“Some System of the Nature Here Proposed”

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Joseph Lovell's
Remarks on the Sick Report, Northern Department, US Army, 1817
and the
Rise of the Modern US Army Medical Department

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To my son, Sam

Title quotation comes from a letter from

Joseph Lovell to Brigadier General Jacob Jennings Brown,

15 November 1817

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Contents

Foreword

THIS IS A LESSON ABOUT constancy and change. Constancy in the sense of commitment, persistency, and permanence. Change in terms of continual evolution and growth. Surgeon General Joseph Lovell established the US Army Medical Department on strong and uncompromising codes of military and medical conduct, ethical principles, and educational standards. Yet he and, more importantly, his 19th-century successors never let the constancy of this foundation inhibit the necessary, and inevitable, evolution and growth of the organization. Indeed, the constancy of its foundational ethos not only allowed, but arguably directed and enhanced, the military, medical, and social evolution of the department over its first 82 years.

Joseph Lovell would be stunned by the evolution and growth of his department; the wide range of medical, surgical, nursing, and ancillary specialties and therapeutic modalities; the comprehensive evacuation and logistical capabilities; and the gender, ethnic, and religious diversity that comprises our department today. But he absolutely would recognize that his foundational principles and standards continue to validate the US Army Medical Department in the 21st century.

The following pages tell a story of both constancy and change: how Lovell and his 19th century successors led the nation and the Army to expect, and even insist upon, the highest standards from Army Medicine. It is, as well, a lesson for Army Medicine to carry forward.

Acknowledgements

Although Joseph and Margaret Lovell lived, worked, and raised a large family in Boston, upstate New York, and a very young Washington, DC, during some exciting times in our republic's early years, their lives remain largely enigmatic. Obtaining glimpses into their world was a difficult but fascinating journey, and one in which I received assistance from a wide range of sources.

To Mrs. Candace S. Shireman, Curator of Blair House, the President's Guest House for the Department of State, I want to express a very special thank you for her time and interest. She provided me with invaluable historical tours of Blair House, information on the Lovells during their residence, and an introduction to Lovell descendents, Mr. and Mrs. Alvan S. Carr of Waitsfield, Vermont. Through the kindness of the Carrs, who provided a copy of the Lovell family genealogy, I more accurately reconstructed young Joseph Lovell's life.

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Point, New York; the Delaware Public Archives in Dover; the Delaware Historical Society in Wilmington; the Maryland State Historical Society in Baltimore; the Maryland State Archives in Annapolis; the Special Collections at the Strom Thurmond Institute in Clemson, South Carolina; and the Redwood Library and Athenaeum in Newport, Rhode Island.

Introduction

The medical departments of the four US uniformed services (Army, Navy, Air Force, Public Health Service) provide state-of-the-art clinical care, conduct research, and are deployable around the world at a moment's notice. In the recent conflicts in Afghanistan and Iraq, wounded service members entered a chain of uninterrupted medical, surgi-cal, or psychiatric care from point of injury on the battlefield to definitive care and rehabilitation in the United States. The ability of this joint military medical organization to save lives and mend body and mind is phenomenal. Advancing science and technology provide the means to accomplish many of these achievements. These resources, however, would be rendered dysfunctional, if not com-pletely inert, without an organizational and operational structure to give them a coherent form and coordinated function. Such a structure did not always exist.

After the Revolutionary War, the US Army deteriorated into an inadequately trained and poorly led force as early America turned primarily to state militias and volunteers for its defense. From 1801 to 1812, the Jeffersonian Republicans neglected the national army. Its medical services had no directing officer; the president ordered its surgeons and surgeon's mates to various posts; and most of its assets existed on paper only. The War of 1812 reinvigorated the Army as a whole, but appeared to bring only a belated and brief revival of the medical department. In the aftermath of the second war with Great Britain, however, a young and energetic secretary of war, John C. Calhoun of South Carolina, proposed not only to establish a permanent standing army, but also to reorganize its staff for future effectiveness and efficiency.

On 14 April 1818, the US Congress approved Calhoun's proposal to reorganize the Army staff elements into six departments: quartermaster, a combined adjutant and inspector general, ordnance, commissary, paymaster, and medical, all located in Washington City. A major political victory for Calhoun, the Army, and its supporters, the act created a permanent surgeon general and institutionalized the medical department for the first time in American history. The implementation of this landmark event was due to the astute observations, experiences, and visionary insight of Calhoun, Major General Jacob Jennings Brown, and Joseph Lovell, MD. Its origins, however, are found on the battlefields of the War of 1812 and in a commentary of a medical report submitted by Lovell to Brown.

Lovell's *Remarks on the Sick Report of the Northern Department for the Year Ending June 30th 1817* impressed Brown and Calhoun in turn. The report reflected a deep and broad understanding of military medical history and experiential knowledge; a genuine concern for the service and those served; and a thinly veiled indignation for those not entirely committed to the Army. Its 14 handwritten pages offer insight into the mind of the first Army staff-level surgeon general. Nearly 200 years later, it still can be read profitably by junior and mid-level Medical Department officers, for although Lovell detailed the perennial trials and tribulations of medical officers in field and garrison settings, he also described the blueprint, the essential charter, for the organization, administration, and function of the modern Army Medical Department.

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Chapter 1

A Second War for Independence

As the bicentennial of the War of 1812 has approached, a new, erudite, and valuable literature has emerged, describing the war through American, British, and Canadian eyes, and the social and political environment of the early republic.[1] One historian recently called the war one of America's most important conflicts, not for battles won or territory gained, but for the maturing, confidence-building impact it had on the young nation.[2] Another interpreted the same facts and circumstances of near-disastrous events as an effort to maintain American identity, dignity, and sense of worth among not only the nations of the world, but also its own citizens.[3]

While both interpretations are valid, it appears that the War of 1812 is, as Donald R. Hickey dubbed it, a "forgotten conflict."[4] America's "second war for independence," an epithet that should generate more than passing interest, is remembered in America primarily, if not only, for the dramatic poem that would become the national anthem, and for Andrew Jackson's military victory in the bayous near New Orleans. In Britain, where the war was more of an irritating side show to the more desperate struggle with Napoleon, the majority of the population, according to one author, seems completely unaware that their army burned Washington, DC, in the summer of 1814.[5] In Canada, the war was recently memorialized as a British victory in a sculpture by artist Douglas Coupland.[6] The various views about the War of 1812 over the past two centuries involve the origins of the war, how and where it was fought, and the perspectives and development of the nations involved.

