

THE GROG



A Journal of Navy Medical History and Culture

Navy Medicine and the Great Earthquake at Arica

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Cover features the print, "Earthquake at Arica." This print first appeared in *Harper's Weekly*, 21 Nov. 1868, p. 749.

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THE GROG

A Journal of Navy Medical History and Culture

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INTRODUCTION

Even though this end-of-the-year edition of THE GROG contains but a modest sum of articles, we contend that these original yarns are each worth their weight in grog (and, of course, we mean this from the perspective of a parched seadog in the age of sail). In "'A Most Memorable Record to Their Lasting Honor and Reputation': Navy Medicine and the Great Earthquake at Arica," the esteemed military historian Dr. John Greenwood offers our kind readers the epic tale of the great earthquake (and tidal wave) that destroyed the port city of Arica in what is now Chile. Though no evidence will purport that this 1868 event resulted in what we may term the first humanitarian assistance/disaster relief operation effort by the Navy, it is a story that needs to be added to the greater narrative of naval history. U.S. naval forces perform a wide range of humanitarian operations on a regular basis and as you will read in Dr. Greenwood's article, this role began into well into the nineteenth century.

In "'To Respectfully Solicit Your Fostering Protection': The Professorship of Nautical Medicine and Military Surgery," University of Pennsylvania (Penn) senior archivist J.J. Ahern presents recently uncovered letters of Navy Surgeon Thomas Harris concerning the establishment of a course in nautical medicine and military surgery at Penn. Dr. Harris, who would later serve as Chief of the Bureau of Medicine and Surgery, is without question the progenitor-in-chief of what we may term Navy medical education, but he rarely gets the recognition he deserves in either military or medical history.

Finally, oral historian, par excellence, COL Richard Ginn presents "The Dilemma of the Individual Augmentee." His article is part of a series published in THE GROG inspired by the oral histories that we have conducted with active duty Navy medical personnel over the past year.

As always, we hope you enjoy your humble tour of Navy medicine's past. Stay tuned for more exiting tales in 2012.

THE GROG is a free quarterly publication of the Office of Medical History dedicated to the promotion and preservation of the history and culture of the Navy Medical Department. Articles and information published in THE GROG are historical and are not meant to reflect the present-day policy of the Navy Medical Department, U.S. Navy, and/or the Department of Defense.

THE GROG

A JOURNAL OF NAVY MEDICAL HISTORY AND CULTURE



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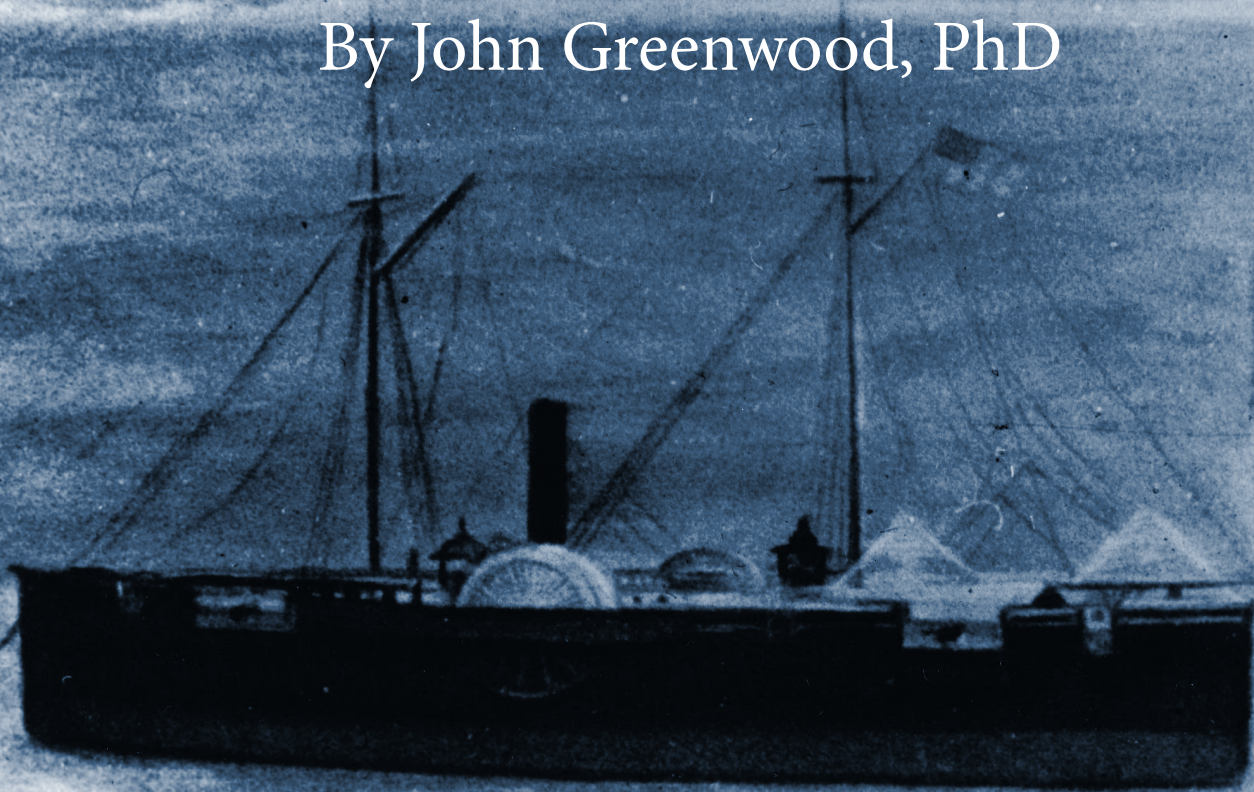
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For more Navy Medical History and to get a glimpse at our collections
please check out our blog "Tranquillity, Solace, and Mercy" at

<http://usstranquillity.blogspot.com>

"A Most Memorable Record to Their Lasting Honor and Reputation"

By John Greenwood, PhD



Painting of USS *Wateree* in primitive style, depicting the gunboat stranded at Arica, Peru (now part of Chile) after she was washed ashore by a tidal wave on 13 August 1868.

Naval History and Heritage Command

Just north of Arica, Chile, alongside the Avenida Las Dunas as it cuts through the Chinchorro beach and dunes skirting the Pacific Ocean, lies a unique Chilean national monument, the rusting boilers of what now remains of the USS *Wateree*. The fate of the *Wateree* and its crew is part of a larger sto-

ry that forms one of the most unusual episodes in the long history of the U.S. Navy's response to natural and man-made disasters around the world. This is the story of one of the very few disasters which have ever directly involved the Navy from its earliest moments, first as victims and only then as responders.¹

Navy Medicine and the Great Earthquake of Arica

RESETTING THE FORCE IN THE SOUTH PACIFIC

After the Civil War, the Navy reset its far-flung squadrons around the world. In the Pacific the unsettling presence of a number of foreign warships then operating off of the North, Central, and South American coasts had to be addressed. A strong French naval force supported the French intervention in Mexico that began in late 1861, and Spain renewed its interference against its former colonies Chile and Peru in the so-called Chinch Islands War (1864-66). This situation had become so dire that on 10 August 1865 Secretary of State William H. Seward told Secretary of the Navy Gideon Welles that “our naval forces may need strengthening in that quarter.”²

Welles and the Navy Department were well aware of the problems in the Pacific. An important part of the Navy’s planned reinforcement and modernization of the postwar U.S. naval presence there was to replace some of its aging sailing ships with more modern wooden, iron-clad, and iron-hulled steam-powered warships. The modernization program actually began in January 1864 when the USS *Waterlee* was assigned to the Pacific Squadron. The *Waterlee* was a modern two-masted, iron-hulled, sidewheel steamer equipped with 12 guns. With a draft of only nine feet, it could enter the shallow, smaller harbors along the Pacific coast. Actually, it was a flat-bottomed “double-ender” gunboat with rudders at both ends and designed for riverine operations in the shallow inlets and waterways of the

south and not for open-ocean cruising. After completing a long and tortuous voyage from Philadelphia, the *Waterlee* was repaired at Mare Island Navy Yard and reentered service along the Central and South American coasts in February 1865.³

After harassing the west coast of South America for two years, destroying undefended Valparaiso, Chile (31 March 1866), and then being rebuffed in its attack on Callao by the Peruvian defenders (2 May 1866), the Spanish fleet sailed west to the Philippines, never to return. With the situation along the South American coast still considered a state of war and unresolved, in August 1866, the Navy Department reorganized the Pacific Squadron into the North and South Pacific Squadrons better to position its naval forces to cover their vast areas of responsibility. The new South Pacific Squadron’s patrol area was enormous: extending from Panama through the Straits of Magellan and Cape Horn at the southernmost tip of South America and westward as far as Australia. The squadron now consisted of six ships with the USS *Powhatan*, the flagship, and the storeship *Fredonia*, at Callao (Lima), Peru, which was its main anchorage and home port. The remainder of the squadron consisted of the *Tuscarora*, positioned at Valparaiso, Chile, and the *Waterlee*, *Nyack*, and *Dacotah*.⁴

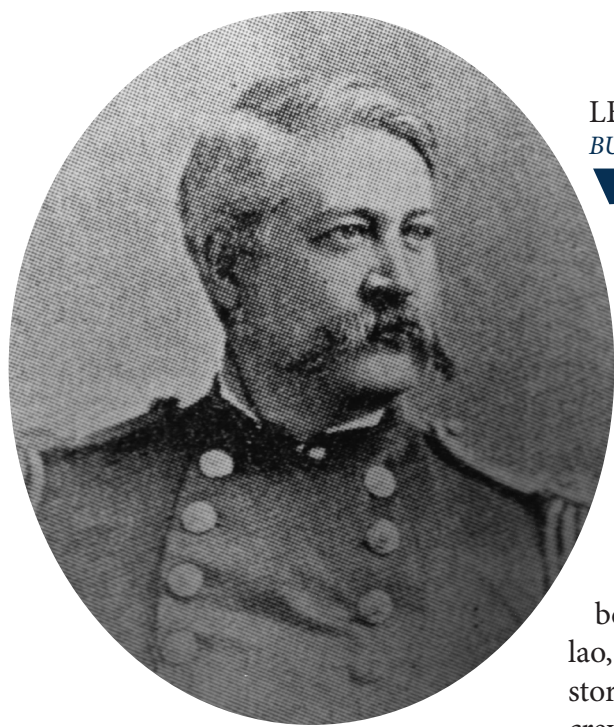
The squadron’s attention remained firmly fixed on the western coast of South America from Peru south and on the Chinch Islands. Constant vigilance was maintained along the Peruvian and Chilean coasts to

guard against any renewed Spanish interference that might spark a recurrence of the events of 1866 as well as to keep a watchful eye on frequent uprisings and revolutions that might threaten American interests, especially those in Peru. The ships regularly visited major ports along the coast where American citizens and commercial interests were prominent, and only infrequently ventured to the outer reaches of the squadron’s patrol area.⁵

USS WATERLEE AND USS FREDONIA

The *Waterlee* and *Fredonia* and their crews are the American dramatic personae of this story. Under the command of CDR (later Commodore) James H. Gillis since May 1867, the *Waterlee* was in constant motion visiting port cities from Panama to Valparaiso. Its shallow draft allowed it to visit many of the smaller ports along the South American coast that were largely inaccessible to the squadron’s larger vessels such as the *Powhatan*, *Tuscarora*, and *Dacotah*.⁶

The *Waterlee*’s surgeon, George F. Winslow, was raised in New Bedford, MA, and attended the Friends’ Academy there in preparation for entrance into Harvard College. He apprenticed with Dr. Charles D. Stickney of New Bedford for two years and then entered Harvard Medical School at the age of 18. He left Harvard Medical School in June 1862 after passing a Navy medical examining board and was commissioned in the Navy Medical Corps as an Acting Assistant Surgeon in July with a waiver from Secretary Welles



LEFT. Surgeon George F. Winslow
BUMED Library and Archives

because he was under 21 years of age. His first assignment was on the steamer USS *Morse* in the James River Flotilla supporting the Army of the Potomac. He was transferred to the USS *Osceola* in the South Atlantic Blockading Squadron and promoted to Assistant Surgeon in May 1864 after officially receiving his medical degree from Harvard that year. He saw action at Forts Fisher, Strong, and Buchanan, along the Cape Fear River. At the personal direction of RADM David D. Porter, he was put in charge of Confederate hospitals at Ft. Fisher following the surrender, and performed all of the operations himself without assistants or trained nurses. Winslow was then in the campaigns against Wilmington, NC, and Richmond, VA, through the end of the war. After serving on the apprentice ship USS *Sabine* from September 1865 to May 1867, he was promoted to Passed Assistant Surgeon in May 1867 and assigned to the South Pacific Squadron in July 1867 and as the surgeon on the *Wateree* in early September.⁷

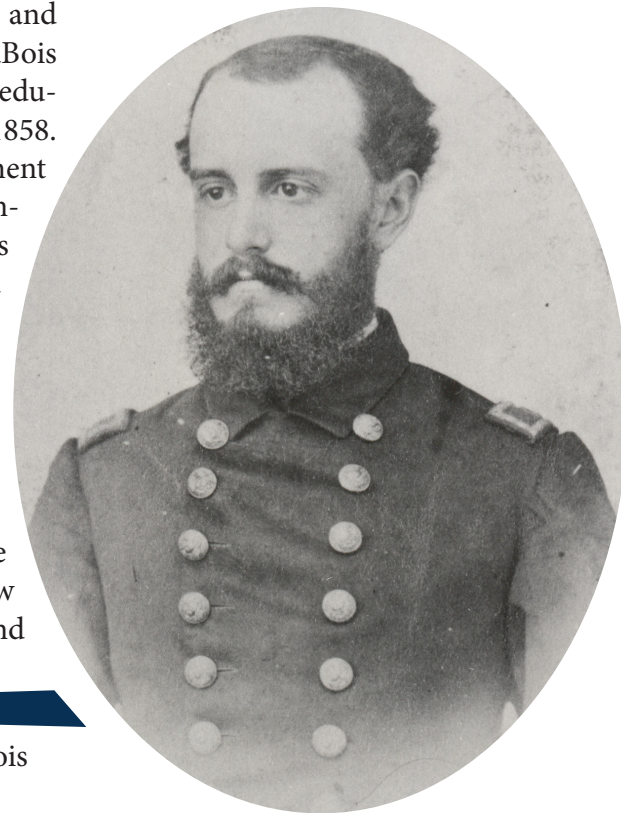
By far, the veteran of the Navy's

Pacific force, the wooden bark *Fredonia* had been a storeship since it was first fitted out in January 1847 and had also served as a transport during the Mexican War. It was sent to the Pacific twice and ended up as a permanent storeship for the Pacific Squadron at Valparaiso, Chile, in September 1853 before moving to Callao, Peru, in 1862. As a stationary storeship, the *Fredonia* had a small crew of five officers and 27 men who usually led a fairly tranquil existence supporting the needs of the squadron's ships when they arrived in port for replenishing. According to an unidentified officer of the *Wateree*, however, the ship now "was absolutely falling to pieces" after its many years of riding at anchor.⁸

In 1867, Passed Assistant Surgeon Frank L. DuBois took over as surgeon on the *Fredonia*. Born and raised in New London, PA, DuBois completed his undergraduate education at Lafayette College in 1858. He then attended the Department of Medicine, University of Pennsylvania, in Philadelphia for his medical training and received his medical degree in March 1862. He was appointed an Assistant Surgeon in May 1862 and served at the Washington Navy Yard from June to September 1862. During this time he volunteered for duty with the Army of the Potomac and saw action at the battles of Second

