by Holden, 1882.
William B. Birdsall family collection

ENDNOTES

1. William B. Birdsall, Joan Smith, and J. Bruce Burnett, descendants of Edgar Holden, kindly shared their family records and personal research. For a detailed history of Holden's personal and family life, education, military career, and medical life, see Sandra W. Moss, *Edgar Holden, M.D., of Newark, New Jersey: Provincial Physician on a National Stage* (XLibris, 2014). I am indebted to Holden's great grandson, William B. Birdsall, for permission to use original images from his family collection.
2. In 1861, Pingry founded the Pingry School in Elizabeth, New Jersey.
3. "John Stillwell Schanck, M.D., LL.D., Class of 1840," *Princeton University Bulletin* 10 (1898): 17–18.
4. Alumni Records, Princeton University Archives.
5. James J. Walsh, *History of Medicine in New York: Three Centuries of Medical Progress* (New York: National Americana Society, 1919), 2:428.
6. The almshouse hospital later matured into Kings County Hospital.
7. Thomas Turner, "Annual Report of the Resident Physician of Kings County Hospital," in *Annual Report of the Superintendents of the Poor of Kings County, for the Year Ending July 31, 1861* (Brooklyn, Daily Eagle Print, 1861), 51–53.
8. J. Henry Clark, "The First Fifty Years of the District Medical Society of Essex County," *Transactions of the Medical Society of New Jersey* (1867): 77–181 (Civil War records, 143–76).
9. Frank R. Freemon, *Gangrene and Glory: Medical Care during the American Civil War,* (Madison NJ: Associated University Presses, c1998), 92–93.
10. "Surgeons for the Navy," *New York Times,* October 9, 1861.
11. National Archives and Record Administration, Records of Officers, M330, Roll 9, 1164.
12. Edgar Holden, "The *Merrimac* & *Monitor* from the Frigate *Minnesota*," J. Bruce Burnett family papers. Holden used the spelling *Merrimac.* The deck on a fighting ship going into action was covered with sand to absorb blood and prevent the gunners from slipping as they moved about the deck and operated the cannons.
13. S. Dana Greene, "In the 'Monitor' Turret," in *Battles and Leaders of the Civil War,* ed. Robert Underwood Johnson and Clarence Clough Buel (New York: Century Co., 1887), 1:719–29; A. Mindell, *Iron Coffin: War, Technology, and Experience aboard the USS* Monitor (Baltimore, Johns Hopkins University Press, 2000), 65–68.
14. Clark, "First Fifty Years, 166.
15. Gideon Welles to Edgar Holden, October 11, 1862, US Steamer *Passaic* Records, 1862–1866, Mss Collection 3064, Manuscripts and Archives Division, New York Public Library.
16. "*Passaic,*" Medical Journals of Ships, 1813–1910, Medical Records and Reports on Patients, Headquarters Records, Records of the Bureau of Medicine and Surgery, RG 52, National Archives and Records Administration, Washington.
17. Mindell, *War, Technology, and Experience,* 62.
18. Edgar Holden, "The First Cruise of the 'Monitor' *Passaic,*" *Harper's New Monthly Magazine* 27 (October 1863): 577–95.
19. Holden, "First Cruise of the 'Monitor' *Passaic,*" 578.
20. "General Muster Book, U.S.S. Iron Clad Steamer *Passaic,*" September 1862–October 1863, U.S. Steamer *Passaic* Records, 1862–1866, MssCol 3064, New York Public Library.
21. Holden, "First Cruise of the 'Monitor' *Passaic,*" 580; William F. Keeler to Ann Keeler, December 25, 1862, in William F. Keeler, *Aboard the USS Monitor: 1862, The Letters of William Frederick Keeler, U.S. Navy*, ed. R.W. Daly (Annapolis MD: United States Naval Institute, 1964), 251.
22. Holden, "First Cruise of the 'Monitor' *Passaic,*" 581–83.
23. *Passaic,* Medical Journals of Ships, 1813–1910, Box 155, Port Royal SC, 1862–1865, Medical Journals and Reports on Patients, Headquarters Records, Records of the Bureau of Medicine and Surgery, RG 52, National Archives and Records Administration, Washington.
24. *Passaic,* Medical Journals of Ships, 1813–1910. Tincture of opium was an effective antidiarrheal medication.
25. Holden, "First Cruise of the 'Monitor' *Passaic,*" 594–95.
26. *Passaic,* Medical Journals of Ships, April 14, 1863.
27. *Passaic* 11/25/62–5/12/63," Logs of U.S. Naval Ships, 1801–1915, Records of the Bureau of Naval Personnel, RG 24, National Archives and Records Administration, Washington.