Diplomatic Trials of a Proud Young State

America's post-revolutionary self-perception as a politically and socially superior nation-state compared to European monarchies, and its expectations that those monarchies would immediately accept and respect the new country as an equal on the world stage, provide the rationale for a series of decisions that led to America's declaration of war with Britain in June 1812. These decisions began soon after the first coalition (Britain, Austria, Prussia, Spain, the United Provinces) formed to thwart republican France from expanding its national frontiers in 1793.

Indignant that America supported France, Britain imposed restrictions on American shipping rights, claimed the right to stop and search American ships for Royal Navy deserters as its need for seamen grew, and caused trouble on the northwestern frontier. President Washington's diplomatic efforts led to the manifestly unsatisfactory Jay Treaty of 1795.[7] War was avoided with Britain at the expense of French indignation and the Franco-American Treaty of 1778.[8]

The French responded by more aggressively seizing American ships, and diplomatic relations deteriorated rapidly. Congress then initiated the "quasi-war" with France,[9] which placed an embargo on all trade, declared all treaties null and void, and allowed merchantmen to arm and defend themselves. The situation was brought to an end by the Treaty of Mortefontaine[10] in 1800.

The first coalition failed by 1799, as did a second coalition in 1801, and the Treaty of Amiens, in March 1802, concluded the second round of conflict with republican France. During this decade of war, American merchantmen enjoyed a prosperous trade carrying goods from British and French ports in the West Indies. Britain objected and claimed the right to seize American cargos coming from French West Indies ports, considering them enemy contraband. American merchants evaded the rule through the "broken voyage": ships from the French West Indies landed at American ports, paid duties, then had the duties refunded, and sailed for France. Over time, however, the broken voyage and impressment of sailors came to be ignored by merchants and politicians on both sides of the Atlantic.

War broke out in Europe again in May 1803. A third coalition formed, but from 1803 to 1805 Britain carried the majority of wartime risks and engagements alone. Indignant that a neutral Jeffersonian America was not only making money while Britain bled, but also had no qualms in trading with the French or in expanding their emperor's coffers via the purchase of Louisiana, Britain was also desperate to replace sailors lost through desertion or combat and determined to maintain its

own economy while crippling that of France. Britain's attitude and policies toward its former colonies began to harden. Increasingly, the Royal Navy detained American vessels in search of British deserters, but British officers were not too discerning over citizenship if extra crewmen were needed. Impressment of sailors and seizures of cargos rose dramatically through 1805.

American anger over Britain's attempt to rule the Atlantic shipping lanes, shifting political power in the British Parliament, and Napoleon's disregard of American neutrality precipitated a complex diplomatic crisis for the still largely Francophile Jefferson administration. Congress formulated the Non-Importation Act in the early months of 1806, but delayed its implementation, hoping to use the act as a bargaining chip. However, the Monroe-Pinkney Treaty, signed on 31 December 1806, fell far short of expectations. Britain claimed the right of impressments, although promising to be more careful not to take Americans, and denied any indemnities for previously seized ships. Americans could carry on trade between the French West Indies and French ports for the moment, but British Orders in Council[11] would rescind the privilege in the near future. Moreover, American ships would have to stop at a British port enroute to the continent, thereby ignoring Napoleon's Berlin Decree that forbade importation of British goods into French-controlled areas.

As 1807 began, Britain and France were poised to pummel America at will in this war of commerce. The Monroe-Pinkney Treaty was dead on arrival in Washington. President Jefferson was so disappointed he refused to present it to Congress and returned it to the British minister.

Then, on 23 June, the British ship *Leopard* stopped the frigate USS *Chesapeake*, just out of Norfolk, to search for British deserters. Both commanders, Vice-Admiral Sir George C. Berkeley and Commodore James Barron, knew that men from British ships had deserted to the *Chesapeake* in Norfolk. Barron had accepted these men as American citizens while Berkeley still considered them British subjects. Berkeley demanded they be returned, Barron refused, and the 50-gun *Leopard* unleashed a broadside into the unprepared American vessel. Three men were killed and sixteen wounded. Berkeley took the four men he was after, told Barron he regretted any loss of life, offered assistance, and then departed. The *Chesapeake* limped back into Hampton Roads, where the ship's humiliation provoked anti-British rioting that quickly spread to other cities and towns.[12]

Indignation over the Chesapeake Affair reverberated throughout the country. However, Jefferson and most of his Republican base wished to avoid a military solution in the summer of 1807. Therefore, he asked

Britain for a formal explanation of events, urged Congress to intensify economic pressure against Britain, barred all British warships from American ports, recalled American ships from abroad, and prepared state governors to call out their militias.[13] Although Britain offered compensation for the attack, it refused to link the affair with a non-impressment agreement. The magnitude of American anger over the incident was apparent. Fearful of an aggressive American response into Canada or the Floridas, Britain resumed a closer relationship with Native Americans in Upper Canada and the American Northwest Territory (this relationship had lapsed since 1796).

In December, Congress allowed the 1806 Non-Importation Act to become law. Soon after, Americans learned that Britain had declared a complete blockade of France and all French-controlled ports in response to the Berlin Decree, was preparing to impress sailors not only from merchantmen but also from warships, and that Napoleon planned to enforce his decree more vigorously. American neutrality was at an end. Although the act's main purpose was to keep American ships and sailors out of harm's way, and it targeted both European belligerents, it was also meant to cripple British trade (the same goal as Napoleon's Continental System[14]).

The idea of a complete embargo arose from Jefferson's mistaken belief that American agricultural products were essential to European welfare. Without American cotton and hemp in their mills and food in their bellies, Britain and France were expected to repeal restrictions on commerce. The act passed both houses with little trouble on 22 December,[15] although merchants from northeastern and some southern ports disregarded the embargo through a variety of legislative loopholes and maintained an active smuggling trade with Canada and the Caribbean.

Over time, however, the Embargo Act became an economic, social, and political nightmare for Jefferson and the Republicans. If Britain's actions to that time, Napoleon's mid-December Milan Decree (declaring any neutral ship searched by, paying dues to, or docking in Britain liable to seizure), and his April 1808 Bayonne Decree (ordering the confiscation of American ships in French ports), did not show Jefferson and Congress that the Embargo Act had failed to gain Europe's attention, then the cotton, tobacco, hemp, and rice deteriorating in western and southern warehouses most certainly did.

American farmers and merchants suffered much more from the embargo than either of its intended targets. Jefferson and Congress had backed themselves and the nation into a corner from which the only escape appeared to be war with Britain and France. Although Jef-

fersonian Republicans had become disenchanted with imperial France, a visceral fear of Britain and its neocolonial attitude toward America overrode any desire to fight Napoleon. However, in early 1809, neither money nor military resources were available to support a military solution to America's economic troubles.