Bull Run and Chantilly in August-September 1862. He was then assigned to blockade duty on the USS *Tioga*, where both crew and DuBois came down with yellow fever. After recovering, he was assigned to the Mississippi Squadron and then the Philadelphia Navy Yard prior to being sent to Panama onboard the storeship *Jamestown* as the surgeon and officer in charge of medical supplies in 1866. In January 1867 he was sent down to Callao as the surgeon for the storeship *Fredonia*.⁹

While the *Fredonia* was anchored at Callao, a very deadly epidemic of yellow fever broke out in the spring of 1868 in the port and Lima. To protect the crew from this deadly menace, for which neither cause nor cure were then known, the *Fredonia* was towed south to the port of Pisco, Peru. From 3 April to 26 May the *Wateree* lay at anchor in the bay of Arica, Peru, a peaceful and fever-free port some 600 miles to the south of Callao in the disputed border



RIGHT. Surgeon Frank L. DuBois
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area between Peru and Chile. She then steamed north to Callao, arriving on 3 June. There the *Wateree* was ordered south again to Pisco to take the *Fredonia* under tow and back to Arica, which the ships reached on 9 June. Arica now became the replenishment port for the ships of the South Pacific Squadron. The city of perhaps 3,000-4,000 was nestled between two fingers of the Cordillera coastal range of mountains that terminated at the Pacific. A 500-foot bluff, the "El Morro de Arica," simply called the Morro, crowned the southernmost of these fingers, overlooking the city and sea. Large parts of this bluff had collapsed into the ocean during previous earthquakes so that just offshore lay dangerous rocky reefs and the prominent island of Alacran which guarded the anchorage from the south. From the Morro, a crescent shaped bay gently curved to the east and north providing good anchorages. Then a bustling port with a steady flow of commercial traffic, Arica was second only to Callao among Peru's ports. This strong economic position derived from its control of land-locked Bolivia's access to the Pacific for its import and export trade. Compounding this control, the city was the terminus of Peru's lone operating railroad, the Arica and Tacna Railroad, running 40 miles inland to Tacna, which sat on the main overland trade routes into Bolivia.¹⁰

When it steamed to Arica with the *Fredonia*, the *Wateree* was under orders to move to the North Pacific Squadron. After more than three years of heavy sea duty, however, it required extensive repairs to its boilers and engines before that journey north to San Francisco. In a most welcome respite from their normal routines, the officers and

An occasional shock of earthquake was felt at times, causing a momentary panic, but, as it passed with no serious results, it was soon forgotten, as others had been.

men of both ships enjoyed the pleasant people and environs of Arica from their arrival in early June on while the *Wateree's* crew completed the needed repairs. A recent Naval Academy graduate now serving on the *Wateree*, Midshipman (later LCDR) Edward W. Sturdy, found that the leading members of Arica society "were most hospitable, especially to American naval officers." For a young officer, the frequent parties and dances on the ships and ashore with the fashionable young ladies of Arica made this duty station all the more pleasant.¹¹

One of the few disquieting aspects of this otherwise idyllic setting was that Arica lay in an area of western South America that had a long and disastrous history of major earthquakes. What the locals called temblores, or temblôrs, shook the ground with increasing frequency and violence almost daily during July and into early August. While these temblôrs were a relatively common phenomenon in that part of South America, the increasing activity alerted the wary citizens to the danger of a possible terremoto, a ground mover or earthquake. Paymaster (later RADM, retired list) Luther G. Billings of the *Wateree* noted that the American sailors remained "in blissful ignorance" of what this seismic activity portended and "with an ignorance soon to be enlightened, smiled calmly at their [the locals] fears . . ." Sturdy confirmed the same nonchalance: "An occasional shock of earthquake was felt at times, causing a momentary panic, but, as it passed with no seri-

ous results, it was soon forgotten, as others had been."¹²

"EVERYTHING SEEMED QUIET AND SAFE"

On Thursday, 13 August 1868, Sturdy recalled that "the sky presented no remarkable appearance, the air felt as usual, and everything seemed quiet and safe." When the watch changed at 1600 Acting Ensign John Brann noted in the *Wateree's* log: "Commences with clear and pleasant weather; smooth sea and light breeze from S.W. by S." Shortly after 1700 Billings was sitting with CDR Gillis in the *Wateree's* cabin following dinner, when they "were startled by a violent trembling of the ship, similar to the effect produced by letting go the anchor." As they ran on deck and looked shoreward they saw "a great cloud of dust rapidly approaching from the southeast, while a terrible rumbling grew in intensity, and before our astonished eyes the hills seemed to nod, and the ground swayed like the short, choppy waves of a troubled sea." The log recorded "at 5:05 p.m. heavy shock of earthquake, which lasted 10 minutes, accompanied by a low rumbling sound, and causing the ship to tremble violently all over, and saw portion of the Morro fall away, the houses on shore tumbling down."

An enormous dust cloud covered the town and then rolled on, passing over the ships. When they could see again, Billings and Gillis saw nothing but devastation. Gillis later reported that "while standing there, looking at the city, I observed

the buildings commence to crumble down, and in less than a minute the whole city was but a mass of ruins, scarcely a house being left standing.”¹³

On the *Fredonia*, Surgeon Frank DuBois noted that it was “just after dinner (five o’clock and some minutes) . . . suddenly the ship began to tremble violently, and we rushed on deck to learn the cause, which we already suspected. We saw the town of Arica, the plains around and the high land to the southward, enveloped in clouds of dust, while huge rocks were falling from the crest of the Moro [Morro] into the sea.” The first of possibly two enormous earthquakes centered in the southern Peru sector of the Peru-Chile (Atacama) trench, either just off the coast slightly northwest of Arica or actually in the harbor of Arica itself, had hit the entire Peruvian coastal region. At an estimated magnitude of 8.5-9.0 (Richter Scale), this was one of the most powerful earthquakes ever recorded to that time and today remains the sixth largest earthquake by magnitude on record. This terremoto’s most destructive effects were felt along South America’s western coast from Pacasmayo in northern Peru, some 400 miles north of Callao, to as far south as Coquimbo, Chile, nearly 1,400 miles south of Callao and 800 miles south of Arica, and as far inland as La Paz, Bolivia (139 miles).

By far the heaviest damage and loss of life were in Peru where the coastal cities of Pisco, Mollendo, Camana, Chala, Ilo, Onoña, and Arica, as well as Pisagua, Iquique, and Mejillones on the coast south of Arica were largely destroyed. The inland cities of Arequipa and Moquegua were also virtually leveled, while Tacna, the mining town of Cerro

de Pasco, and many others suffered severe damage. Some coastal cities in northern and central Chile were also damaged. Seismologists now call the Arica earthquake a “true giant” of a “tsunamigenic earthquake” because, like many of the largest ruptures along this trench, it generated an enormous tsunami. The inland cities would be spared the following tsunami waves, at that time called tidal or seismic sea waves, which vastly multiplied the destruction already inflicted on the coastal cities.¹⁴

On board the *Wateree* and *Fredonia*, the observers, most of them already conditioned to war in all its horrors, were stunned. Billings later wrote: “How long did it last? I cannot tell. No one seemed to take note of time. It was a horrid nightmare, a dream from which we would presently awake; but the agony and suffering before us were too real and apparent to be the effects of imagination.”¹⁵

On the *Fredonia* DuBois saw “the inhabitants were frantically rushing hither and thither in the street nearest the sea.” Despite this violent upheaval on land, the ships at anchor “seemed perfectly safe. . . the water showed no signs of disturbance. It was calm and unruffled as a miniature lake.” On board the *Wateree*, however, the officers feared a seismic sea wave similar to the one that had beached the USS *Monongahela* in the streets of Frederickstadt, St. Croix, Danish Virgin Islands, on the previous 18 November. They watched the sea carefully, but saw no signs of the dreaded wave. Nonetheless, Gillis ordered Stuyvesant to take all necessary actions so that the guns and heavy pieces of equipment were secured, life lines put up fore and aft, the anchors and chains read-

ied to slip, an additional anchor let go, and the hatches battened down. The log book also recorded that all boats were also lowered in readiness “to send assistance on shore.” In short order, the crew completed this work. The *Wateree*’s boilers and engines were under repair and unusable, so it could not put to sea or maneuver in any way to escape the waves if they came. On board the *Fredonia*, George W. Doty took similar precautions.¹⁶

Crowds soon gathered along the beach and mole asking the warships for help in rescuing their loved ones in the ruins or to take them to safety on board. With no apparent threat from the sea and the ship readied for any danger, at 1720 Gillis headed ashore in the ship’s whaleboat with a landing party of 40 men armed with picks, shovels, and other tools along with the ship’s surgeon, George Winslow, “with his case of instruments.” The whaleboat’s crew of 13 men joined the landing party and moved into Arica to assist as they could, leaving Cockswain Tait in charge of the boat at the mole. Gillis later commented that he took “as many of the crew as could be spared to be sent on shore to the relief of the sufferers, whose heartrending cries made irresistible appeal to the heart of everyone who possessed any feeling of humanity; and . . . proceeded to offer our services, and to do what we could for the relief of those whom we supposed to be in far greater danger than ourselves.”¹⁷

As Gillis left his ship, CAPT Doty set out from the *Fredonia* in his gig with his surgeon, Frank DuBois, paymaster William W. Williams, and two petty officers to provide whatever help they could. DuBois related that he and Paymaster Williams only reluctantly went and

“although we all felt it to be safer on board, I knew that my services, at least, must be required on shore without delay, and we went.” Doty spoke with Gillis on the mole and directed him “to send on board for as many men as could be spared, to assist in extricating those who had been buried beneath the ruins. . . .” Gillis later reported that “it was impossible to get the boat to the wharf again, as the sea was by this time rapidly receding.”¹⁸

No sooner had the parties landed and begun their work than a second enormous shock occurred at about 1730. Sturdy reported that this shock “was preceded by a low rumbling, like distant thunder, and came upon the doomed city with only that slight warning.” He continued: “The scene from shipboard was peculiarly awful. The shock was felt most sensibly and the falling houses distinctly seen. An immense mass of earth was shaken from the ‘morro,’ and falling with a fearful thud, it sent up such a cloud of dust as to envelop the whole city and hide it from the sight of those on the ships. This cloud slowly drifted to the leeward, and revealed a city in ruins.” The second shock was either an enormous aftershock of the first earthquake or possibly a second enormous earthquake, perhaps of a magnitude of 9.0 or higher, as some speculate today. While there is some question about two distinct earthquakes, Sturdy, Billings, and Midshipman (later Rear Admiral) Edward D. Taussig, who lived through the disaster, reported two major shocks roughly 30 minutes apart, at 1705-15 and then 1730-40.¹⁹

Within minutes of landing, DuBois and Williams realized that trying to rescue anyone among the ruins was foolhardy due to the con-

tinuing shocks and falling buildings. Thus, they headed for the hill overlooking the harbor to which many locals had already fled. On the hill itself, DuBois reported that “the scene was heart-rending. Every few moments the earth was violently shaken, and there generally preceded and accompanied these movements a deep, low, muttering sound like the base notes of an organ. . . . Women were crying and screaming; near relatives seeking each other, many of whom were never found; the wounded were with difficulty carried to places of safety; several women from fright aborted or miscarried, some of whom died; while at the same time the desolating scenes in the city below were of such an appalling character and on

Every few moments the earth was violently shaken, and there generally preceded and accompanied these movements a deep, low, muttering sound like the base notes of an organ.

such a grand scale, that one stood entranced, gazing at them, and scarcely thought of his own danger. Many thought, and not without reason, that the last day had come.” DuBois and Williams remained very busy caring for the victims as they could.²⁰

This second shock brought the first indication of a disturbance in the ocean. At first the sea pulled back, the drawback that is now often recognized as a precursor to a tsunami, and then rushed forward beyond the highest tide mark about 1737. The beaches and mole were crowded with people who quickly realized what was happening and rushed wildly through the ravaged

city toward the hills. On shore, Gillis saw that “the sea commenced to rise rapidly, and the ship, in a violent current, setting along the beach to northward and eastward, commenced dragging. . . . About this time the mole was submerged, and the sea had come up to the houses nearest the beach, the people rushing to the Morro. After several minutes there was a sudden reflux, and the ship swung to seaward. . . .”

From the *Waterree*, Sturdy saw the rushing sea water quickly overtake the people and “sweeping them from their feet, left them struggling for their lives in a floating mass of debris that twisted and turned in every direction. Some were picked up by boats, a few were washed ashore, while many others, after desperate struggles, went down and were seen no more.” It was now that the *Waterree* suffered its sole loss when Cockswain Tait and the boat were swept toward the Morro and soon crushed against the rocks beneath it. The unfortunate Tait would be the first and only loss among the *Waterree*’s crew of 179 officers and men during this swiftly developing disaster. According to the *Waterree*’s log book and others, this first incursion of the sea began at approximately 1732. The water surged to a height of 34 feet above the high water mark (current data places it at 12 meters or 39.4 feet), all within only about five minutes.²¹

The *Waterree*’s log book rather matter-of-factly noted this first incursion thusly:

*At 5:32 the sea commenced to rise rapidly and the ship in violent current setting along the beach to Nd. [north] and Ed. [east] dragged anchor, let go the port one and veered away chain, which brought her up; stationed hands at the wheel.*²²



USS *Wateree* stranded at Arica after she was washed ashore by the 13 August 1868 tidal wave. The Peruvian corvette *America* is partially visible in the distance.

Naval History and Heritage Command

The *Wateree's* log also recorded three distinct surges of the sea between 1732 and approximately 1800 when “there was an ebb and follow of the sea after this for some little time.” Of the ships in the anchorage, the *Wateree* was incapacitated, the Peruvian steam corvette *America*, short of coal, was struggling to get up steam, and the other four vessels were sailing ships with no wind—none could escape the harbor. On the hill overlooking Arica, DuBois watched as “the six vessels in the harbor were swinging and drifting in every direction.” On shore Gillis saw the sea’s first surges ground two ships that were anchored in shore of the *Wateree*, but the *Fredonia*, *Wateree*, *America*, and *Chañarcillo* “were still holding on.” About 1800, the swift currents, which DuBois noted “have been officially reported at 10½ knots per hour [12 miles per hour],” dragged the four ships to the north and east of their anchorages.