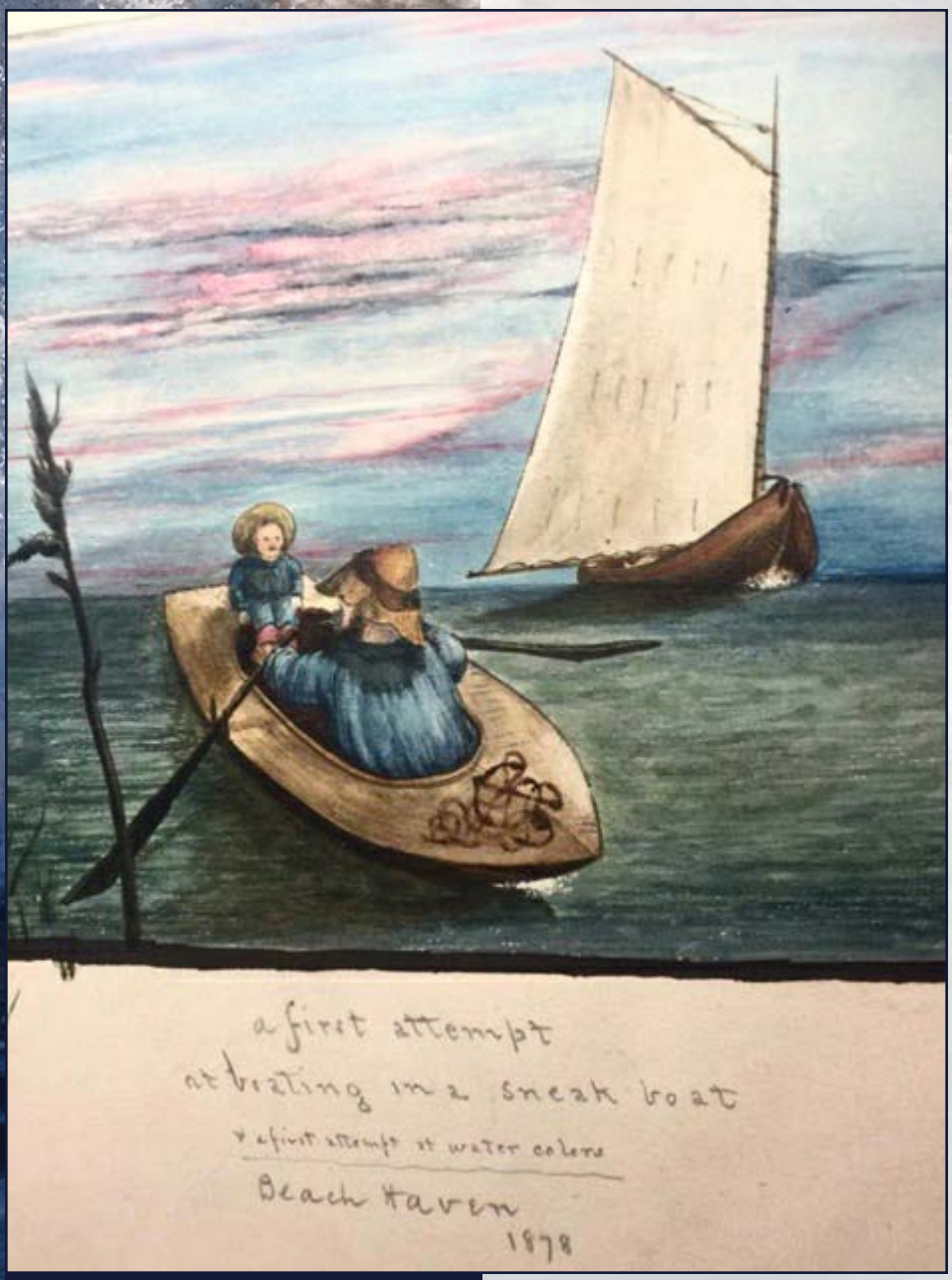

FIGURE 19
"A First Attempt at Water Colors, Beach Haven, N.J.," water color painting by Holden, 1878.
William B. Birdsall family collection

28. Records of Officers, Old Military and Civil Records, Textual Archives Services Division, M330, Roll 9, #1164, National Archives and Records Administration, Washington.
29. Edgar Holden, "A Cruise on the *Sassacus*," *Harper's New Monthly Magazine* 29 (November 1864): 712–24.
30. Holden, "A Cruise on the *Sassacus*," 724.
31. Edgar Holden, "The 'Albemarle' and the 'Sassacus': An Attempt to Run Down the Iron-Clad with a Wooden Ship," *Century Magazine* 36 (1888): 427–32. Edgar Holden, "The 'Albemarle' and the 'Sassacus,'" *Battles and Leaders of the Civil War* IV (New York: Century Company, 1888), 628–33.
32. Holden, "The 'Albemarle' and the 'Sassacus,'" 429–30.
33. Edgar Holden to Lt. Cmdr. F. A. Roe, 6 May 1864, in United States Naval War Records Office, *Official Records of the Union and Confederate Navies in the War of the Rebellion* (*ORUCNWR*) (Washington: Government Printing Office, 1894–1922), 9:742–43.
34. "Holden, Edgar," in *National Cyclopaedia of American Biography* (New York: James T. White & Co., 1916), 15:92; "The Medical Profession of Essex County," in *History of Essex and Hudson Counties, New Jersey,* comp. William H. Shaw (Philadelphia: Everts & Peck, 1884), 1:321–22.
35. Cmdr. John L. Davis to Gideon Welles, September 26, 1864, *Official Records of the Union and Confederate Navies in the War of the Rebellion* (*ORUCNWR*) (Washington: Government Printing Office, 1894–1922), 10:484.
36. Joan Lowell Smith, family papers.
37. Moss, *Edgar Holden, M.D., of Newark, New Jersey,* 423.
38. *Register of the Commissioned, Warrant, and Volunteer Officers of the Navy of the United States to January 1, 1864* (Washington, Government Printing Office, 1864), 48–49.
39. For a history of the Ward Hospital, see Sandra W. Moss, "To Treat War's 'Wounded and Diseased': Newark's Civil War Hospital," *New Jersey Heritage Magazine* 2 (2003): 18–28.
40. Edgar Holden, "An Inquiry into the Causes of Certain Diseases on Ships of War," *American Journal of the Medical Sciences* 51 (1866): 75–84.
41. William B. Birdsall, personal communication.