Jeffersonian policies reinvigorated the Federalists and fractured the Republican Party block. Jefferson's second term came to an end, mercifully for him, at the same time the Non-Importation and Embargo Acts were to expire, 4 March 1809. James Madison took the helm of state the same day. Madison's election maintained Republican dominance in Washington and the new president managed to keep the public's confidence. However, his position as head of state and leader of the Republican Party was unenviable at best. Britain and France ignored America's sovereign rights as they tightened the commercial screws. Angry Federalists, predominantly from New England and New York, representing Anglophile American mercantile interests, criticized the president, as did "Old Corps" Republicans, who advocated an impractical agrarian isolationism, led by the shrill-voiced Virginia representative, John Randolph. Even some of the party faithful had their own agendas.[16]

Madison's first cabinet, one of the weakest in history, resulted from the success of these opposing interests, a desire for sectional unity, and his own timidity. Desiring the capable Albert Gallatin for secretary of state, Madison was pressured to leave him at Treasury in favor of Robert Smith, the amiable but wholly incompetent brother of Senator Samuel Smith. Caesar A. Rodney of Delaware remained a part-time attorney general, splitting his time between Washington and his Wilmington law practice. William Eustis was selected as secretary of war. A former Continental Army surgeon, Eustis had given up medical practice to enter politics, but was without remarkable talents for the position. South Carolinian Paul Hamilton, whose affinity for drink nullified any qualities he might have, was selected as secretary of the navy.

In the spring of 1809 Madison hoped the Non-Intercourse Act, recently fashioned by Congress, would finally get the attention of Britain and France and satisfy political interests at home. The act precluded any trade with Britain and France but allowed American trade with neutral countries around the globe, shut American ports to British and French warships, and promised a resumption of trade with both belligerents once they demonstrated a respect for American commercial rights. The act proved an excellent face-saving nostrum, but was nearly as useless as the legislation it replaced: Britain and France ignored it and, in reality, there were too few neutral ports of significance to make a difference.

In 1810 America's attitude concerning war with Britain began to change: the weak economy and few military and naval resources notwithstanding, the nation began to believe that war would provide a solution to its difficulties where the embargo had not. Although there was no rush to arms, the impotence of the Non-Intercourse Act and the attempt of the House to replace it with Macon's Bill Number 1,[17] a weak bill by which American ports would remain closed to Britain and France until one or the other rescinded their oppressive policies, brought forth not only the acerbic criticism of John Randolph, but also the belligerence of the young senator from Kentucky, Henry Clay. Dissatisfied with all peaceful attempts to placate European arrogance, Clay commented, "I am for resistance by the *sword*."[18] Clay was, for the moment, the only vocal militant in the 11th Congress. That body interpreted Madison's less-than-wholehearted support of Macon's bill as a suggestion to rework its efforts. The resulting bill, Macon Number 2, opened American ports to both belligerents; if one of them rescinded its commercial policies, the president was authorized to reinstate the Non-Intercourse Act against the other if that country failed to follow suit in 3 months. Enacted 1 May, Macon's Bill Number 2 was an untenable piece of legislation concocted by a group of legislators who would be remembered as one of the most pusillanimous and irresolute in American history. Ironically, the bill initiated a series of events that would lead to war.

Napoleon, whose contempt for and treatment of America and its rights as a neutral country were every bit as egregious as Britain's, and perhaps worse, had increased the seizure of American ships since March 1810.[19] Upon hearing of the revised Macon Bill in August, however, he informed the American minister in Paris that because the Non-Intercourse Act had been repealed, the Berlin and Milan Decrees would likewise be repealed with the understanding that if Britain did not revoke the Orders in Council, American non-intercourse with Britain would resume. Madison allowed himself to be used by the less-than-sincere French emperor, but was satisfied that the gauntlet had been laid down to the British in November, the last action of the inept 11th Congress. The challenge was ignored and the Non-Intercourse Act against Britain was confirmed on 11 March 1811.

Napoleon never repealed either decree completely, a fact that generated American anger and indignation against France nearly equal to feelings against Britain. Nonetheless, the new secretary of state, James Monroe, continued to believe the French were playing fairly and kept attention focused on British diplomatic condescension and recalcitrance on the high seas. With its life-and-death struggle with Napoleon taking

precedence over all other considerations, Britain would likely never recognize the repeal of the decrees.

Even the American seizure of Spanish West Florida in October 1810 and the firing of the USS *President* on HMS *Little Belt* in May 1811 (an event directly related to the impressments issue and one that angered Britons) were minimized and contained. Britain did not want war with America, but no progress on the issue of impressments occurred. Anti-British sentiment in America also intensified through 1810–1811 because of new Native American aggression, which was attributed directly to London policies in Canada. In the late fall, the government supported Indiana Territorial Governor William Henry Harrison's call for troops to attack the Shawnee village Prophetstown, at the confluence of the Wabash and Tippecanoe rivers. Although Shawnee leader Tenskwatawa inflicted significant casualties on American troops early on 7 November, Harrison secured the victory.

Reign of the War Hawks

These events combined to produce a growing hostility to Britain in the 12th Congress, particularly among some of its youthful new members in the House of Representatives. These young men, led by former Kentucky Senator Henry Clay, now Speaker of the House (where he felt he could more ably serve his Kentucky constituency than in the staid, slow-moving Senate), included John C. Calhoun and William Loundes of South Carolina, Felix Grundy of Tennessee, Richard M. Johnson of Kentucky, George M. Troup of Georgia, Peter Porter of western New York, John Harper of New Hampshire, and represented largely southern and western interests. All, however, were devoted nationalists. Dubbed the "War Hawks" by John Randolph, their numbers were relatively small, but Clay ensured that War Hawks chaired or had majority votes on all committees. Therefore, their power and influence on Capitol Hill grew rapidly. The War Hawks believed America had been humiliated on the high seas and in diplomatic parlors of Europe over the past few years. The nation's dignity and honor had to be restored. That restoration, noted the Foreign Relations Committee in its late 1811 report, lay in redressing maritime grievances. The committee also recommended that an additional 10,000 men be recruited into the army, a volunteer force of 50,000 raised, American merchantmen armed, and all unprepared navy vessels outfitted for war should Britain refuse to adjust its maritime policies.

This was bold talk for Republicans, traditionally supporters of small military and naval forces and low taxes. Internal party dissent,

even among War Hawks, as well as stonewalling by Federalists and John Randolph's radical Republicans, made progress toward these goals agonizingly slow. A regular army of 35,000 and a militia force of 50,000 were agreed upon. Just how and where the country would find 15,000 men to join the regulars for 3 years was not addressed, nor was the issue of whether the federal government could order state militias to march onto foreign soil resolved. A request from the president for 12 ships of the line[20] and 10 new frigates, re-outfitting the 10 frigates then in service, and enlarging the Navy Yard was vigorously debated, but not even Clay's support could get these measures approved. To raise money for the war effort, Congress reluctantly agreed to doubling customs duties, directly taxing each state $3 million, taxing certain articles such as salt, and raising a loan of $11 million. States were promised that the taxes would not become effective until war was declared.