“While one would be rushing furiously to the east, another with equal speed would be carried near by her to the west,” DuBois reported. Billings said that “currents ran in contrary directions, and we were borne here and there with a speed we could not have equaled had we been steaming for our lives.”²³

After the last of these waves, the *Wateree* had veered to 95 fathoms (570 feet) of chain on the port and 100 (600 feet) on the starboard. The sea’s surges had dragged the ship away from shore on a zig-zag course to the northeast and then back to the southwest and then again to north and farther out to sea before calming. Sturdy said that “The appearance of the water at this time was most singular. It was perfectly smooth and apparently free from any disturbing force. As it rushed in and out, it seemed to be merely rising and falling, as though there were two immense pipes underneath that

alternatively fed and discharged the sea. Currents and counter-currents were noticeable in every direction. Masses of drifting ruins would rush by each other in opposite directions; and the boats, into which some had clambered on be overtaken by the water, were swept hither and thither, entirely out of control of the occupants.” Sturdy went on: “More rapidly than can be related the water rushed in and out, each time gaining strength and reaching farther into the city—sweeping the ruins in all directions, and obliterating all traces of street and plaza.” DuBois related that “the ocean was by this time covered with debris, consisting of houses, the mole, and whole gardens with their trees and shrubbery.” Once the sea calmed about 1800, both the *Wateree* and *America* sent boats to rescue the “unfortunates who were still clinging to trees, masses of earth, or whatever would support them in the water.” Sturdy

noted that some people were saved, but “the greater number were finally left to their fate, for, as the boat nearer them, they were caught by a current and swept hopelessly away.” DuBois confirmed that “A few of these were rescued, and but few.”²⁴

The currents and surges dragged the ships around the harbor, often barely missing each other as they were thrown about in a frenzied dance. The *America* tried to get up steam and escape the harbor. While “the *America* appeared to be steaming around the harbor,” Sturdy noted “the fact was that the *America* had no steam up at all, but was flying around wholly unmanageable.” Observing from the hills behind Arica where he and Williams had gone to escape the waves, DuBois said that within 15 minutes of his landing “the sea was beginning to pass its natural boundaries, the first waves but slightly, but each one increasing in force and height. About this time I saw the Peruvian corvette *America* take a turn around the whole harbor, in beautiful style, and head out to sea. We all supposed she had steam up and was running out of danger, but we afterwards learned she was only being carried irresistibly by a strong current.” The angry sea was merely toying with the ships and city, showing only some of its vast powers.²⁵

The *Wateree*’s log described the ship’s continuing struggle with the violent waves:

Between 6:30 and 7 there was another tremendous rising of the sea, and at the time onshore a terrible noise was heard, as of a tremendous roar of musketry, and last for several minutes. On the sea receding, the ship was swung violently to seaward, and after holding on for a minute or so, the deck stoppers parted, the chain

*flew rapidly out of the hawse pipes, tearing away compartments between the lockers, and, being both shackled together, fetched up on the bight underneath the spar deck between two hawse pipes. The ship now commenced to drift very rapidly seaward, and was very near Alacran island, but clear of it, when the sea very suddenly commenced to rush in again.*²⁶

Within only about 20 minutes after 1830, the *Wateree*’s log recorded a sequence of an enormous surge, followed immediately by the sea receding, and then another huge surge at about 1850. When the sea receded between the surges this time it went so far out from shore that all of the ships were grounded and on their beam ends except the *Wateree*. Billings could see “the rocky bottom of the sea, never before exposed to human gaze, with struggling fish and monsters of the deep left high and dry. The round-bottomed ships keeled over on their beam ends, while the *Wateree* rested easily on her floor-like bottom. . . .” The quickly receding waters left the *America* “partly afloat and broke her back, of course destroying her engines.” Unfortunately for the *Fredonia*, it keeled over with its deck facing seaward.²⁷

John Brann, the *Wateree*’s watch officer, later recorded the impact of what are now known to be the second tsunami waves which hit Arica at approximately 1850:

*The ship swung violently again, and in doing so, just cleared the English bark Chañarcillo, when a strain came on the chains again; the starboard one parted close to hawse pipes, and the ship drifted rapidly toward shore. About this time saw *America* go on her beam ends, and terrible groans and cries proceeding from her; English bark Chañarcillo*

*was also on her beam ends. The sky was now completely overcast, and the darkness was made greater by clouds of smoke from the *America*; which vessel had fires lighted and was getting up steam. About 6.55 ship among the breakers, and several heavy seas broke over us, but doing no other injury than throwing ship on her beam ends (she quickly righted again) and breaking in paddle box, bending portion of rim and braces of starboard wheels, and jamming it against side, and storerooms on guards forward, and part of starboard hammock netting.*²⁸

Sturdy provided this very personal account of the *Wateree*’s confrontation with the both the second and third enormous tsunami waves:

*Our experiences on the *Wateree* were sufficiently frightful—differing vastly from that of an ordinary shipwreck. . . . The officers paced the deck, discussing the probabilities of the ship being saved. The men were quiet and obedient, and acted throughout the whole of that fearful night in a manner worthy of the highest commendation. . . . Swept by the merciless flood, we were carried in and out—darting off in one direction only to be caught by another current and sent flying back, perhaps to the very spot from which we started. . . . For some time we kept well away from the shore and hope crept back to our hearts, for if we could but continue thus till the agitation subsided the chances would be in our favor. . . . But at last our time seemed to have arrived. With a frightful thump we struck broadside on, and the immense bore swept completely over us, carrying many from their feet and half drowning others. . . . Our destruction seemed certain. At one moment we were nearly on our beam-ends, and we expected to be rolled over and submerged in the*

angry waters, but the next instant we righted, and the wave, receding, left us high and dry, showing the bare ground for a long distance in front of us. . . . We stood on the *Wateree's* deck and waited, seeing no chance of deliverance, no escape from our apparent doom. The first indication of the returning wave was a frightful sullen roar, growing louder and louder as it approached, and on our limited horizon we saw a white line of dashing, seething foam rushing on to engulf us. With feelings the most intense we stood waiting, as the flood moved down upon us. Almost breathless, and with nerves strung to their highest tension, we received the shock. For a moment after it struck we could see nothing for the blinding water and spray that enveloped us. And then like a toy in its mighty grasp our vessel was spun around and around, and shot farther in shore with her bows pointing to the sea. Perfect quiet reigned on board. The crew, awe-struck and paralyzed, clung to the life-lines, and their grasp grew convulsive as the shout of the executive officer [LCDR Moses S. Stuyvesant] was heard: "Hold on for your lives!"²⁹

When the sea "came sweeping back" in the second massive wave that Billings described as "not like a wave, but rather like an enormous tide," it rolled the other ships in the harbor "over and over, leaving some bottom up and others masses of wreckage." The *Wateree*, battened down and secured, "rose easily over the tossing waves, unharmed." What saved those on board was the design of the rugged, iron-hulled gunboat. The large guns could be secured amidships when not in battery, and the bulwarks could be lowered outwards when the guns were used—lowering these in prepara-

tion for a tidal wave meant that with the hatches battened down the water ran off of the deck, "about as it would from a raft or floating plank." The *Fredonia*, however, did not survive this wave and was reduced to pieces of floating wreckage.³⁰

The second tsunami wave had smashed in at 1850 and reached a height of at least 52.5 feet (16 meters) according to present-day data. Those who lived through it and some recent researchers estimate the third and final wave, which beached the *Wateree* and *America*, was the largest of all, reaching possibly 70 feet when it hit at 1910. The time was now 1920, less than two hours had passed since the second shock and the first tsunami wave.³¹

Darkness now descended and covered the last sufferings of some ships and crews. Sturdy remembered that "The night was of such inky darkness that the experiences of some of the ships will never be known, as no one on board survived to tell the story. One bark [the *Rosa Rivera*] laden with guano must have gone down at her anchors, for not a vestige of her was ever seen nor were any of her crew heard of." DuBois reported 75 shocks during the night and that "from time to time we could hear the sea crashing among the ruins of the town."³²

After the huge waves, which he numbered at 11 and the *Wateree's* log book put at at least seven, Gillis explained in his report to RADM Thomas Turner, commander of the squadron: "Once or twice afterwards the sea came up, but not high enough to float the vessel. . . . When first beached the ship was lying about broadside to the sea coming in, but was finally washed around until her head lay west half south by compass, and head on to the beach

. . . when I returned to the ship, at a little after 2 a.m., everything was in as perfect order as it was possible to be in the circumstances, and no one would have supposed that the ship had passed through so terrible an ordeal." Boiling waves continued to pound in from the sea throughout the night, but their angry energy was clearly ebbing. The sea did not refloat the *Wateree*, greatly to the crew's relief, but repeated strong aftershocks rattled the ship, "adding to the awfulness of the night." The *Wateree's* log book recorded aftershocks "at short intervals, at least as often as once in twenty minutes, some of them quite heavy."³³

The *Wateree's* log and Gillis reported that the ship had finally come to rest at 1920 some three miles north-northeast of Arica head and "close up to a high bank, about four hundred and seventy (470) yards from, and twelve (12) feet above, high water mark." The last mammoth waves had carried the 1,000-ton *Wateree* more than two and a half miles across the bay from near Alacran Island, over the coastal sand dunes, across a valley, and then deposited it in a small cove along the shore at the foot of the Cordillera coastal range close to what was left of the Arica and Tacna Railroad tracks. The ship thankfully was largely intact, and as Billings noted, "on as even a keel as if still afloat, with our flag flying and our port anchor and 100 fathoms [600 feet] of chain laid out as carefully as we could have placed them there." Billings related, however, that "on the nearly perpendicular front of the mountain our navigator discovered the marks of the tidal wave, and, by measurement, found it to have been 47 feet high, not including the comb. Had the wave carried us 200 feet further, we would in-

evitably have been dashed to pieces against the mountain side.”³⁴

The *Wateree's* officers calculated that the largest waves occurred between 1850 and 1910 that night and had reached at least 45 feet above the high-tide mark, and that the waves had actually crested another 15 feet higher than that. Gillis claimed it was measured at 42 feet, 5 inches, with a wash of 10-15 feet. Sturdy noted that from their measurements they determined “the sea had risen bodily forty-five feet above high-tide mark, and that the wash of the waves was some fifteen feet higher.” Billings placed the height at 47 feet without the comb. Many present day researchers have placed the first tidal surge at 39.4 feet (12 meters) at 1737, the second of 52.5 feet (16 meters) at 1850, and the last at 1910, which carried the *Wateree* and *America* far onshore and destroyed the *Fredonia*, at 60-70 feet. Science writers of the time called this last wave the greatest tidal wave in history at 69 feet (21 meters), and some modern researchers placed its full height at perhaps 70 feet. The largest wave may even have been higher than that based on modern research that indicates local tsunami waves associated with earthquakes at this point on the coast have reached as much as 79-85 feet (24-26 meters). Whatever its height, the tsunami also pounded numerous Chilean ports as far south as Talcahuano near Concepción, 1,300 miles from Arica. Within hours and days, the trans-Pacific tsunami resulting from these enormous earthquakes hit virtually every part of Pacific basin including Australia, New Zealand, Japan, Samoa, the Hawaiian Islands, and California. Modern data differs on the exact damage caused by the earthquakes and tsunami, with es-

timates varying from 25,000-40,000 deaths, tens of thousands injured and homeless, and \$60-300 million in property damage.³⁵

AFTERMATH

Dawn on Friday, the 14th, revealed a city completely isolated and utterly devastated, with only two uninhabitable houses left standing. The earthquakes and tsunami had cut Arica's communications with the rest of Peru, severing the telegraph line to Tacna as well as ripping up and carrying away six or more miles of the Arica and Tacna Railroad plus sweeping engines and rolling stock into the sea. The repeated pounding of the large waves had relocated ruins in all directions, and those on board the *Wateree* found it was almost impossible to identify any of the former locations in Arica they had come to know so well. No ships were left in the harbor, and the *America* sat at the water's edge near the *Wateree*, “lying on one side and badly injured,” according to DuBois. Two commercial vessels were rolled over and wrecked, and two others had disappeared completely with most of their crews. DuBois fruitlessly scanned the harbor for the *Fredonia*. With the shocks less severe and the waters less violent, he “descended into town and was first made aware of the fate of the *Fredonia*, by finding her stores strewn on the beach, and as I afterward found them for miles above and below the town.” The *Fredonia* had disappeared but for some small pieces of wreckage, and its crew of five officers and 27 men were all lost except for Doty, DuBois, Williams, and two sailors. Its stores were scattered along the beaches and in the city's ruins together with all manner of goods from the homes and ware-

houses of Arica. In mid-September, the Navy Department reported that the stores lost on the *Fredonia* were valued at approximately \$125,000. Among the missing and presumed dead was DuBois's apothecary, Rudolph Borgstedt. The sad losses on-board the *Fredonia* also revealed the unusual face of the Navy seamen of the day—none of the 11 petty officers and 14 seamen who perished were native-born American citizens, only the two officers were.³⁶

That first morning, Gillis quickly established a security perimeter and set up sentries around the ship. Meanwhile, Billings reported that “a strong working party stove in the brandy casks and shattered the wine cases, for we did not propose having drunkenness added to the other horrors surrounding us.” Members of the crew then went into Arica to assist as they could and also began recovering what usable stores and other supplies they could find on the beach and collecting water. Once the crew was on land, they could see the awful devastation. Billings wrote that “at Arica we found but desolation and death. Where once had stood that pretty little city, a flat, sandy plain stretched before us. Except on the outskirts, higher up on the mountain, not a house marked the spot. . . . On the higher slopes a few houses, part of a church, and a hideous mass of debris, composed of everything, including dead bodies, was piled 20 or 30 feet high. This was all that remained of Arica. . . . The loss of life was proportionate to the destruction of property. We could not ascertain how great it was, but as all provisions, clothing, and even fresh water were destroyed, the pitiful remnant of the few hundred persons who gathered about the *Wateree*, living on our stores, in

tents made of our sails, told the story as could no figures. Afloat, with the exception of the crew of the *Wateree*, nearly all perished.”³⁷

DuBois and Winslow immediately began to care for anyone who needed medical attention. DuBois noted that “we searched out all of the wounded we could find, and as far as we were able attended to their wants.” Later that day, Gillis ordered Winslow back to the *Wateree* to care for the ship’s sick and injured as well as those from the corvette *America* whose surgeon had been lost. The hospital in Arica built and operated by the British and other foreign residents had been obliterated. All of the surviving local physicians left the city on the 14th, and DuBois commented that “I was the only medical man to look out for the wounded.” Thus, he would work with only Paymaster Williams to assist until 17 August when some relief arrived from Tacna, although Winslow came to help as he could.