President Madison, whose pro-war stance intensified as discussions with the British minister grew more pointless, was also weary of congressional wrangling over war measures. In early March he presented letters from a British spy, John Henry, who had worked in New England for Canadian Governor Sir James Craig during 1808–1809. The documents described a British-led, Federalist-supported attempt to dissolve the Union. Afterward Henry did not receive as appropriate a reward as he desired from the British government and offered to sell his dispatches to the US Secretary of State. Monroe gladly purchased them for $50,000. While the documents failed to reveal specific Federalist names, when the information made the newspapers, the idea that such a conspiracy might be in the making had the Madison administration's desired effect. American outrage was heard in the halls of Congress. When word came later in the month that Britain still refused to compromise, and France was burning American merchantmen carrying grain to General Arthur Wellesley's British Army in Spain, Madison asked for a 60-day embargo with a declaration of war against Britain to follow. The House agreed, but the Senate delayed the inevitable by adding another 30 days to the embargo.

On 1 June 1812 Madison's war message was read to Congress. The decision for war belonged to Congress, but Madison encouraged it to make a decision "worthy of the enlightened and patriotic councils of a virtuous, a free, and a powerful nation."[21] On 4 June the House promptly voted for war, 79 to 49; in the Senate, where vigorous debate continued until 17 June, the pro-war faction finally garnered 19 of 29 votes. Madison and Congress now had the war they wanted, but only a little over half the loan to support the war effort had been raised. State taxes had

not been imposed, and Navy Secretary Hamilton, bowing to British naval superiority, suggested his Navy Department sit out the war in dry dock. The robust army that Congress had agreed to, but feared establishing, had not materialized either.

Madison's army, directed by Secretary of War William Eustis, consisted of 12,000 men, lacked a commanding general, and was divided geographically into three departments: the Northern, consisting of New England and the middle Atlantic states, commanded by Major General Henry Dearborn; the Northwest, consisting of Ohio and the northwest territories,[22] commanded by the Michigan territorial governor, Brigadier General William Hull; and the Southern, encompassing the southern Atlantic and Gulf Coast states, commanded by Major General Thomas Pinckney, a South Carolina Federalist. These men and a number of their subordinate commanders were of the revolutionary generation. They had been raised and educated in the Atlantic seaboard colonies as British subjects, and during the War of Independence they served in subordinate roles. Their post-revolution world was a parochial one, concerned with the organization, administration, and economic measures required to maintain cohesion of the states, less as a nation than as a confederation of colonies with common interests in westward expansion and defense of frontier settlements. Now in their fifties and sixties, they were no longer the robust, vigorous men of 1776, and their military experiences were inadequate to the demands of war.

The first of these demands was to determine how America could strike an effective blow against Britain. With an impotent navy, a seaborne attack, the most obvious considering America's list of grievances, was rendered moot. Therefore, attention turned north to Upper and Lower Canada. British supplies moving down the St. Lawrence River and across lakes Ontario and Erie to western military posts had supported Native American attacks on the American northern and northwestern frontiers since the end of the Revolutionary War. Control of these waterways became the primary military and naval strategy throughout the war, with the permanent seizure of Canadian territory arguably a secondary goal.[23]

The second demand was to maintain an efficient, effective, and healthy fighting force. This required consistently competent inspection, supply, commissary, and medical departments. In an era when the modern military staff was barely in its infancy, the commander was directly responsible for the appropriate functioning of these services, and throughout the war American commanders recognized inspection and logistic functions as inherently legitimate to an army. They did not

regard medical services in the same light. The medical department—like ordnance, purchasing, pay, judge advocate, and chaplain services—was not considered a "constituent part of the army,"[24] but rather a necessary supporting service attached to the army by the government. This status was almost universal[25] among medical departments in Western armies in 1812. Because of his experience as a surgeon in the War for Independence, Secretary of War Eustis believed he could direct both the War Department and medical services in the field.[26]

Military and Medical Disaster on the Frontier, 1812–1813

The initial war strategy, developed by President Madison, Secretary of War Eustis, and General Dearborn, aimed at stopping British supplies moving down the St. Lawrence River. A simultaneous three-pronged attack against Montreal and the Niagara and Detroit frontiers was conceived, with Dearborn commanding the northeastern theater, Major General Stephen Van Renssalaer, a militia officer with no previous military experience, commanding at Fort Niagara, and Brigadier General Hull commanding the western theater.

Hull's sizable force cut its way through the wilderness from Urbana, Ohio, to Detroit in early summer 1812.[27] He reached his objective as planned, but the effort soon began to lose momentum. Some Ohio militia, noting the illegality of militia fighting on foreign soil, refused to invade Canada, and Hull's fears of being cut off and overrun in the wilderness, compounded by the loss of Fort Mackinac in July, made him timid and indecisive. Put under siege at Detroit, his resolve and dignity shattered, Hull ordered the surrender of Fort Dearborn at Chicago and then gave up Detroit to the British.

At Fort Niagara, Major General van Renssalaer wrestled with a shortage of men, materiel, medicine, and morale until October. Reinforced by the command of Brigadier General Alexander Smyth, a regular army officer who would decline to take orders from a militia officer, van Renssalaer proceeded with a two-pronged attack into Canada against Fort George and Queenston Heights, 6 miles to the south, on the night of 12–13 October.[28] The amphibious landing was hotly contested, but the Americans gained purchase on the steep shore. Captain John E. Wool and his detachment stormed Queenston Heights and then successfully defended it against a very determined British counterattack. Van Renssalaer directed the New York militia to reinforce the American toehold on Canada, but to his surprise and consternation, they refused to cross the border just as their Ohio counterparts had done at Detroit. Later in the

afternoon, he watched through his spyglass as a British column from Fort George captured the heights and his forward elements.

A few hundred miles to the northeast, General Dearborn, who was supposed to conduct operations against Montreal in support of the western assaults, was still gathering recruits when Hull and van Renssalaer were defeated. Prodded by Secretary Eustis, Dearborn finally marched his 6,000- to 8,000-man force from Albany to Plattsburg in November. Later in the month he marched to the Canadian frontier, where the militia once again declined to cross and the regulars skirmished with British forces, but Montreal was never threatened.

The American strategy in 1812 was sound in theory, but the plan required active coordination and communication of regular and militia commanders, intelligence gathering, proper security, and logistical support beyond the capabilities of the commanders, the soldiers, and the government. Medical support for this offensive was inadequate for many of the same reasons. Eustis directed every aspect of medical administration from personnel and logistics to the proper size of regimental medical chests, but apparently without an efficiently organized system for proper implementation of his orders. Francis Le Baron, MD, in charge of the sole medical supply depot at Albany, was soon overwhelmed by the number of Eustis's orders. This micromanagement, in conjunction with slow transportation, bad roads, and regimental surgeons unclear about their duties, wasted large amounts of supplies and left Hull and van Renssalaer inadequately served.

The armies of all three commanders suffered from diarrhea, dysentery, typhoid fever, and intermittent fevers (malaria) during the summer and early fall months. As winter approached, some of these maladies declined, only to be replaced by respiratory complaints. James Mann, MD, medical director for US forces in New York and stationed at the Greenbush Camp, gave a concise and accurate summation of the contributing causes for high morbidity and mortality among the camps in his post-war *Medical Sketches*:

> The science of preserving health is too little known to new recruits; a knowledge of which, young officers unaccustomed to the police of a camp, do not impress upon them the importance of acquiring. An inattention to a proper dietetic management was among the causes of diseases and mortality, incident to our troops; to which may be added filthiness, and an intemperate use of ardent spirits. These sources of disease we shall have repeated occasion to notice; as frequent causes of the failure of important expeditions, and ruin

of armies; by which, the highest expectations of a nation are often disappointed.[29]

Mann, however, was happier with the success of his medical staff. The hospitals established at Greenbush and Plattsburgh, New York, and Burlington, Vermont, were much closer to resupply from Albany and the directors of these facilities were by and large effective in their clinical and administrative duties. Greenbush was "in good order,"[30] and Mann commented that Dr. William H. Wilson's[31] Plattsburgh hospital was "found in the best state,"[32] but that "no less credit was due to Doctor Lovell . . . under whose charge the hospital at Burlington is placed."[33] Joseph Lovell, MD, surgeon of the 9th US Infantry Regiment,[34] had been made acting hospital surgeon at Burlington in November. Through the use of proper sanitary practices and efficient administration, he and Dr. Walter V. Wheaton made the 40-ward hospital a model facility.[35]

In December 1812, Eustis was replaced by John Armstrong. The following spring Armstrong implemented a sequential three-objective campaign: an amphibious attack upon York (now Toronto), the capital of Upper Canada, followed by renewed attacks on Fort George and Fort Erie on the Niagara River, and then the capture of Kingston at the north end of Lake Ontario.

In late April 1813, General Zebulon Pike and 1,700 troops from Sacket's Harbor rapidly broke through York's unfinished defenses while US Navy guns, commanded by Commodore Isaac Chauncey, maintained covering fire on British artillery batteries. The Canadian capital was seized, but as the last British troops departed, they ignited the main magazine. The resulting explosion mortally wounded Pike, killed 38 of his command, wounded 222, and probably precipitated the looting and burning of York.[36]

The following month Chauncey's guns pounded Fort George in preparation of another amphibious landing, this time by Dearborn's troops. Commodore Oliver Hazard Perry directed the landing craft that put Colonel Winfield Scott's three brigades on the Canadian side of the Niagara River while navy guns rained grapeshot and canister on British defenders. British Brigadier General John Vincent, in command of 1,900 mostly militia[37] troops at Fort George, gave battle, but soon recognized he was outmatched. He abandoned Forts George, Erie, and Chippewa, and pulled the garrison out of Queenston. The entire Niagara frontier was now in American hands, if only temporarily. A summer British offensive largely nullified earlier American victories, and by the end of the year British troops had destroyed Lewiston, Black Rock, and Buffalo, New York.

At the western end of Lake Erie, British forces and their Native American allies, commanded by General Henry Proctor and Shawnee chief Tecumseh, respectively, prepared to invade Ohio. Proctor's attempts to dislodge General William Henry Harrison's well-entrenched defenders of Fort Meigs on the Maumee River failed in May and July, as did his attack on Fort Stephenson in early August. Commodore Perry's naval victory at Put-in-Bay in September gave control of the lake to the Americans, loosened the British hold on Forts Detroit and Malden, and materially assisted Harrison's plan for an October invasion of Canada.

Harrison gathered his force of nearly 5,500[38] at the western end of Lake Erie in September. His troops pried the British out of Detroit, then followed them across the Detroit River and pushed them out of Fort Malden. Proctor's dawdling pace made him and his small army[39] easy prey for the Americans, who found his thin lines prepared for battle on the Thames River near Moraviantown on 5 October. Harrison launched his mounted troops, armed with muskets rather than sabers, directly into the British lines. The assault broke the British defense, putting British troops in a deadly crossfire and ensuring an American victory.

Obtaining the third strategic objective, initiated in September, involved Major General James Wilkinson bringing a flotilla down the St. Lawrence River, approaching Montreal from the west, while Major General Wade Hampton closed in from the south. However, the two commander's animosity toward each other was such that any cooperation was impossible. Secretary of War Armstrong attempted to coordinate operations in person without success, and the operation inevitably was delayed. Finally, Hampton moved into Canada. In late October, he was beaten on the Châteauguay River, in part thanks to the refusal of militia to participate in battle. Wilkinson, sick and over-medicated with opium and alcohol,[40] struggled down the St. Lawrence River in bad weather to send his forces against well-prepared British defenses at Chrysler's Farm on 11 November. He retreated across the St. Lawrence in the sleet and mud to French Mills, New York, for the winter.

Although the Army's medical problems remained largely unchanged through 1813, the nature of those problems became more apparent after the selection of James Tilton, MD,[41] as physician and surgeon general of the Army on 11 June. A Revolutionary War physician and surgeon and War Hawk supporter, Tilton believed his 67 years and accompanying infirmities precluded his usefulness in the field. Instead he contributed to the war effort by writing a small book, *Economical Observations on Military Hospitals and the Prevention and Cure of Diseases Incident to an Army*, intended to educate state legislatures, commanders, and medi-

cal staff on the fundamentals of military medicine. Published in February 1813, it apparently came to the attention of Secretary of War Armstrong, who recruited Tilton to accept leadership of the medical department.[42]

Tilton was gratified and, despite his age, eager to be at his work,[43] and immediately departed for Sacket's Harbor, New York,[44] the staging point for Wilkinson's attack on Kingston. He arrived on 1 August to find "one of the filthiest encampments that ever I saw. It beat Kings-Bridge in 1776."[45] Tilton commented he had "hard duty for three months,"[46] but was, with command support, successful in his sanitary campaign, and the health of the garrison improved.