Without medical supplies except for what he could scrounge from among the washed up stores of the *Fredonia* and in the debris, DuBois necessarily “extemporized” dressings and splints and treated “severe compound and comminuted fractures . . . by very rough methods.” He lamented in his report that “I shall probably never learn” the final outcomes of the many people he treated. By the time he left Arica on-board the *Kearsarge* on 29 August, DuBois could report that “temporary hospitals had been erected,” with generous assistance from the two Navy surgeons and later the Royal Navy.³⁸

Once they had established themselves at the *Wateree*’s location, Gillis quickly reestablished shipboard discipline and routine and set his

crew to work. The officers and sailors spent most of their time looking for the wreckage of the *Fredonia* and its crew members, searching for and removing the dead who had washed ashore as well as the dead and injured from the ruins, burying or burning the corpses, and recovering “a quantity of stores belonging to” the *Fredonia*. The *Wateree*’s log for the morning of 14 August described the “the beach strewed with wreckage of every description.” They eventually located and buried the remains of nine crew members from the ship. Sturdy and DuBois both estimated that at least 500 people had died in Arica and the port. Many were buried so completely in the ruins that they could not be removed. The one thing that they all noted was the absence of clothing on the corpses, which indicated that the ferocity of the waves had torn their clothes off.³⁹

During the afternoon of the 14th, the *Wateree*’s crew continued collecting provisions, water, and stores that were found on the beach and began distributing some of them to the local survivors. Accompanied by frequent aftershocks, this effort continued throughout the day. At Gillis’s direction, by day’s end the crew had distributed 200 pounds of beans, 300 pounds of rice, 60 pounds of coffee and 800 pounds of biscuits to the locals. This was to be just the beginning of the *Wateree*’s assistance to the victims.⁴⁰

The earthquakes’ aftershocks continued throughout the following days, and provided no reassurances to the survivors in Arica. DuBois estimated that the tremors continued at the rate of eight-to-ten per day until he left on 29 August. None of these compared to those initial shocks, but Gillis was so concerned

about another earthquake and sea wave washing the *America* into his ship at night that at 1800 on the 14th he ordered his crew to erect a tent camp on the bluffs overlooking the ship. Billings commented that some of recurring aftershocks “were severe enough to shake the *Wateree* until she rattled like an old kettle, and caused us to abandon the ship and camp on a considerable plateau, some 100 feet high, and overlooking the ship and wreckage.” Gillis used the *Wateree* as his center of all relief operations. He kept the crew on board or working around Arica during the day but retreated to the tent camp at night. There he set up the heads, washing facilities, and even began a “small garden for raising vegetables.” Despite this routine of spending the nights in tents on high ground, Sturdy says that aftershocks continued to harass the crew and “not infrequently were they awakened by being tossed up and down on the ground.”⁴¹

The earthquake and tidal waves had smashed ships, homes, and warehouses and washed up on the beaches plenteous supplies of clothing, furniture, hardware, liquor, barrels of salted beef and pork, uncountable valuables, and materials for building temporary shelters and tents in the hills. DuBois reported that “Almost anything one might wish could be picked up on the beach, from a tooth-pick to a piano-forte. . . . Provisions were plenty for those who could go and pick them up, as likewise articles of clothing.” With no effective local law enforcement left in the city, the opportunity for the thieves and looters, often joined by the local police themselves, proved just too tempting. Once the aftershocks grew less frequent and severe, Sturdy observed

that “The people of the interior valleys, impelled by cupidity rather than fear of earthquakes, came in crowds to the beach, each with several pack mules, to collect the goods which were scattered in all directions.” They looted, but DuBois also related “what they could not carry away, they destroyed. . . .”⁴²

Initially, Gillis ordered his officers to be armed with several revolvers at all times as part of his security measures. On 15 August, he had even distributed arms and ammunition to local citizens for their protection. Then, he had enough of this lawlessness and decided to maintain law and order in Arica as best he could to prevent the crimes and looting and safeguard personal property until police and troops from Tacna arrived. Although he lacked the resources and authority to reestablish law and order, Gillis simply was not going to tolerate this continuing disorder. According to Sturdy, Gillis “ordered his officers to stop any such depredations, and to insist upon the mules being driven to the ship and their packs discharged, a sentry being placed over them.” However, this process did not always go well, “and only by pointing a revolver at the head of some men could they be brought to terms.” Billings also recalled that after a few days the Araucanian Indians from the mountains “descended with long trains of llamas . . . broke open boxes, cut the fastenings of bales, and started back to their retreats loaded down with plunder.” Although “we were not able to argue with them,” Billings related that “there was an invitation to stop in the shriek of our shells that all understood. By firing in front of them with one of our smaller guns we ‘hove them to’ and made them approach and unload their cargoes

near us. Soon we had accumulated an assorted pile of merchandise much larger than our ship.”⁴³

THE SOUTH PACIFIC SQUADRON TO THE RESCUE

On 15 August the regular mail steamer, the SS *Peru* of the British Pacific Steam Navigation Company (PSNC), stopped at Arica on its coastal route from Valparaiso north to Callao and Lima. With no other means of communication available to him, Gillis sent Master Oscar White of the *Wateree* and Paymaster William Williams of the *Fredonia* to Callao on the 16th to deliver his initial dispatch on the disaster to Admiral Turner onboard the *Powhatan*. Gillis reported the complete loss of the *Fredonia* and most of its crew, and the current situation of the *Wateree*, “forced on shore by the tremendous sea following a very heavy earthquake, which totally destroyed the city of Arica, and caused a great loss of life.” The *Wateree* “has been very much strained, but the hull is still perfect as far as I can discover, no places having started, and she lies upright and about level.” Given its current location, Gillis saw little likelihood of refloating the *Wateree*. He also informed Turner that he was refusing any longer to provide for the local citizens from his own dwindling resources: “I have done all that I could for the relief of the inhabitants, and shall continue to do so, but I am obliged to refuse any further succor in the way of provisions as my own supply has been very much diminished.”⁴⁴

Aboard the *Powhatan* at Callao, which also suffered from the massive earthquake and especially the following tsunami on 13 August, RADM Turner sent off a report on the 18th to Secretary Welles inform-

ing him of what he knew of the events that had occurred. He told Welles that at Callao “it was much less severe than elsewhere, although sufficient to create extreme anxiety and great consternation” in area with a history of deadly earthquakes. White and Williams arrived in Callao on the SS *Peru* on the evening of the 19th and immediately delivered Gillis’s dispatch and the news of the disaster at Arica to Turner. For the first time Turner knew the enormity of what had befallen his ships and men as well as Arica and its environs. The next day, Turner wrote again to Welles with “the appalling intelligence of the loss of the United States ships *Wateree* and *Fredonia* by the same awful convulsion, the latter utterly destroyed, with the loss of nearly everyone on board.” He forwarded letters from CAPT Doty and CDR Gillis with his dispatch which he sent to the Secretary with Oscar White, “who was himself a spectator and suffered throughout this terrific occasion.”⁴⁵

White and Williams left Callao on the next steamer to Panama, crossed the isthmus, and arrived in New York on the steamship *Guiding Star* on 12 September. They were in Washington on the morning of Monday, 14 September, and reported to the Navy Department. In Secretary Welles’s published diary, the first mention of the earthquake, the loss of the *Fredonia* and grounding of the *Wateree*, and the dispatches from Turner was on 14 September, the day that White and Williams reported the disaster to him. This time lag of a month was a measure of just how slowly information was received in Washington from the more remote areas of the world where the Navy operated. Communications as we know them today simply did

not exist then. The first news of the 13 August earthquakes and tsunami in Peru appeared in *The New York Times* on 7 September, but only Callao was mentioned. It was not until 12 September that detailed information on the catastrophe reached New York with White and Williams and from various newspaper correspondents in Lima and Panama. From 13 to 16 September *The Times* and other Eastern newspapers began printing full details of the enormity of the disaster and the loss of the two Navy ships at Arica. The press dispatches from Peru praised the efforts of CDR Gillis, who immediately came to the assistance of the suffering inhabitants, and those of Drs. DuBois and Winslow, who saved "many lives by their medical and surgical skill."⁴⁶

In his report, Turner informed Welles that he then was readying the *Powhatan*, the only ship he had at Callao, and was trying to reach the other ships of the South Pacific Squadron to direct them to go to Arica "as soon as sufficient quantity of coals, water, and provisions can be got on board." While noting the potential dangers from aftershocks, Turner believed "that my duty is at once to repair there, although there may be some risk." He also sent along an exchange of 20 August with Army Brevet MGEN Alvin P. Hovey, the American Minister in Lima, in which Hovey asked him to do everything he could "to alleviate the sufferings of those who have borne the terrible calamity of the late earthquake in Peru. . . . If necessary, pray make your vessels, like merchantmen, to take food and necessities to all those who may now lie suffering." Hovey asked how many medical personnel and what quantity of supplies Turner could take on

board the *Powhatan* and transport to Arica. Turner immediately replied: "I deeply sympathize, like yourself, with the sufferers of this worldwide calamity. I do not ask if they are Peruvians or Americans, they are fellow beings. Send whom you wish to my ship. . . . We will try and take care of them to Arica." Turner also met with the new president of Peru, COL José Balta, on the afternoon of the 20th and "proffered my services to take down provisions, surgeons, and nurses, to the extent of the capacity of this ship."⁴⁷

With the Peruvian medical personnel, as many supplies as possible loaded, and \$25,000 in silver from the Peruvian government for Peruvian authorities at Arica, Turner ordered the *Powhatan* to sail from Callao at 1600 on 21 August. The PSNC mail steamer SS *Chili* left for Arica the next day carrying incoming U.S. Navy personnel and more relief supplies and provisions provided by the steamship company. The first U.S. Navy ship into Arica with much-needed provisions was the USS *Kearsarge* under CDR (later CAPT) James S. Thornton, who was its executive officer during the famous battle with the CSS *Alabama* on 19 June 1864. The ship had just come around Cape Horn to join the South Pacific Squadron and had anchored at Valparaíso on 4 July. Cruising north along the Chilean coast, it stopped in the port of Coquimbo, Chile, from 25 July to 6 August and then steamed north to Caldera, Chile, where it anchored on 9 August. While at Caldera, the *Kearsarge* experienced the large earthquake and tsunami waves on the evening of the 13th. The ship's log then noted large bores about 30 minutes apart and the rise of 20 feet in the water which flooded the mole

and did much damage to the shipping in port. On 19 August, the outgoing U.S. Minister to Chile, Judson Kilpatrick, visited the ship which soon received relief supplies for Arica from Chilean authorities and left Caldera at 1800 headed north. Arriving at Arica at 0310 on Saturday, 22 August, the *Kearsarge* was "the bearer of the first assistance received by the starving people." The *Nyack* under CDR Austin Pendergrast left Valparaíso on 17 August dropped her anchor in Arica's harbor at 1030 the same day.⁴⁸

The *Powhatan* arrived and anchored in Arica's bay at 1248 on Tuesday, 25 August. As might be imagined, the sailors on shore were most joyful to see their flagship appear to join the *Kearsarge* and *Nyack*. Billings wrote that "Then can be imagined the swelling of the hearts and the mist that dimmed the eyes of our sailor men as we looked across the water and hailed the stars and stripes floating from the masthead of the old United States frigate *Powhatan* as she steamed majestically into that desolated harbor. Her decks were filled with all possible stores and supplies, which were soon distributed among the stricken and helpless who had sought our aid and succor." The next day Turner turned over the \$25,000 in silver to officers aboard the Peruvian ironclad *Huascar* then in the harbor and also had the relief provisions delivered to authorities on shore.⁴⁹

The Arica that Turner now saw was utterly devastated and its inhabitants completely demoralized. He described "the people, crushed in spirit, stricken by grief and paralyzed by fright, seemed without hope, animation, or object, and to have surrendered themselves to desperation and despondency, without

either the expectation or desire to rebuild for themselves homes upon a spot which has been commemorated by so frightful a tragedy.” The upper city had escaped the worst of the tidal waves but “has not a single house or wall left standing—it is in one confused mass of ruins, more or less in every part prostrate. . . .” The lower part with the more substantial houses and the large stone custom house “is literally perfectly swept away, even the foundations, as though they had never existed. . . .”⁵⁰

Once he had had an opportunity to survey the situation at Arica and speak with Gillis and others, Turner realized that action was critical. Citing his authority under paragraph 158, *Regulations of the Government of the United States Navy* (1865) that “In all cases of real distress, gratuitous assistance is to be offered to the fullest extent possible,” Turner “directed for their relief a liberal distribution of provisions and clothing of the squadron . . .” to the inhabitants of Arica, who were “destitute of everything but the clothes in which they stand . . .” They warmly welcomed this assistance “with the most lively demonstrations of joy and gratitude. . . .” Turner believed his action “has produced a most profound impression upon the minds and sensibilities of the population of Peru at large.”⁵¹

Upon examining the *Wateree*, Turner agreed with Gillis’s initial assessment. He concluded that the ship could not be refloated and ordered a board of survey. In the meantime, the ship remained the center of on-shore relief activities but was methodically stripped of all armaments except the heavy Parrott rifles (9,679 pounds each) and 9-inch Dahlgren guns (9,200 pounds each), ammunition and powder, supplies, and

pieces of usable equipment. Also the *Wateree*’s coal bunkers were emptied in the same manner and the coal transported to the *Nyack* at anchor. By the time Gillis left Arica on 29 August, he had distributed of 2,359 pounds of the *Wateree*’s provisions to the local citizens and authorities. By the end of September, an estimated \$400,000 worth of stores from the *Wateree* alone had been distributed to the residents of Arica and surrounding areas. What was left of the *Wateree* was later sold at auction on 21 November 1868 to E.W. Sartori for \$6,500.⁵²

While the *Powhatan*, *Kearsarge*, and *Nyack*, were anchored in Arica’s harbor, their crews assisted the *Wateree*’s men in the relief and recovery work. Turner later proudly informed Secretary Welles: “It is of some satisfaction to me to inform the honorable Secretary that three of the vessels of this command [*Kearsarge*, *Nyack*, and *Powhatan*] were the first of a national character on the spot. . . . and that the officers and men of our ships emulated and vied with each other in administering to this suffering community, both publicly and privately, in a manner which has left a most memorable record to their lasting honor and reputation. . . .”⁵³

With many survivors of the *Fredonia* and *Wateree* on board, on 29 August Turner ordered the *Powhatan* out of Arica and headed north toward Callao along with the *Kearsarge*, leaving the *Nyack* behind. At the request of the Peruvian government’s prefect for Arica, Turner detailed George Winslow to remain there to work with the local medical officers to care for the civilian sick and injured and to help in restoring the city’s sanitary health. Accordingly, he was assigned on 30 August

as surgeon on the *Nyack*, which Turner ordered to remain at Arica to guard the *Wateree* until all usable and movable items were removed. The *Nyack* remained at Arica moving the coal and clearing rubble from the streets of the city until it steamed out of the harbor for Callao on 14 October. For his efforts, Winslow was later thanked by the Peruvian government. However, most of the officers and men went to Callao with Turner and then returned to the United States via Panama. Their adventure in Arica was over, but for many of the officers their Navy careers were certainly not.⁵⁴

After returning to Callao on 2 September, Turner wrote to Secretary Welles on the 3rd describing his observations and actions while at Arica. One thing he did not mention was that while in Arica, Gillis specifically requested a formal court of inquiry into the loss of the two ships and the conduct of both captains. Turner delayed this unfortunate piece of official business until after they had returned to Callao. From 3-5 September on board the *Powhatan*, Turner convened the court which found that Gillis and Capt. Doty were not at fault for the loss of their ships or guilty of dereliction of duty for deserting their ships and crews at a time of danger.⁵⁵

In his dispatch to Secretary of State Seward on 14 September, U.S. Minister Hovey provided additional details on the aftermath of the massive earthquakes and tsunami that struck Peru on 13 August as well as on another earthquake that hit Ecuador on the 16th. He reported that both countries were very hard hit and that the people were still badly paralyzed and ravaged by hunger, diseases, and lawlessness in some of the affected areas. However, he

proudly told Seward “that Rear-Admiral Thomas Turner, Captain McDougal, Commanders James H. Gillis, James S. Thornton, Austin Pendergrast, and the other officers and crews of their command of our navy, near the scenes of danger, have done all that noble-hearted, brave sailors could do to alleviate the sufferings of all within their reach.”⁵⁶

AFTER THE ARICA DISASTER

Upon their return to Washington, CAPT Doty and CDR Gillis reported the findings of the court of inquiry to Secretary Welles and the Department of the Navy. Upon receiving the information, Welles was beside himself and noted in his diary on 10 October 1868: “The conduct of the two commanders, Gillis in leaving, and Doty in remaining absent from his ship, is reprehensible. No motives of courtesy or of humanity should have caused either to neglect the men and vessel intrusted to him. It was neither humane nor right to be absent at such a time from the post of duty.” Doty immediately left the service and died the following April.⁵⁷

With this sad experience on his record, Gillis was assigned to duty at the Washington Navy Yard before returning to sea duty in the North Atlantic Fleet in command of the ironclad *Mahopac* (1872) and then the *Michigan* (1873-76). Promoted to captain in September 1876, he later commanded the receiving ship *Franklin* at Norfolk Navy Yard (1878-80) and the *Lackawanna* in the Pacific (1880-82). Gillis was promoted to commodore in January 1887 and commanded the South Atlantic Station as Acting Rear Admiral (1888-90). He was retired for age in May 1893. During his long career he was known as the “sailor with a

charmed life” because he never lost a man at sea. He died in Melbourne Beach, FL, on 6 December 1910. On 3 September 1919, the Navy commissioned the destroyer *Gillis* (DD-260), honoring both James H. Gillis and Commodore John P. Gillis (1803-1873).⁵⁸