Comments made by Dr. William M. Ross, hospital surgeon at Sacket's Harbor, in his 11 and 18 September sick reports to his commander, Brigadier General Jacob Jennings Brown, provide a window into just how bad the situation was. In the later report Ross noted that the number of sick had declined, yet only one week earlier he had told Brown that approximately 19% (681) of his effective strength was in the hospital.[47] Ross attributes most of the illness to the lack of fresh water, bread flour that had been adulterated with lime and contaminated with ergot, and ignorance of camp police (ie, the policy and practice of keeping an encampment hygienic) by new soldiers.[48] Furthermore, the post's general discipline and order was noted by Wilkinson and other senior officers upon their arrival at Sacket's Harbor to be lax, a condition not unique to that post. Wilkinson inspected regiments at Fort George, part of his planned assault force, during September and found 1,165 officers and men sick. According to Assistant Adjutant General John Hite, the garrison was "decent in clothing; the arms were good; the organization defective and discipline loose."[49]

The same lack of organization and discipline that precluded a consistent and efficient camp police, apparently obvious to Wilkinson and his staff, hampered medical planning for the expedition down the St. Lawrence. Wilkinson had arrived at Sacket's Harbor on 20 August with Dr. Ezekiel W. Bull, surgeon to the general's staff, then departed for his inspection tour of Fort George on 4 September. The day after Wilkinson left, Armstrong arrived with the chief engineer of the Army, the acting adjutant and inspector general, the commissary general of ordnance, and their staffs. In mid-September, Ross began gathering and organizing medical equipment and supplies for the expedition without a direct order from Wilkinson. A requisition for hospital stores was denied by Quartermaster Robert Swarthout, who commented that "the commanding officer of the post, is the proper person to consult on the quantity of stores, that will be necessary for the intended expedition."[50] Frustrated,

Ross continued to apply for medical provisions and boats for transportation without success until he was appointed to "attend the expedition"[51] by Armstrong with the concurrence of Tilton on 4 October, the day Wilkinson returned from Fort George. After that date it appears that Ross's confusion and impotence to prepare medically for the expedition increased as Armstrong and Wilkinson bickered, and Bull, Swarthout, and his staff offered conflicting advice and support.[52]

It required nearly a month, from 16 October to 11 November, for Wilkinson's force to struggle from Sacket's Harbor to defeat at Chrysler's Farm. Along the way the force lost nearly half its rations and large amounts of medical supplies, ordnance, ammunition, and personnel.[53] Dr. Lovell, who experienced the entire expedition from Fort George to French Mills with the 9th US Infantry Regiment, commented, "During the whole of October, and part of November, most of the troops were exposed to excessive fatigue, and almost incessant rains, in open boats on the lake."[54] He also noted that most of the troops "had lost their blankets and extra clothing, on their march, or in the action of 11th November, at Creistler's [sic] fields, in Canada."[55] Wilkinson wrote later that the "maladies which afflicted our troops were so universal, that our flotilla was a *floating hospital*. An officer of high rank remarked, that our army might be tracked from Sacket's Harbor to the French Mills,"[56] presumably by the trail of sick and wounded left along the road.

America's morale boost from the tactical victories on land and sea early in 1813 faded by year's end. Although Armstrong had worked diligently to divest the majority of revolutionary-era officers from all levels of Army command, leaving a younger, more competent set of brigade and higher commanders to conduct the war, logistics, recruiting, and medical support remained problematic as the 1814 campaign season opened. To compound these issues, Napoleon's armies had been thrown out of Spain and defeated at Leipzig, thereby allowing the British Army and the Royal Navy to focus on North America. The 1814 campaign had to be quick and decisive.

Military and Medical Dignity Regained

American control of the western theater and Lake Erie was nearly complete. Only well-fortified Fort Mackinac remained in British hands, and control of Lake Ontario remained undecided. On 3 July, American General Jacob Jennings Brown crossed the Niagara and captured Fort Erie. Two days later, Winfield Scott led 1,500 of his well-trained[57] regulars against General Phineas Riall's redcoats near the Chippewa River. Riall initially mistook Scott's gray-clad[58] force for militia, but their disci-

pline under fire, and fire discipline, soon proved his error, and according to legend the British commander exclaimed, "Those are regulars, by God!"[59] A subsequent bayonet charge forced a British retreat to Fort George and gave the Americans a well-earned victory.

On the night of July 24–25, Brown's troops bivouacked on the Chippewa battlefield. Early on the 25th, Riall sent a large detachment to establish a defensive line between Fort George and the Americans, and, later in the day, Lieutenant General Sir Gordon Drummond reinforced Riall. Brown discovered the well-prepared enemy atop a slope rising from a small farm lane near Niagara Falls late in the afternoon and immediately attacked. The contest at Lundy's Lane[60] was a constant, intense, hard-hitting, 5-hour struggle, going on until well after dark, in which soldiers on both sides demonstrated uncommon courage, valor, and determination. Technically a British victory because American forces withdrew too hastily from the field,[61] the battle has also been considered a draw because both armies suffered nearly the same high casualties and each lost its senior leadership to wounds.[62] However, the British followed up the engagement by pushing the Americans out of Canada once again.

In August a combined but poorly coordinated British land and lake attack at Plattsburg, New York, allowed Major General Alexander Macomb and Navy Lieutenant Thomas Macdonough to enter the pantheon of American heroes by winning the Battle of Plattsburgh in a decisive fashion on land and sea. However, to the south British land and naval forces harassed the poorly defended Chesapeake Bay area. Landing at Benedict, Maryland, on the Patuxent River on 19 and 20 August, British forces under General Robert Ross marched through Upper Marlboro and on to Bladensburg, where a sharp skirmish sent the American militia running in the early afternoon of 24 August. A few hours later the British entered Washington and set it aflame. Ross attempted a similar performance in Baltimore the following month, but was killed by an American sharpshooter before he saw the city's strong defensive works. Although Vice Admiral Alexander Cochrane declined to give Ross's replacement, Colonel Arthur Brooke, the required naval support to test Baltimore's ramparts, he seriously tested those of Fort McHenry on 13 and 14 September, but to no advantage.

Two and a half months later, on Christmas Eve, the Treaty of Ghent was signed. The War of 1812, technically, was over. Regrettably, Britain had already embarked on another line of attack through the Gulf of Mexico to take New Orleans and control the Mississippi River. After weeks of preparation and a few preliminary sorties, Major General Sir

Edward Pakenham prepared a two-pronged attack across the Chalmette Plantation into Major General Andrew Jackson's fortified lines behind the Rodriguez Canal, under the cover of darkness and fog early on 8 January 1815. The plan quickly fell behind schedule, then the fog lifted, and the assault turned into an ironic and poignant military disaster: a veteran British army severely beaten and its commander dead 3 weeks after a peace treaty was signed.[63]

From the medical perspective the campaigns of 1814 appeared less chaotic than the year before, mostly because major offensive operations were conducted in proximity to established hospitals[64] and during the more temperate part of the year. On the Niagara frontier, Dr. Lovell commented that the new recruits were

> composed of the miserable refuse of society, who never had energy enough to demonstrate that they lived, and scarcely enough to prove they existed. With these last detachments, arrived our old acquaintances, which however were easily checked; and much seldomer returned, than in any former campaign. This was undoubtedly to be attributed to the improvement in police.[65]

Dr. Mann, now at the Malone, New York, hospital just south of French Mills, complained to General Brown that his facility was too small; that he had too few hospital surgeons and not enough blankets; and that regimental surgeons failed to deliver regular reports, sent their sick without bed sacks or blankets, and never served on the hospital wards.[66] Mann informed at least one regimental commander that he could not order patients to rejoin the regiment without the consent of a hospital surgeon,[67] and fussed at General Smith more than once about patient movement to ensure personnel accountability.[68]

Mann also made Tilton aware of his difficulties. In February 1814, he sent Tilton his ideas about reorganizing the medical department[69] and addressed the issue again in November:

> . . . should the war be continued . . . it seems highly important, the medical staff of the army be placed on a more respectable basis. . . . To judge of the conduct of some officers of the line, towards the medical staff, particularly that branch attached to hospitals, it appears they are considered in no higher light than warrant officers. It is well understood, the medical staff have no command out of the hospitals. . . . There is nothing in the rules and regulations of the army, to deter commissioned officers . . . from intruding within

hospital bounds, and assuming authority to order their men in and out of it *ad libitum*. Intrusions of this nature too frequently occur, to pass without notice; but when they have been reported to the commanding general, redress had been obtained by a special order in the case. This does not place the hospital department beyond the reach of vexatious interferences.

In all services, except our own, the medical staff of the army is respected, because it is protected by government. Even where it is clothed with any powers, it is not placed in an attitude to exercise them. The senior surgeon of the army is, *ex officio*, constituted the director of hospitals, and is made superintendant of their building. At the close of this campaign, orders were issued to erect hospitals for the sick, in which the director was not known; and although the rules and regulations of the army designate, the sick of the army be the *first* accommodated, yet the present season, they are the *last*. . . . The sick consequently are in tents, and will remain in them until the cold becomes severe. . . . If men die, the skill and assiduity of the surgeons are called in question, without considering the real fatal causes; while it is frequently the case, the most judicious are censured, and accumulated disgrace unjustly attached to them.

In events of high importance, it is seldom the medical staff are noticed. . . . It may be alleged, the surgeons being non-combatants are out of danger. This however is not always the case. During the investment of Plattsburgh by the enemy, the surgeons were constantly passing from fort to fort, or block-houses, to dress the wounded, exposed to a cross fire of round and grape shot; while the greater part of the army were covered by fortifications. The cool bravery of the surgeons were, in private conversation, noticed by the Commander in Chief [Mann refers here to the commanding officer, Major General Alexander McComb, at Plattsburgh, not the president]; had half as much been reported to the War Department respecting them, they would have felt themselves amply compensated. . . . If reports, honorable to officers, are founded upon good conduct and cool bravery, who, more deserving than the non-combatants? They have fewer motives to excite them, and are equally exposed to danger as officers of the line, whose minds as well as bodies, are constantly exercised by their commands. If any officer has hardships attached to his office, it is the surgeon who executes his duty with fidelity and assiduity.[70]

Mann recognized the fundamental deficiencies of the medical department and stated them clearly and concisely to senior officers in his chain of command. He even wrote to Vice President Elbridge Gerry concerning the government's responsibility for the care of disabled veterans.[71] Medical department reform, however, was not an immediate concern in the politics of the post-war American army.

Chapter 1 Notes

1. Collected references used in this section include: Bradford Perkins, *Prologue to War: England and the United States, 1805-1812* (Berkeley: University of California, 1961); Reginald Horsman, *The Causes of the War of 1812* (Philadelphia: University of Pennsylvania, 1962); H.C. Allen, *Great Britain and the United States: A History of Anglo-American Relations, 1783-1952* (New York: St. Martin's, 1955); Steven Watts, *The Republic Reborn: War and the Making of Liberal America, 1790-1820* (Baltimore: Johns Hopkins Press, 1987); John K. Mahon, *The War of 1812* (Gainesville: University of Florida, 1972); Donald R. Hickey, *The War of 1812: A Forgotten Conflict* (Chicago: University of Illinois, 1989); J. Mackay Hitsman, *The Incredible War of 1812, A Military History* (Toronto: Robin Bass, 1999); Robert S. Quimby, *The US Army in the War of 1812, an Operational and Command Study* (East Lansing: Michigan State University, 1997); Jon Latimer, *1812, War With America* (Cambridge: Belnap Press, 2007); Alan Taylor, *The Civil War of 1812: American Citizens, British Subjects, Irish Rebels, and Indian Allies* (New York: Alfred Knopf, 2010); Richard V. Barbuto, *Niagara 1814: America Invades Canada* (Lawrence: University of Kansas, 2000); Gordon E. Wood, *Empire of Liberty*: *A History of the Early Republic* (New York: Oxford University, 2009); Daniel Walker Howe, *What God Hath Wrought* (New York: Oxford University, 2007); George Dangerfield, *The Awakening of American Nationalism, 1815-1828* (New York: Harper & Row, 1965); Paul E. Johnson, *The Early American Republic, 1789-1829* (New York: Oxford University, 2007); David S. Heidler and Jeanne T. Heidler, *Daily Life in the Early American Republic, 1790-1820* (Westport, CT: Greenwood Press, 2004); C. Edward Skeen, *1816: America Rising* (Lexington: University of Kentucky, 2003); Edgar Bruce Wesley, *Guarding the Frontier: A Study of Frontier Defense From 1815 to 1825* (Rochester: University of Minnesota, 1935); Francis Paul Prucha, *The Sword of the Republic: The United States Army in the Frontier, 1789-1846* (Lincoln: University of Nebraska, 1986); Mary C. Gillett, *The Army Medical Department, 1775-1818* (Washington, DC: Center for Military History, 1981); Harvey Brown, *The Medical Department of the United States Army from 1775 to 1873* (Washington, DC: Surgeon General's Office, 1873); Russell Weigley, *A History of the United States Army* (Bloomington: University of Indiana, 1984); Dumas Malone, *Jefferson the President, Second Term, 1805-1809*, vol. 5 in *Jefferson and His Time* (Boston: Little, Brown, 1974); Ralph Ketcham, *James Madison* (Newtown, CT: American Political Biography Press, 1971); Harry Ammon, *James Monroe: The Quest for National Identity* (Charlottesville, VA: University of Virginia Press, 1990); John D. Morris, *Sword of the Border: Major General Jacob Jennings Brown, 1775-1828* (Kent, OH: Kent State University, 2000); John Niven, *John C. Calhoun and the Price of Union* (Baton Rouge: Louisiana State University Press, 1988); David S. Heidler and Jeanne T. Heidler, *Henry Clay, the Essential American*

(New York: Random House, 2010); James Ripley Jacobs, *Tarnished Warrior, Major-General James Wilkinson* (New York: Macmillan Co, 1938).