Dr. Frank DuBois, who played such a critical role in provided medical care at Arica after the earthquake, returned to the U.S. on 28 September and returned to his home in New London, PA. He was promoted to Surgeon in February 1870 and assigned to the Naval Hospital at Chelsea, MA, until 1871. He then served on the *Dictator*, the hospital ship *Pawnee* at Key West (1871-74), the *Wyoming* on the European Station (1877-81), and on the *Galena* of the Home Squadron (1884-87). Duty at Portsmouth Navy Yard followed (1887-91) and then service on the *Philadelphia* on the North Atlantic Station and on the *Chicago* on the European Station (November 1891-September 1894). He was promoted to Medical Inspector in September 1888. Late in 1894 he was transferred to the Portsmouth Navy Yard as its medical head and director of the Portsmouth Naval Hospital. Frank DuBois died suddenly of a massive stroke on 24 February 1895 at Portsmouth at the age of 57.⁵⁹

After his extended service at Arica and then on the *Nyack*, Dr. George Winslow transferred to the *Powhatan*. While on this ship, he was involved in the rescue and care of British seamen from the wrecked PSNC steamer *Santiago* in the Straits of Magellan in January 1869, for which he received the thanks of the British government. Upon returning to the U.S. in April 1870, he was assigned to the Boston Navy Yard and Chelsea Naval Hospital

until April 1871. He was promoted to Surgeon in April 1875. After two years at the Torpedo Station at Newport, RI, he served on the *Vandalia* on the North Atlantic Station (1879-82) and then at Boston Navy Yard again (1882-86) before returning to sea on the *Atlanta* on the North Atlantic Station (1886-88). He was then assigned to the *Monterey* and *Philadelphia* on the Pacific Station (1893-96), during which time he was promoted to Medical Inspector in August 1893 and assumed the duties of fleet surgeon. Upon completion of this tour, he was at the Naval Station, New London, CT, until his promotion to Medical Director in January 1898 and assignment to the Medical Examining Board in Washington until September when he became medical director at the Boston Navy Yard. By far the senior surgeon in the Navy except for the Chief, Bureau of Medicine and Surgery himself, Winslow remained at the Boston Navy Yard until November 1902 when he went on leave prior to his mandatory retirement. When he retired on 19 January 1903, he was advanced one rank to rear admiral, retired list, for his meritorious service during the Civil War in accordance with the personnel act of 3 March 1899. Winslow spent his retirement years in his home town of New Bedford, MA. After the outbreak of World War I, and at the spry age of nearly 75, he telegraphed Navy Surgeon General William C. Braisted that “I want to do my bit. Count on me.” Braisted graciously turned down Winslow’s offer, saying “the war which confronts us will be largely a young man’s war.” Winslow lived at New Bedford until he passed away on 3 September 1928.⁶⁰

While many of the officers and men of the USS *Wateree* continued

their careers for many more years, the ship's career in the U.S. Navy ended on 21 November 1868 when it was sold at auction. In the following years a contractor removed its heavy guns, and the ship then served a variety of purposes, hotel and inn, hospital during the great yellow fever epidemic, and factory, before it was abandoned until the evening of 9 May 1877 when another severe earthquake hit Arica and the Peruvian-Chilean coast followed by another tsunami. These waves refloated the former *Wateree* and carried it two miles farther north before setting it back down on the sands along what is today Chinchorro beach and inflicting considerable damage. What was left of the wreck then became a frequent target for gunners in the War of the Pacific, pitting Peru and Bolivia against

Chile (April 1879-October 1883), during which a good deal of fighting took place in and around Arica.⁶¹

The ravaged city of Arica suffered heavily in the years after 1868. Another great earthquake and tidal wave hit Arica on 9-10 May 1877, again causing great damage. Then man-made disaster struck in the form of the War of the Pacific. After the war Chile occupied Arica and Tacna, but a final resolution did not take place until 1929 when Chile received Arica and in exchange Peru obtained Tacna and an indemnity. Today Arica is a thriving sea port of nearly 200,000 with a pleasant climate and great resort beaches that attract a steady flow of tourists. There, alongside the Avenida Las Dunas on the Chinchorro beach, rest the boilers of the USS *Wateree*. Now you know the story of why the

Wateree's remains are in Arica and are preserved as a Chilean national monument. Those rusting boilers are also a lasting memorial to those officers and men of the *Fredonia* and *Wateree* who survived an incredible catastrophe and then assisted the other victims to the best of their ability and resources. As ADM Turner had written to Secretary Welles on 3 September 1868, their efforts indeed had "left a most memorable record to their lasting honor and reputation."⁶²

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The remains of the *Wateree's* boilers today on the shore north of Arica.

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ENDNOTES

1. Aside from memoirs and eyewitness accounts mentioned below, the story of the USS *Wateree* and U.S. Navy in the great earthquakes and tsunami at Arica has only received some general coverage in the past. See Homer C. Votaw, "Our Navy and South America's Greatest Earthquake," *U.S. Naval Institute Proceedings*, Vol. 74, No. 3 (March 1948), pp. 345-49; John M. Taylor, "Wateree's Strange Fate," *MHQ: The Quarterly Journal of Military History*, Vol. 14, No. 4 (Summer 2002), pp. 26-27; J. Gordon Vaeth, "Left High and Dry by a Tsunami," *Naval History Magazine*, Vol. 23, No. 5 (October 2009), at <http://www.usni.org/magazines/navalhistory/left-high-and-dry-tsunami>. RADM Ammen Farenholt's comment on Votaw's March 1948 article which appeared in *U.S. Naval Institute Proceedings*, Vol. 74, No. 6 (June 1948), pp. 760-62 provided some interesting details to the *Wateree*'s story. CAPT Joseph N. Taussig, son of then Midshipman Edward D. Taussig who played a prominent role in this story, published an important article, "The Tidal Wave and Earthquake at Arica, Peru, in 1868," *U.S. Naval Institute Proceedings*, Vol. 52, No. 281 (July 1926), pp. 1319-29. This article also reprinted extracts from the USS *Wateree* log book for 13 and 14 August 1868 as well as Edward D. Taussig's letter of 21 August 1868 to his parents (see footnote 34 below). Two comments on Taussig's article also provided important additional information on the *Wateree*: CDR H. K. Hewitt, *U.S. Naval Institute Proceedings*, Vol. 52, No. 283 (September 1926), p. 1792, and Taussig, *U.S. Naval Institute Proceedings*, Vol. 52, No. 285 (November 1926), pp. 2300-2302. The original log books of the USS *Wateree* are in the National Archives and Records Administration (NARA), Record Group (RG) 24, Records of the Bureau of Naval Personnel, Logs of U.S. Naval Ships, 1801-1946 (hereafter cited as NARA, RG 24). See also "Chinchorro Beach—Arica Chile," at VisitChile.com: Online Travel Agency, at <http://www.visitchile.com/eng/atacama-desert-altiplano/destination.asp?id=83>.
2. *Report of the Secretary of the Navy*, 5 December 1864 (hereafter cited as Annual Report of the Navy Department, ARND, and year), p. xviii; *Diary of Gideon Welles, Secretary of the Navy under Lincoln and Johnson*, vol. 2: April 1, 1864-December 31, 1866 (Boston: Houghton Mifflin Company, 1911), p. 357; Robert E. Johnson, *Thence Round the Cape: The Story of the United States Naval Forces on Pacific Station, 1818-1923* (Annapolis, MD: U.S. Naval Institute, 1963), pp. 117-20.
3. ARND 1864, p. xviii; ARND 1865, 4 December 1865, pp. x-xi; "Wateree," *Dictionary of American Naval Fighting Ships*, at <http://www.history.navy.mil/danfs/w4/wateree-i.htm>; *Register of the Commissioned, Warrant, and Volunteer Offices of the Navy of the United States including Officers of the Marine Corps and Others to January 1, 1865* (Washington: GPO, 1867), p. 294 (series hereafter cited as Register and date); Register, January 1, 1866, p. 201; Johnson, *Thence Round the Cape*, pp. 118-20; Winfield S. Schley, "Admiral Schley's Own Story," *Cosmopolitan*, Vol. 52, No. 3 (February 1912), p. 370; also see Schley, *Forty-Five Years under the Flag* (New York: D. Appleton and Company, 1904), Chapter 6, "In South and Central America, 1864-1866," pp. 52-62, for his experiences while serving on the *Wateree*.]
4. ARND 1866, 3 December 1866, pp. 19-20; "Dacotah," *Dictionary of American Naval Fighting Ships*, at <http://www.history.navy.mil/danfs/d1/dacotah.htm> and "Nyack," *Dictionary of American Naval Fighting Ships*, at <http://www.history.navy.mil/danfs/n6/nyack.htm>.
5. ARND 1866, pp. 19-21; ARND 1867, 2 December 1867, pp. 12-13; "South Pacific Squadron," in Register, January 1, 1867, p. 161.
6. Billings, "Great Earthquake of '68," *Recreation*, Vol. 15, No. 2 (August 1901), p. 89; "South Pacific Squadron," in Register, January 1, 1867, p. 161, and Register, January 1, 1868, pp. 38, 152-53; Schley, *Forty-Five Years*, p. 57.
7. Register, January 1, 1867, p. 161, and January 1, 1868, pp. 38; Register, July 1, 1868, p. 25; Lewis Randolph Hamersly, *The Records of Living Officers of the United States Navy and Marine Corps* (New York: L. R. Hamersly, Inc., 1898), 6th edition, hereafter cited as Hamersly, *Records*, and year of publication, p. 235; Edward W. Callahan (ed.), *List of Officers of the Navy of the United States and of the Marine Corps from 1779 to 1900* (New York: L.R. Hamersly & Company, 1901), p. 598, hereafter cited as Callahan, *List of Officers, 1775-1900*; Thomas Francis Harrington, Vol. II, *The Harvard Medical School: A History, Narrative and Documentary, 1782-1905* (New York: Lewis Publishing Company, 1905), pp. 924-25; "George Frederick Winslow," in Harrington, Vol. III, *The Harvard Medical School*, pp. 1514-15; "George Frederick [Winslow]," in *Winslow Memorial: Family Records of Winslows and Their Descendents in America* (New York: Frances-K. Holton, 1888), pp. 1031-32; "George Frederick Winslow," in *Who was Who in American History—The Military* (Chicago, IL: Marquis Who's Who, 1975) (hereafter cited as *Who was Who—The Military*), p. 643; *New England Journal of Medicine*, Vol. 199 (1928), p. 497; "George F. Winslow," in Zephaniah W. Pease (ed.), *History of New Bedford*, Vol. 2 (New York: Lewis Historical Publishing Company, 1918), pp. 93-94.
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9. "Frank L. DuBois," *Catalogue of the Trustees, Officers, and Students of the University of Pennsylvania*, Session 1862-63 (Philadelphia, PA: Collins, Printer, 1863), p. 39; "Frank L. DuBois," Hamersly, *Record* 1894, p. 274; Callahan, *List of Officers, 1775-1900*, pp. 167, 171; *Medical and Surgical Directory of the United States* (Detroit, MI: R. L. Polk & Company, 1886), pp. 116, 601; Register, January 1, 1867, p. 161; Register, July 1, 1868, p. 24.
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12. "South America: Graphic Account of the Destruction of Arica—Scenes on the Sea and Land," *The New York Times*, 9 October 1868;

- Billings, "Some Personal Experiences," p. 60; Sturdy, p. 23; U.S. Geological Survey (USGS), "Historic World Earthquakes: Country and Date, Chile and Peru," at http://earthquake.usgs.gov/earthquakes/world/historical_country.php#chile and [#peru](http://earthquake.usgs.gov/earthquakes/world/historical_country.php#peru); Patricia A. Lockridge, *Tsunamis in Peru-Chile* (Boulder, CO: NOAA, NGDC, 1985), *passim*.
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14. Squier, pp. 608, 621; DuBois report, ARND 1868, p. 28; USGS, "Historic World Earthquakes: Arica, Peru, 1868 August 13 21:30 UTC, Magnitude 9.0," at http://earthquake.usgs.gov/earthquakes/world/events/1868_08_13.php; NOAA National Geophysical Data Center (NOAA, NGDC), "Significant Earthquake [Arica, Chile, August 13, 1868]," at <http://www.ngdc.noaa.gov/nndc/struts/results?EQ>; "1868 Arica Earthquake," PediaView, at http://pediaview.com/openpedia/1868_Arica_earthquake; U.S. Navy Hydrographic Office, *The Coasts of Chile, Bolivia, and Peru* (Washington: GPO, 1876), pp. 9, 288-90; Richard A. Proctor, "The Greatest Sea-Wave Ever Known," *Littell's Living Age*, 4th series, Vol. 18 (July-September 1870), pp. 310-15; Lockridge, pp. 7, 27, 32, 35; Emile Okal, José C. Borrero, and Costas E. Synolakis, "Evaluation of Tsunami Risk from Regional Earthquakes at Pisco, Peru," *Bulletin of the Seismological Society of America*, Vol. 96, No. 5 (October 2006), pp. 1634-35, 1637, 1639-43; L. Dorbath, A. Cisternas, and C. Dorbath, "Assessment of the Size of Large and Great Historical Earthquakes in Peru," *Bulletin of the American Seismological Society*, Vol. 80, No. 3 (June 1990), pp. 563, 575-76; Yolanda Zamudio, Jesús Berrocal, and Celia Fernandes, "Seismic Hazard Assessment in the Peru-Chile Border Region," in "Extended Abstracts," 6th *International Symposium on Andean Geodynamics* (ISAG 2005)(Barcelona, Spain: 2005), pp. 813-16; Susan L. Bilek, "Seismicity along the South American subduction zone: Review of large earthquakes, tsunamis, and subduction zone complexity," *Tectonophysics*, Vol. 30 (2009), at http://www.unavco.org/community_science/science_highlights/2010/pdfs/Bilek2009.pdf.
15. Billings, "The Great Earthquake of '68," p. 91.
16. Sturdy, pp. 23, 25; Billings, "Some Personal Experiences," p. 63; ARND 1868, p. xix, 21-22; DuBois report, ARND 1868, p. 28; NARA, RG 24, logs of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p. m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p. m.," in Taussig, "Tidal Wave and Earthquake," p. 1320; Gillis, "Letters to the Editor," *New York Times*, 19 October 1868.
17. Billings, "Some Personal Experiences," p. 63; Gillis report, 20 August 1868, ARND 1868, pp. 26, 32; E. G. Squier, p. 614; Gillis, "Letters to the Editor," *New York Times*, 19 October 1868.
18. DuBois report, ARND 1868, pp. 28, 30; Gillis report, 15 August 1868, ARND 1868, p. 32.
19. Sturdy, pp. 23-24; Billings, "Some Personal Experiences," pp. 61, 63; Taussig letter, 21 August 1868, p. 1; USGS, "Historic World Earthquakes: Arica, Peru, 1868 August 13 21:30 UTC, Magnitude 9.0," at http://earthquake.usgs.gov/earthquakes/world/events/1868_08_13.php; NOAA, NGDC, "Significant Earthquake [Arica, Chile, August 13, 1868]," at <http://www.ngdc.noaa.gov/nndc/struts/results?EQ>; "1868 Arica Earthquake," PediaView, at http://pediaview.com/openpedia/1868_Arica_earthquake. While Sturdy, Billings, and Taussig reported the shocks about 30 minutes apart, the USGS and NOAA, NGDC, and Lockridge placed them four hours apart. Other seismologists cited in footnote 14 above make no mention of two earthquakes.
20. DuBois report, ARND 1868, pp. 28-29.
21. Sturdy, p. 24; Billings, "Some Personal Experiences," p. 63; Gillis report, 20 August 1868, ARND 1868, p. 32; ARND 1868, p. xix; "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p. m.," in Taussig, "The Tidal Wave and Earthquake," p. 1321; the time also from an unidentified officer of the *Wateree*, "Miscellaneous Scientific Intelligence," *The American Journal of Science and Arts*, Vol. 46, No. 138 (November 1868), p. 424; Squier, pp. 613, 614; USGS, "Historic World Earthquakes: Arica, Peru, 1868 August 13 21:30 UTC, Magnitude 9.0," at http://earthquake.usgs.gov/earthquakes/world/events/1868_08_13.php; Zamudio, p. 813. Billings reported 235 officers and men on board the *Wateree* on 13 August but the ship's log lists the complement as 19 officers and 160 men, including 22 Marines. See NARA, RG 24, log of USS *Wateree*, 1 July 1868-29 August 1868.
22. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p. m.," in Taussig, "The Tidal Wave and Earthquake," p. 1321. Taussig
23. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p.m.," in Taussig, "Tidal Wave and Earthquake," p. 1321; Gillis report, 20 August 1868, p. 32; DuBois report, ARND 1868, p. 29; Billings, "Some Personal Experiences," p. 65.
24. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p.m.," in Taussig, "Tidal Wave and Earthquake," p. 1321; see chart, "Arica Roads," Taussig, "Tidal Wave and Earthquake," p. 1318; Sturdy, p. 24, 25; DuBois report, ARND 1868, p. 29; Taussig letter, 21 August 1868, pp. 2-3, Gillis report, 20 August 1868, ARND 1868, p. 32; Billings, "Some Personal Experiences," p. 65.
25. Sturdy, p. 25; DuBois report, ARND 1868, p. 29.
26. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p.m.," in Taussig, "Tidal Wave and Earthquake," p. 1321; see also Gillis report, 20 August 1868, ARND 1868, pp. 32-33.
27. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p.m.," in Taussig, "Tidal Wave and Earthquake," p. 1321; see also Gillis report, 20 August

1868, ARND 1868, pp. 32-33; Billings, "Some Experiences," pp. 63-65, Votaw, p. 346.

28. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p.m.," in Taussig, "Tidal Wave and Earthquake," p. 1321; see also Gillis report, 20 August 1868, ARND 1868, pp. 32-33; Zamudio, p. 813.

29. Sturdy, p. 26.

30. Billings, "Some Personal Experiences," pp. 65, 67; "George Kelsey Powell," in George B. Kulp (ed.), *The Luzerne Legal Register*, Vol. 13 (1884)(Wilkes-Barre, PA: E. B. Yordy, 1884), p. 416; Votaw, p. 346.

31. USGS, "Historic World Earthquakes: Arica, Peru, 1868 August 13 21:30 UTC, Magnitude 9.0," at http://earthquake.usgs.gov/earthquakes/world/events/1868_08_13.php; NOAA, NGDC, "Significant Earthquake [Arica, Chile, August 13, 1868]," at <http://www.ngdc.noaa.gov/nndc/struts/results?EQ>; "1868 Arica Earthquake," PediaView, at http://pediaview.com/openpedia/1868_Arica_earthquake; Lockridge, p. 7; Zamudio, p. 813; Gillis report, ARND 1868, pp. 32-33.

32. Sturdy, p. 25; DuBois report, ARND 1868, p. 30.

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34. NARA, RG 24, log of the USS *Wateree*, Thursday, August 13, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Thursday, August 13, 1868: From 4 to 8 p. m.," in Taussig, "Tidal Wave and Earthquake," p. 1323; Gillis report, 20 August 1868, ARND 1868, p. 33; Billings, "Some Personal Experiences," p. 69.31

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38. DuBois report, ARND 1868, pp. 30-31; Billings, "Some Personal Experiences," p. 69; J.W. Sloan, "Arica and Tacna, Peru," 22 September 1868, in *The South American Missionary Magazine*, Vol. 3, 1 January 1869, p. 18; R. A. Powell, Captain, H.M.S. *Topaze*, at Callao, to Secretary of the Admiralty, "Account of the late Earthquake in Chili and Peru," 14 September 1868, in *The Nautical Magazine and Naval Chronicle for 1868* (London: Simpkins, Marshall, and Company, 1869), p. 616; NARA, RG 24, log of the USS *Kearsarge*, August 29, 1868.

39. DuBois report, ARND 1868, p. 31; Sturdy, p. 28; "The Great Earthquake," *New York Times*, 16 September 1868; NARA, RG 24, log of the USS *Wateree*, Friday, August 14, 1868: From 4 a. m. to 8 a.m., Saturday, August 15, 1868; see also "Record of Miscellaneous Events of the Day, Friday, August 14, 1868: From 4 a. m. to 8 a. m.," in Taussig, "Tidal Wave and Earthquake," p. 1323; RADM (retired) A. Farenholt, Comment on "Our Navy and South America's Greatest Earthquake," *U.S. Naval Institute Proceedings*, Vol. 74, No. 6 (June 1948), pp. 761-62.

40. NARA, RG 24, log of the USS *Wateree*, Friday, August 14, 1868; see also "Record of Miscellaneous Events of the Day, Friday, August 14, 1868," in Taussig, "The Tidal Wave and Earthquake," pp. 1323-24.

41. DuBois report, ARND 1868, p. 31; Billings, "Some Personal Experiences," p. 69; Gillis report, 15 August 1868, ARND 1868, p. 26; Sturdy, p. 29; NARA, RG 24, log of the USS *Wateree*, Friday, August 14, 1868: From 4 to 8 p.m.; see also "Record of Miscellaneous Events of the Day, Friday, August 14, 1868: From 4 to 8 p. m.," in Taussig, "The Tidal Wave and Earthquake," p. 1324; Farenholt, p. 761.

42. DuBois report, ARND 1868, pp. 30-31; Sturdy, pp. 27-29; "South America: Graphic Account of the Destruction of Arica—Scenes on the Sea and Land," *New York Times*, 9 October 1868.

43. Sturdy, pp. 27-29; Billings, "Some Personal Experiences," p. 69; NARA, RG 24, log of the USS *Wateree*, Saturday, August 15, 1868: From 4 a. m. to a.m.

44. Gillis report, 15 August 1868, ARND 1868, p. 26; Holland Newton Stevenson, *Incidents in the Life of an Officer of the United States Navy Officer: Journals and Letters of Commodore Holland Newton Stevenson, United States Navy, Retired* (Pittsfield, MA: Eagle Printing and Binding Company, 1917), p. 20.

45. Turner to Welles, 18 and 20 August 1868, ARND 1868, pp. 24-25; Stevenson, Incidents, p. 20; NARA, RG 24, log of the USS *Powhatan*, Wednesday, August 19, 1868.

46. Welles Diary, Vol. 3, p. 435; "Affairs in Peru," *The New York Times*, 7 September 1868; "Earthquakes," *The New York Times*, 13 September 1868; "The Earthquake," *New York Times*, 14 September 1868; "Latest Telegraphic News: An Earthquake on the Coast of Peru and Ec-

uador,” Washington (D.C.) National Republican, 14 September 1868; “Great Earthquake in South America,” *New York Sun*, 14 September 1868; “South America: Rear Admiral Turner’s Report of the Recent Earthquakes—The Loss of the *Fredonia* and *Wateree*,” *New York Times*, 15 September 1868; “Earthquake in South America,” *Philadelphia Public Ledger*, 14 September 1868; “Awful Earthquake,” *Philadelphia Inquirer*, 14 September 1868; “The Earthquake—Report of the Navy Department,” *Philadelphia Public Ledger*, 15 September 1868; “The Great Earthquake,” *New York Times*, 16 September 1868.

47. Turner to Welles, 20 August 1868; Alvin P. Hovey, U.S. Minister to Peru, to Turner, and Turner to Hovey, 20 August 1868, ARND 1868, pp. 25, 27.

48. Turner to Welles, 3 September 1868, ARND 1868, p. 34; “*Kearsarge*,” *Dictionary of American Naval Fighting Ships*, at <http://www.history.navy.mil/danfs/k2/kearsarge-i.htm>; No. 145, Hovey to Seward, 28 August 1868, Diplomatic Correspondence in Papers relating to Foreign Affairs, 3d Session, 40th Congress, Part II (Washington: GPO, 1869), p. 872; “James S. Thornton,” Hamersly, *Records* 1890, pp. 456-57; Taussig letter, 21 August 1868; NARA, RG 24, log of the USS *Kearsarge*, June 24, 1868 to December 7, 1868, August 13, 19, 22, 1868, log of the USS *Wateree*, Saturday, August 22, 1868, log of the USS *Nyack*, July 1, 1868 to December 31, 1868, August 17 and 22, 1868; log of the USS *Powhatan*, June 16, 1868 to November 30, 1868, August 21, 1868.

49. NARA, RG 24, log of the USS *Powhatan*, August 25 and 26, 1868; log of the USS *Wateree*, August 25, 1868; log of the U.S.S. *Kearsarge*, August 25, 1868; Turner to Welles, 3 September 1868, ARND 1868, p. 34; “Albert Sivillian Greene,” in John A. Haddock, *The Growth of a Century As Illustrated in the History of Jefferson County New York, from 1793 to 1894* (Philadelphia, PA: Sherman and Company, 1894), pp. 395-96 (Greene was an engineer on the *Nyack*, 1868-70).

50. Turner to Welles, 3 September 1868, ARND 1868, pp. 34-35; Sloan, “Arica and Tacna, Peru,” 22 September 1868, in *The South American Missionary Magazine*, p. 18.

51. Turner to Welles, 3 September 1868, ARND 1868, pp. 34-35; Paragraph 158, “Article IV, General Instructions,” *Regulations for the Government of the United States Navy*. 1865 (Washington: GPO, 1865), p. 27.

52. Sturdy, p. 30; Billings, “Some Personal Experiences,” p. 71; “Albert Sivillian Greene,” in Haddock, *The Growth of a Century*, p. 396; “The Earthquake in South America,” *Philadelphia Public Ledger*, 30 September 1868; “*Wateree*,” *Dictionary of American Naval Fighting Ships*, at <http://www.history.navy.mil/danfs/w4/wateree-i.htm>; “South and Central America,” *New York Times*, 9 December 1868; NARA, RG 24, log of the USS *Kearsarge*, August 26-29, 1868, log of the USS *Wateree*, August 26-29, 1868, log of the USS *Powhatan*, August 26-29, 1868; log of the USS *Nyack*, August 27-October 14, 1868.

53. Turner to Welles, 3 September 1868, ARND 1868, pp. 34-35; Sturdy, p. 30.

54. DuBois report, ARND 1868, p. 30; Register, January 1, 1869, p. 138; “George F. Winslow,” in Pease (ed.), *History of New Bedford*, p. 94; “Edward David Taussig” and “Edward William Sturdy,” Hamersly, *Records* 1898, pp. 129, 164; Sturdy, p. 30; Powell, *Luzerne Legal Register*, p. 417; “After the Earthquake,” *New York Times*, 16 October 1868; “Acknowledgement of Timely Services,” Washington (D.C.) *National Republican*, 12 December 1868; NARA, RG 24, log of the USS *Nyack*, August 27-October 14, 1868.

55. Gillis, “Letters to the Editor,” *New York Times*, 19 October 1868; “Peru,” *New York Tribune*, 7 October 1868; Welles *Diary*, Vol. 3, p. 449; Taylor, p. 27; NARA, RG 24, log of the USS *Powhatan*, September 3-5, 1868.

56. Hovey to Seward, 14 September 1868, Diplomatic Correspondence in Papers relating to Foreign Affairs (1869), p. 875.

57. Welles *Diary*, Vol. 3, p. 449; “George W. Doty,” Callahan, *Living Officers, 1775-1900*, p. 167.

58. “James H. Gillis,” Hamersly, *Records* 1898, p. 48; Register, 1 January 1911, p. 204; “Gillis,” *Dictionary of American Naval Fighting Ships*, at <http://www.history.navy.mil/danfs/g5/gillis.htm>.

59. “Frank L. DuBois,” Hamersly, *Record* 1894, p. 274; Callahan, *List of Officers, 1775-1900*, pp. 167, 171; “Medical Items,” *Maryland Medical Journal*, Vol. 32, No. 20 (2 March 1895), p. 368; “The Obituary Record: Frank L. DuBois,” *New York Times*, 25 February 1895; NARA, RG 52, Records of the Bureau of Medicine and Surgery, Register of Letters Received, 1865-68, F. L. DuBois to Chief, Bureau of Medicine and Surgery, 29 September and 9 October 1868.

60. Register, January 1, 1900, pp. 41, 170; January 1, 1903, pp. 46, 158; Hamersly, *Records*, 1898, p. 235; Callahan, *List of Officers, 1775-1900*, p. 598; Harrington, Vol. II, *The Harvard Medical School*, pp. 924-25; “George Frederick Winslow,” in Harrington, Vol. III, *The Harvard Medical School*, pp. 1514-15; “George Frederick [Winslow],” in Winslow Memorial, pp. 1031-32; “George Frederick Winslow,” in *Who was Who—The Military*, p. 643; *New England Journal of Medicine*, Vol. 199 (1928), p. 497; “George F. Winslow,” in Pease, *History of New Bedford*, p. 92.

61. “The Last Pacific Tidal Wave,” *The Sailors Magazine and Seamens Friend*, Vol. 49, No. 7 (July 1877), p. 211; Lt. S. Eardley-Wilmot, RN (ed.), *Our Journal in the Pacific by the Officers of the HMS Zealous* (London: Longmans, Green, and Company, 1873), pp. 113-15; letter, Egmont C. von Tresckow, U.S. Consul, Arica, Chile, to RADM L. G. Billings, 16 February 1923 (returned as undeliverable because Billings was deceased), in Taussig, additional comments on his July article, *U.S. Naval Institute Proceedings*, Vol. 52, No. 285 (November 1926), pp. 2301-2302; “War of the Pacific,” *Britannica Online Encyclopedia* (2011), at <http://www.britannica.com/EBchecked/topic/437568/War-of-the-Pacific>; Clements R. Markham, *The War between Peru and Chile, 1879-1882* (London: Sampson Low, Marston, and Company, n.d.), pp. 191-208; “Chinchorro Beach—Arica Chile,” at VisitChile.com: Online Travel Agency, at <http://www.visitchile.com/eng/atacama-desert-altiplano/destination.asp?id=83>.

62. “War of the Pacific,” *Britannica Online Encyclopedia* (2011), at <http://www.britannica.com/EBchecked/topic/437568/War-of-the-Pacific>; “Chinchorro Beach—Arica Chile,” at VisitChile.com: Online Travel Agency, at <http://www.visitchile.com/eng/atacama-desert-altiplano/destination.asp?id=83>; Turner to Welles, 3 September 1868, ARND 1868, p. 34.

“To Respectfully Solicit Your Fostering Protection”

By J.J. Ahern



Ninth Street campus of the University of Pennsylvania Medical School, watercolor after William Strickland, ca. 1820
University of Pennsylvania Archives

History is always a matter of context. The context of how one event impacts another, or in this case how knowing the history of one aspect of naval medical education put a series of documents into a broader context. While following up on a reference question by a researcher in the General Administration Records of the University of Pennsylvania Archives, I came across a folder titled “1823—Professor of Nautical Medicine and Military Surgery.” The title intrigued me on many levels—one being that I was at the time reading by coincidence Harry Langley’s *A History of Medicine in the Early*

United States Navy. Upon opening the folder, the first name I saw was Surgeon Thomas Harris, USN—the same Dr. Thomas Harris that was the focus of André Sobocinski’s 2009 article on Navy Medical Education and who also shows up repeatedly in Langley’s book. Examining the contents along with consulting the Trustees Minutes for the period and the Medical Faculty Minutes lead to an interesting addition to Thomas Harris’ story and medical education.

When Navy Surgeon Thomas Harris wrote Secretary of the Navy Smith Thompson on May 14, 1823 to propose his “course of lectures” on “nautical medicine and military surgery” to assist the surgeon’s mates of

The Professorship of Nautical Medicine and Military Surgery

the Navy, he did not hesitate to extol the virtues of holding his program in Philadelphia. The city was the medical center of the United States by the Nineteenth Century—boasting the country’s first hospital (Pennsylvania Hospital) and the first medical school, the University of Pennsylvania (or simply Penn). Harris himself was an 1809 alumni of the University of Pennsylvania, and had a small private practice in the city prior to entering public service. He renewed his relationship with Philadelphia and its medical community when he returned in 1817 to serve at the Philadelphia Navy yard. Harris notes of Penn that, “The favourable [sic] opinions which they [the medical faculty] have expressed of this system of instruction, added to the known liberality and enlightened views of the Trustees, afford a well grounded hope that the scheme proposed will meet their countenance and support.” Harris also highlights another benefit of having the course taught in Philadelphia being “the facility with which dead subjects may be obtained, for operations and dissections.” Harris closes his proposal by stating the students would also be able to improve their “general knowledge of science of medicine” by attending lectures at Penn “one of our most celebrated universities.” From his comments regarding the

University’s Trustees and Faculty, one might assume that Harris had already discussed his plans with them prior to sending his proposal. And given the overlapping nature of Philadelphia society at the time, that just might have been true. What is interesting is that while he notes his alumni connection with Penn as qualifying him to teach these courses, he does not mention that he was already teaching his own dissection courses.¹

On 2 June 1823, almost two weeks after getting his approval from Thompson, Harris wrote to the Trustees to inform them of his correspondence with the Secretary of the Navy. He provided them with copies of his correspondence to the Secretary which laid out his idea for the institution, and the Secretary’s approval which provided financial appropriations, as well as assurance that legislation would be passed to provide for the permanence of the institution. In addition, he states that his success as an instructor will be reliant on the support of the University’s medical school. Stating of the Trustees, “A knowledge of your enlarged and liberal views and of your disposition to promote scientific pursuits, has encouraged me to respectfully solicit your fostering protection.” Harris also believes that by supporting his institution,

it would benefit the medical school through additional enrollment. He humbly notes that there is no way his “dissections nor lectures” will disrupt the classes of the Medical faculty, and of the ones he has discussed his endeavor with, they have become “among my most active and zealous friends.”²

The next meeting of the Board of Trustees was held on 3 June, where the minutes indicate that Dr. Harris’s packet had been received, and that Trustee Thomas Cadwalader (1779-1841) had presented the motion to establish a committee to examine the “expediency of establishing in this University a professorship of Nautical Medicine and Military Surgery.” Upon being seconded, the committee was comprised of Cadwalader, William Rawle (1759-1835), and Joseph Hopkinson (1770-1842).³ None of the committee members were physicians. All had studied law, and were members of the American Philosophical Society. Rawle and Hopkinson made their careers as lawyers. Cadwalader was an officer in the Pennsylvania Militia, and had risen to the rank of major general after the War of 1812—possibly a reason for his presenting the motion. The first action of the Committee was to write to Harris on 10 June to inquire about his application. Most notably, they wanted to know:

1. Harris, Thomas ALS to Smith Thompson, Secretary of the Navy, 14 May 1823 copy, 1823: Nautical Medicine and Military Surgery, Box 1, General Administration Records 1820-1930 (UPA 3) [Hereafter UPA 3 1820-1930]; University Archives and Records Center, University of Pennsylvania, Philadelphia PA [Hereafter UARC]; Andre Sobocinski, “Forging Identities: A History of Navy Medical Education Part I: Surgeon Thomas Harris and A ‘School of Prophets,’” *The Grog Ration* (V.4 No. 3, May – June 2009), pg. 5.

2. Harris, Thomas ALS to Trustees of the University of Pennsylvania, 2 June 1823, UPA 3 1820-1930; According to Langley, Harris’ proposal to Thompson included letters of support from Thomas Hewson, Nathaniel Chapman, Samuel Jackson, and William Gibson – in 1823 only Chapman and Gibson were on the Medical Faculty; Harold D. Langley, *A History of Medicine in the Early U. S. Navy*, (Baltimore: Johns Hopkins University Press, 1995), pg. 252-253; George W. Corner, *Two Centuries of Medicine: A History of the School of Medicine, University of Pennsylvania*, (Philadelphia: J. B. Lippincott Co., 1965), pg. 72-73.

3. 3 June 1823 (pg. 42), University of Pennsylvania Trustees Minutes, Vol. 7 1822-1831, UPA 1.1 [hereafter UPA 1.1], UARC.

would the classes only be given to officers of the Navy; would he receive non-Navy pupils and how would he avoid competition with the University's medical faculty; what subjects not taught in the university would he cover; would he receive compensation from his pupils; and did he expect to be accommodated in the University's buildings. Cadwalader did note that Harris's answers would be shared with the medical faculty.⁴ Harris' reply came on 12 June. He states that he intended to keep his lectures primarily to the interest of naval officers, and focus on the practical aspects they will need to accomplish their duties. Overall, he expresses that he does not want to impede on the medical faculty, but would be grateful to any privileges he might receive from the faculty and trustees.⁵

In between, the Committee met with the medical faculty to discuss the "propriety" of Dr. Harris being appointed a professor in the University to the medical men of the Navy. Present were Philip Syng Physick (1768-1837) professor of Anatomy, John Redman Coxe (1773-1864) Professor of Materia Medica and Pharmacy, Nathaniel Chapman (1780-1853) Chair of Theory and Practice of Medicine, Thomas C. James (1766-1835) Professor of Midwifery, William Gibson (1788-1868) Professor of Surgery, and William Edmond Horner (1793-1853) Dean of the Medical School and adjunct Professor of Anatomy. According to the minutes Dr. Physick proposed that the subject was, "entirely new and the objects not specifically stat-

ed" that the proposal should be submitted to the faculty in writing to give them, "an opportunity of seeing well all the objects included in the question" and to determine how this position could affect the existing chairs. This was agreed to and the meeting was adjourned.⁶ For the next faculty meeting on 23 June, the committee had provided Horner with Harris' application material. This included his letter to the Trustees, copy of the letter to the Secretary of the Navy, the Secretary of the Navy's response, letter from the Officers of the Navy to Harris, the resolution of the Trustees appointing the committee, a copy of the letter from Committee to Harris, Harris' reply to the Committee, and an extract of an act to establish a naval hospital. Again, nothing passed at this meeting since Chapman was out of town, and those present decided to delay discussion of the topic. This was despite the fact that Chapman had sent a letter in his absence, "expressing his approbation of the application."⁷

Finally, at the 14 July meeting, the faculty decided the matter of Harris's application should be, "left to the Profs. of anatomy and surgery."⁸ This put the matter in the hands of Physick, Gibson, and Horner. In the letter that resulted, Horner wrote on behalf of the Medical Faculty noting that they were well acquainted with Harris and held him in high esteem. As a person he is, "one whose general interests they would take the greatest pleasure in promoting." However, their judgment in relation to creating the proposed professorship is based not on the person, but on

how it would interfere with the duties of the Medical Faculty—mainly in the area of anatomy and surgery. From their standpoint there is really no separation between the teaching of anatomy and that of surgery. Yet their greatest concern was in regard to Harris' proposed dissection classes. They noted the schools dissection department has often been seen as the schools "Palladium," and to interfere with that in any way would have major consequences to the school as a whole. Particularly during a time, "when it is surrounded by other schools jealous of its success." The real issue was in relation to the "supply of subjects" that came from a "certain class of citizens" whose death rate "amounts only to a determined number." As such, there were never enough subjects at the start of the dissecting class to meet the demands and interests of the students. Horner notes, "It takes one month, commonly till the 10th or 15th of December, with the exertions depending on extraordinary fees to resurrectionists etc., before each class is supplied." During this time there was much competition between the needs of the University and those engaged in private anatomy lecturers. Given this, the chair of anatomy is in no position to take up competition for subjects with, "a United States officer, supported by the funds of the government." The consequence of such would be to diminish the offerings in the University. In addition, to teach thirty surgeons mates dissection would require a number of subjects so high, that "their consumption and waste

4. Cadwalader, Thomas ALS to Thomas Harris, 1823 June 10, UPA 3 1820-1930, UARC.

5. Harris, Thomas ALS to Thomas Cadwalader 1823 June 12 UPA 3 1820-1930, UARC.

6. 1823 June 11 (pg 80), Minutes of the Medical Faculty, Volume 2. May 29, 1811-October 3, 1827 #1476, General Administration Records, UPA 3 [hereafter UPA 3 #1476], UARC.

7. 1823 June 23 (pg. 81), IBID.

8. 1823 July 9 (pg. 82), IBID.

of subjects will scarcely be supplied by the whole range of the town.” In relation to teaching operative surgery, they state there is no distinction between civilian and military surgery – you treat fractures and gunshot wounds the same regardless if they happen “to soldiers or sailors, gentlemen or labourers.” Therefore, to let Harris teach military surgery as he proposed as a member of the faculty would duplicate subjects already covered in the University. Though they note, “they have nothing to present to the Committee under the head of Nautical Medicine” since they did not cover the topic.⁹

While other medical schools had been established by 1823, the University’s Medical School was the only one operating in Philadelphia. However, independent physicians had begun to set up their own private anatomy schools in the city. George McClellan, an 1819 graduate of Penn’s Medical School and founder of Jefferson Medical College in 1824, opened his private dissecting room in 1819; followed in 1820 by another Penn alumnus J. V. O’Brien Lawrence who opened the Philadelphia Anatomical Rooms in 1820. Key to any dissection lecture is the need for subjects. The use of human specimens still held moral problems for the general population. As such, medical schools relied on grave robbers (Horner’s resurrectionist) to supply subjects, which pending on the morals of those involved, came from either potter’s fields or church yards in neighboring towns. While the former would go unnoticed, the latter (or at least suspicion of such)

could lead to public outcry. A number of riots against medical schools in the early 1800s were the result of residents fearing that a recent grave had been violated for the benefit of the school. In all likelihood, the University obtained its dissection subjects from less controversial methods (most likely the city’s potter’s field or similar institutions). Though clearly the medical faculty was conscious of the strain additional demand for subjects would place on the school, particularly given the increase in private demonstrations.¹⁰

With the response from the Medical Faculty, the committee reported on 5 August that if the University created a professorship of military surgery it would be injurious to the chair of anatomy and surgery in the medical school. However, the committee could not “agree entirely” with the medical faculty. They note that a medical officer had already been appointed by the government to teach the proposed course, and was bound to teach naval junior surgeons and surgeons mates. From there they proposed that it is possible, “he may offer his tickets at an under rate to other pupils, and may thus very materially interfere with our medical school.” Furthermore his connection with the Federal Government, “may enable him to enjoy facilities at least equal to those of our Professors, in procuring subjects for his lectures and dissecting classes.” From that stance, the committee recommended against creating a professorship of military surgery. Though they felt it, “most

wise and prudent to take advantage of the opportunity now offered, and, by giving to the instructor the appointment he solicits, so to regulate the course of his lectures on surgery.” By this means, there would be no competition with the Medical School. Though as the faculty did not teach a class in nautical medicine such a professorship should be established—based on the previous regulations that he not be part of the faculty.¹¹

Another interesting twist as to why the Committee felt a professorship in just nautical medicine should be established is found in an undated document in the folder. This opinion, most likely crafted by Cadwalader, notes that Congress had passed legislation in 1811 for the establishment of the Naval Hospital Fund, and was looking at creating three hospitals in Boston, Norfolk, and either Philadelphia or New York. To this he notes, “As it would be desirable to have one of these establishments in Philadelphia it might be accomplished, perhaps by offering a liberal countenance to the lecturer on military surgery.” He feels that the act currently before Congress—which was not passed before the session ended but which seems likely to occur, “a medical appointment in the navy will be rendered extremely desirable.” As such, the need for a lecture in military surgery will be increased and Harris’ institute would be the only one in the service. He comments, “If, then, it were connected with the university, might he not be of advantage to it, by attracting

9 Horner, William Edmond to Messrs Cadwalader Hopkinson and Rawle, 1823 July 14, UPA 3 1820-1930 and UPA 3 #1476 pg 83-88, UARC.

10. Corner, pp. 75-77; James O. Breeden, “Body Snatchers and Anatomy Professors: Medical Education in Nineteenth-Century Virginia,” *Virginia Magazine of History and Biography* (V. 83, No. 3, July 1975), pp. 322-326.

11. Report of the Committee on Dr. Harris’s Communication, n.d., UPA 3 1820-1930, UARC [copy of the report is in the Trustees Minutes, V7, pg 50-51; dated 5 August 1823].

students who are anxious to enter the public service?" Therefore, by creating a chair in nautical medicine and military surgery in the University it would also secure the permanence of Harris' institution in Philadelphia and in the end one of the Navy Hospitals.¹²

When the Trustees met on 2 September they decided to establish another committee this time to look into the establishment of a professorship just for nautical medicine, comprised once again of Cadwalader, Hopkinson, and Rawle.¹³ There is no indication of any further meetings between the Committee and the Medical faculty. Though on 21 September Horner returned the packet of material related to Harris' application along with a communication from the medical faculty to be presented at the next Trustees meeting. The letter signed by Horner as Dean and on behalf of the faculty states that the medical faculty was apprehensive that their initial views were not properly interpreted in relation to the creation of the professorship of nautical medicine and military surgery. As such, the medical faculty felt, "that any appointment however modified, to teach the branches mentioned, must in their opinion interfere more or less with the chairs already established." As such they suggested, "the propriety of rejecting the application."¹⁴

The issue did not end there. At the same meeting which the Trustees received the Medical Faculty's letter the Committee presented a re-

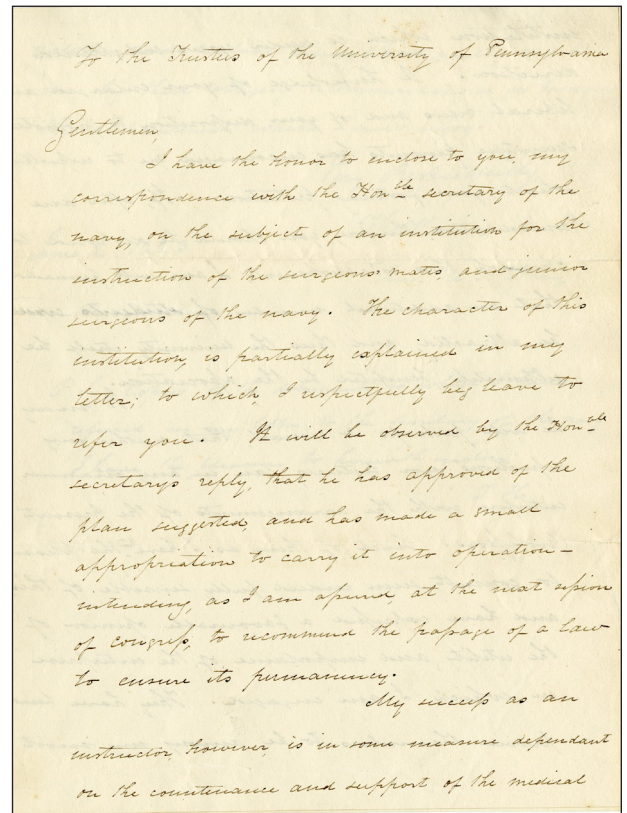
port of regulations for a professor of nautical medicine. The regulations stated: that the professorship was not to be part of the medical faculty nor were his lectures to be required for a medical degree, he was not to interfere with the "rights" of the medical faculty nor be entitled to use any rooms in the University's buildings without the Boards permission, expenses were not to be paid by the University, any certificates presented to those attending lectures would be on the part of the professor and not the university, and he shall be subject to any further regulations the Board may create.¹⁵ By this, the professor would be part of the University under the direction of the Trustees, but not part of the medical faculty.

In a way getting the best of both worlds—the connection to Harris' institution that might provide additional benefits, but without conflict from the medical faculty.

At this point all discussion of the professorship ends in the records of the Trustees and the medical faculty. The medical faculty had stated their opinion in September and they were sticking with it. The last note of any kind related to Harris' possible appointment came at the November 4 Trustees' meeting. At this meeting the Trustees made their final consideration of the proposed professorship, and decided that the phrasing

BELOW. Harris's letter to the Trustees of the University of Pennsylvania.

University of Pennsylvania Archives



of "military surgery" should be returned to the title on motion of the membership. The Trustees moved to reject any further consideration of the motion—where the subject ended.¹⁶

Harris would go on to teach his courses on naval medicine in Philadelphia for 20 more years. Interestingly, Harris would be the naval surgeon authorized to purchase the land that eventually became the Naval Asylum in 1826. Without additional documentation it is hard to determine if the motivation to create the professorship was solely on the part of Harris, or conceived

12. General Cadwalader, n.d., UPA 3 1820-1930, UARC

13. 2 September 1823 (pg. 52), UPA 1.1, UARC.

14. Horner, William Edmond ALS to The Board of Trustees 21 September 1823, UPA 3 1820-1930, and 1823 September 21 (pg 97) UPA 3 #1476, UARC.

15. 7 October 1823 (pg 52), [UPA 1.1], Report of Regulations for Professorship of Nautical Medicine, 1823 October 7, UPA 3 1820-1930, UARC

16. 4 November 1823 (pg. 53), UPA 1.1, UARC.

by one of the Trustees to reap the benefits of locating a naval hospital in Philadelphia, or perhaps even a combination of the two. Regardless of the origin, the events that transpired between June and November 1823 documents not only another chapter in Naval medical education, but also sheds light on the state of medical education—particular in relation to anatomy and dissection – in Philadelphia. In the antebellum period, a number of University of Pennsylvania Medical School graduates went on to serve as surgeons in the Navy. The speculation on how Harris’ institute may have developed if it did have the backing of the University as well as the Navy is endless. One clear observation is how the University Trustees and the Medical Faculty took different views of adding Harris to the faculty. For the Trustees, the inclusion

of Harris’ institute held the potential to add additional students to the medical school (there were already 101 graduates in the Class of 1823 alone). Not to mention secure for the city one of the three proposed naval hospitals. However, the medical faculty saw the potential addition outside of their control as a burden not a boon. Obtaining subjects for dissection classes would become that much harder. Bad enough that there was already competition with private anatomy lecturers, the faculty did not want to be competing with the Federal Government. It could also be speculated that the faculty did not want the competition for students as well. During this period professors issued students lecture tickets to attend classes, collecting the fees for attendance before settling expenses with the Trustees. Many on the medical faculty also

taught outside of the University—providing lectures at Pennsylvania Hospital, the City’s Almshouse, the Medical Institute of Philadelphia, and out of their own practices. If Harris’ lectures would be free to naval surgeons, there would be no need for them to pay to attend other lectures offered in the city. The fuller story of medical education in Philadelphia is beyond the scope of this article. However, for scholars of early American medical education this event and the related documentation does provide new sources for interpretation.

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The Lucky Bag

Navy Medical Culture Through Factoid

From the very beginning of the U.S. Navy, ship surgeons were required to maintain sick reports or medical logs of their patients. Customarily, these reports were nothing more than patient names listed next to a rough, sometimes vague diagnosis. At times, the ship surgeon would use medical terminology once common, but now archaic. With help from the website <http://www.antiquusmorbus.com>, we offer a sample of some terms found in many eighteenth and nineteenth century Navy medical logs. We have listed their modern equivalents in italics.

Ague (<i>Malaria</i>)	Dyspepsia (<i>Indigestion</i>)	Phthisis (<i>Tuberculosis</i>)
Ague and Fever (<i>Malaria</i>)	Enteric Fever (<i>Typhoid</i>)	Pleurisy (<i>Pneumonia</i>)
Apoplexy (<i>Stroke</i>)	French pox (<i>Syphilis</i>)	Quinsy (<i>Tonsillitis/bacterial epiglottitis</i>)
Bilious Fever (<i>Malaria or Typhoid</i>)	Gaol Fever (<i>Typhus</i>)	Piles (<i>Hemorrhoids</i>)
Bloody Flux (<i>Dysentery</i>)	Gleet (<i>Gonorrhea</i>)	Putrid Fever (<i>Typhus</i>)
Catarrh (<i>Cold</i>)	Hospital Fever (<i>Typhus</i>)	Scrofula (<i>Tuberculosis</i>)
Congestive Fever (<i>Malaria</i>)	Intermittent Fever (<i>Malaria</i>)	Ship Fever (<i>Typhus</i>)
Consumption (<i>Tuberculosis</i>)	Locked Jaw (<i>Tetanus</i>)	Stricture (<i>Gonorrhea</i>)
Croup (<i>Throat Infection</i>)	Malignant Fever (<i>Malaria</i>)	Variola (<i>Smallpox</i>)
Dropsy (<i>Edema</i>)	Nervous Fever (<i>Typhus</i>)	Yellow Jack (<i>Yellow Fever</i>)

The Dilemma of the Individual Augmentee

By Richard Ginn
COL, MSC, USA (Ret)

I was a Stranger and you took me in.

Both the Army and the Marine Corps used an individual replacement system during the Vietnam War. In contrast, the policy today in Afghanistan and Iraq is to use unit replacements whenever possible. However, as the operational tempo increased, the Services were directed to utilize individual augmentees (IAs) to fill critical manning shortages in joint operational billets, which often are often located within Army chains of command. Currently there are over 15,000 active duty and Reserve Navy IAs in five different categories assigned to Army, Marine Corps and in some cases, Navy units in Iraq, Afghanistan, Cuba, the Horn of Africa and the United States. All in all, these sailors, including Navy Corpsmen attached to Marine Corps units, are in the same boat as were the individual replacement soldiers and Marines in the Vietnam War. They go to war alone, arrive as strangers, and return home alone.

As our current engagement in the “Long War” continued, the IA situation caught the attention of senior Navy leadership when it increasingly became clear that this population was being neglected. For instance, sailors assigned to IA jobs often find themselves in a different universe where the operating culture, customs, roles,

and names for things are different than in their parent command. Secondly, the Army and Marine Corps units were not equipped to handle these sailors’ administrative needs, to include pay and personnel issues. Furthermore, while most IAs are assigned to combat support or combat service support roles, some find themselves in combat operations, including convoy duty, without being fully trained. Thus there was often a need to train these sailors in basic soldier combat skills, which these days is accomplished with Navy Individual Augmentee Combat Training, a three-week course conducted at Fort Jackson, SC, that is attended by about half the IAs.

But the Navy discovered there was also a need to address the combat and operational stress aspects of these deployments, especially in some especially demanding environments. This eventually led to the fielding of medical care teams (MCTs) composed of mental health professionals who both document the environment and provide on-the-spot psychological health support for sailors encountering adverse effects of combat or operational stress. Our BUMED oral history program has documented some of those stories that illustrate efforts to address those problems.

An example was a mortuary affairs detachment in Iraq in 2004 that was manned by Marines, who were essentially IAs since they had been pulled from their regular Military Occupation Specialties (MOS) and sent to Iraq. Dr. Heidi Kraft, a clinical psychologist and member of the combat stress detachment that conducted a group intervention for this detachment, described a “Groundhog Day” setting for those Marines whose work “was always about death. They felt fatigue, burnout, and genuine concern about their next five months.” Furthermore, as a lance corporal explained, they all had different MOS’s. “I am a jet engine mechanic. We have truck drivers, comms guys, supply clerks, even aircrew. Our captain is an infantry officer. But not one of us is a mortician. Dr. Kraft and the members of the mental health team were successful in identifying the dimensions of this compromised unit situation and in providing an effective resolution. A follow up visit several months later found that conditions had greatly improved.

In 2007, IAs assigned to detainee operations (DETOPS) in Iraq at the Camp Bucca detention facility performed duties far removed from their established military occupational specialties. They were thrust into what

was described as “one of the toughest jobs out there, period, for individual augmentees.” In response to reports of combat stress problems, a Navy research psychologist, LT Justin Campbell, deployed to Iraq to conduct a mental health survey of the unit. He described what he found. “These DETOPS guys work 12-hour minimum shifts, with usually an hour and a half stand-up time on both sides, so you’re really talking 14 to 16 hours a day, six, sometimes seven days a week in a row, usually working from noon to midnight or midnight to noon in an environment where people are throwing every possible bodily fluid on you. They’re calling you every possible racial epithet, or gender insult. Some detainees were trying to kill themselves. Some of them had mental health problems, and some tried to kill each other.” The situation was so bad that upon seeing the results of the data from the survey, the Navy’s senior Combat and Operational Stress Consultant, CAPT Bob Koffman, concluded: “the Navy was unknowingly contributing to psychiatric morbidity; and in some cases suicide.” The data collected by LT Campbell led to a second survey several months later in the fall of 2008 to evaluate the same mission being conducted in Afghanistan at the Bagram Theater Internment Facility (BTIF).

If anything, the situation was even worse at the BTIF. As one team member put it: “We had sailors for whom this was their first mission, E3s standing guard force duty, the toughest absolute duty ever imaginable; E3s who didn’t even know how to put their uniforms together, they were that

Individual Augmentees are members of the United States military assigned to a unit (battalion or company) as a TAD/TDY status. Individual Augmentees can be used to fill shortages or can be used when an individual with specialized knowledge or skill sets is required. As a result, Individual Augmentees can include members from an entirely different branch of service.

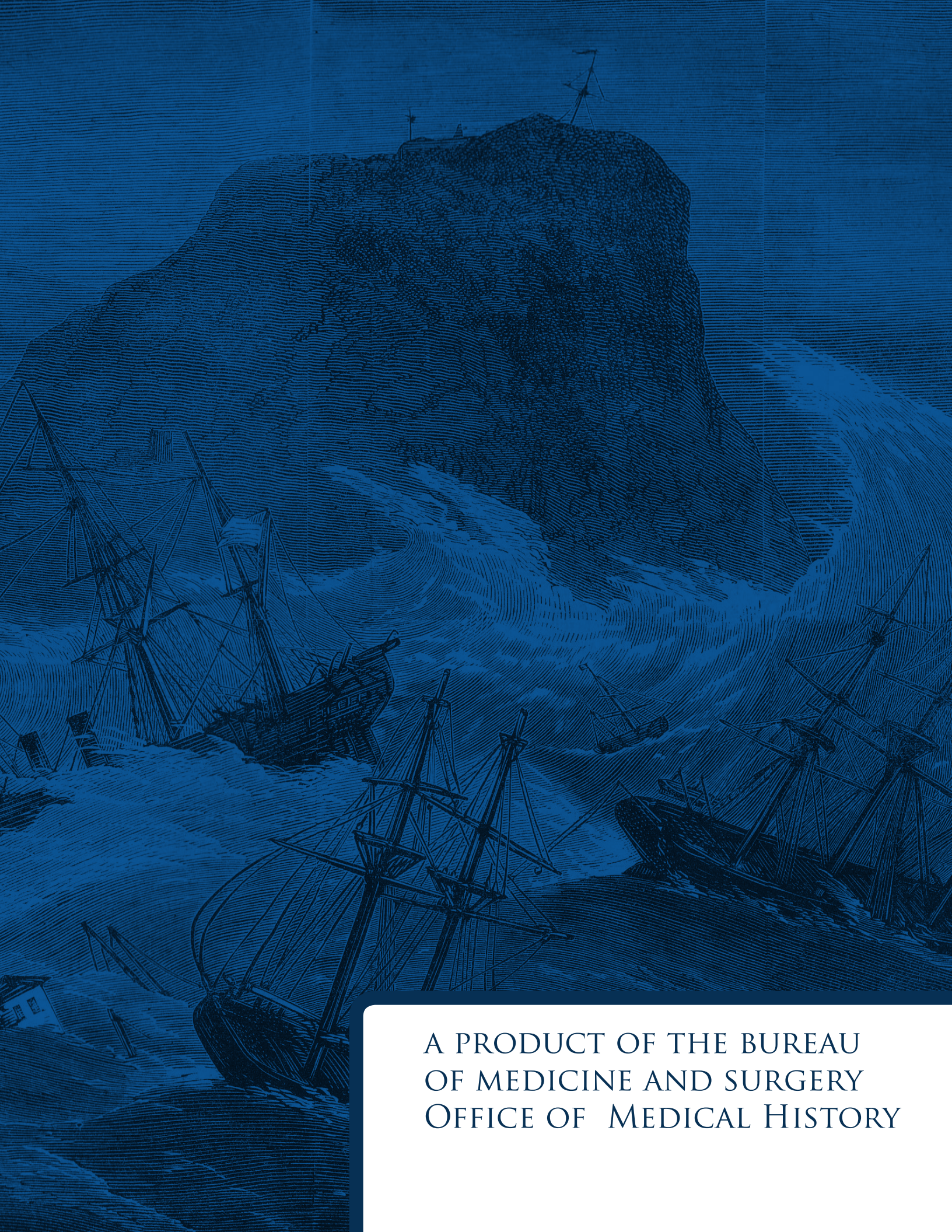
new, and here they are in Army uniforms.” The survey team sent to evaluate the BTIF was this time expanded to include a psychiatrist (CAPT Koffman) and clinical psychologist (Dr. Heidi Kraft), in addition to research psychologists CDR Dave Service from the Naval Health Research Center, and LT Campbell. This unique blend of behavioral science and clinical mental health expertise allowed for on-the-spot analysis of survey data measuring the risk for psychological disorders (e.g., post-traumatic stress disorder, depression, anxiety), protective factors (e.g., morale, unit cohesion), and risk factors (e.g., sleep deprivation, poor living conditions, combat exposure) that could be combined with clinician-led, one-on-one encounters and focus groups to form a multi-faceted evaluation of the unit’s overall psychological health. In the case of the BTIF, the data revealed a seriously compromised unit climate, as well as a commander described by the sailors as “leading us into the jaws of hell.” The results of this multi-disciplinary intervention, which would eventually serve as the model for current MCTs, led to direct and immediate action by senior Navy leaders to address problems in that specific unit, as well as policy changes to mitigate the inherent stressors as-

sociated with all detainee operations.

While these stories are snapshots of particular situations and just a small sampling of the IA population, they provide insight into the effects of combat or operational stress on a Navy population—and some Marines—that due to their unique situation may be overlooked when considering the many psychological burdens associated with combat deployments. They also offer a look into efforts of BUMED and the Navy and Marine Corps leadership to address the needs of IAs, and to ensure these men and women are not lost in the shuffle. These vignettes further illustrate the value of establishing centralized training in the prevention of combat and operational stress, the utility of unit-based mental health surveys, and the value of deploying mental health professionals with a direct mission to care for Individual Augmentees, who otherwise may remain isolated and adrift in a sea of strangers.

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