2. Wood, *Empire of Liberty*, 659.
3. Howe, *What God hath Wrought*, 71.
4. Hickey, *Forgotten Conflict*, 1-3.
5. Latimer, *1812*, 1.
6. "Coupland's War of 1812 Monument Tweaks US Noses," *National Post*, 3 November 2008.
7. Horsman, *Causes of the War of 1812*, 22-23; Harlow G. Unger, *The French War Against America: How a Trusted Ally Betrayed Washington and the Founding Fathers* (New York: Wiley, 2005), 183-86.
8. Under the Franco-American Treaty of 1778 France had sent military, naval, and financial aid in support of America's war with Britain.
9. Unger, *The French War Against America*.
10. This treaty, also known as the Convention of 1800, was negotiated by William Vans Murray, Oliver Ellsworth, and William Richardson Davie, and ended the Franco-American Treaty of 1778. Unger, *The French War Against America,* 222, 224-225.
11. Orders in Council were those approved by the king personally in a meeting of his Privy Council.
12. A court of inquiry found Barron guilty of being unprepared for the probability of an engagement and suspended him from command without pay for 5 years. Dudley, *The Naval War of 1812,* 26-28. For the full story of the Chesapeake Affair see Robert W. Love, Jr., *History of the US Navy, vol. 1, 1775-1941* (Harrisburg: Stackpole Books, 1992), 94-97.
13. Dudley, *The Naval War of 1812,* 27, 29-31.
14. After Napoleon lost his fleet at Trafalgar in October 1805, he had no way to strike directly at Britain. Therefore, he attempted to destroy the British economy by eliminating its overseas trade. This effort he called the Continental System, which began with the two Berlin decrees in December 1806, and later included the Milan and Bayonne Decrees. As the name implies, continental European countries, many of which he had conquered and/or coerced, were active participants in this blockade. Gregory Fremont-Barnes and Todd Fisher, *The Napoleonic Wars: The Rise and Fall of an Empire* (Oxford: Osprey Publishing, 2004), 195, 257; Philip J. Haythornthwaite, James R. Arnold, Ian Castle, et al, *Napoleon: the Final Verdict* (London: Arms and Armour, 1996), 64.
15. The Embargo Act passed in the House of Representatives, 22 to 6, and in the Senate, 82 to 44. Horsman, *Causes of the War of 1812*, 110.
16. Senators William B. Giles (Virginia), Samuel Smith (Maryland), and Michael Leib (Pennsylvania) organized a powerful group known as the "Invisibles," who along with Federalists and discontented Republicans formed Madison's opposition.
17. North Carolina Representative Nathaniel Macon introduced, but did not support, the bills that carried his name. Perkins, *Prologue to War*, 239-242; Horsman, *Causes of the War of 1812*, 185.
18. Heidler and Heidler, *Henry Clay,* quote 77.
19. Both the Berlin and Milan Decrees were in full force, and the Rambouillet Decree, declaring all US vessels in French ports since May 1809 were to be seized, had been issued in March.

20. Large square-rigged warships with at least two gun decks and meant to engage in combat in line with other such ships.
21. Ketcham, *James Madison*, quote 528.
22. The Northwest Ordinance of 1785 established the Northwest Territory consisting of what are today the states of Ohio (1803), Indiana (1816), Illinois (1818), Michigan (1837), Wisconsin (1848), and parts of Minnesota (1858).
23. Jeremy Black contends the invasion of Canada was the primary US goal. Jeremy Black, *The War of 1812 in the Age of Napoleon* (Norman: University of Oklahoma, 2009).
24. William A. Gordon, *A Compilation of Registers for the Army of the United States from 1815 to 1837* (Washington, DC: James C. Dunn, 1837), quote 55. Samuel Johnson's *Dictionary of the English Language* (1768) defined "constituent" as elemental, essential, or that of which something consists. In modern military parlance it would be called "organic to." Eighteenth century officers and students of the art of war, such as Welshman Henry Lloyd, defined army constitution as the "number of troops of which an army (adequate to every purpose of war in the field) ought to be composed and, secondly, the proportion between the different species of troops, as heavy infantry, light infantry, heavy cavalry, and light cavalry, to which we shall add the artillery." Henry Lloyd, *Continuation of the History of the Late War in Germany between the King of Prussia and the Empress of Germany and her Allies* (London: S. Hooper, 1781), 51. Reprint, Gale Ecco Print Editions, 2012.
25. Britain's Army Medical Board was dismantled and an army medical department created with a director general. This organization was a civil, not a military, department until 1856. Neil Cantlie, *A History of the Army Medical Department*, vol. 1 (London: Churchill Livingstone, 1974), 3. In France, under the Revolutionary and Napoleonic regimes, the Service de Santé Militaire remained under the control of the intendants of the administration, and in the early days of the Restoration was almost completely dissolved. Charles Lavauzelle, *Histoire de la Médicine aux Armées*, vol. 2 (Paris: n.p., 1982), 50-52, 80-83. After 1809 in the Prussian Army, the general commissariat of war, Friedrich von Ribbentrop, in conjunction with advice from Surgeon General Goercke, directed all matters of the military medical service. Bock and Hasenknopf, "Kriegschirurgen und Feldärzte der ersten Hälfte des 19. Jahrhunderts [War Surgeons and Field Doctors of the first half of the 19th Century] (1795-1848)," *Veröfentlichungen aus dem Gebiete des Militär-Sanitätswesens [Military Medical Publications]*, Issue 18 (Berlin: Verlag von August Hirshwald, 1901), 165.
26. Gillett, *AMEDD 1775-1818*, 148-149.
27. Hull's army consisted of about 2,000 men. Hickey, *Forgotten Conflict*, 81.
28. American forces equaled 6,000 to 6,300 and the British mustered 2,200, nearly a three-to-one advantage over the British. Mahon, *War of 1812*, 75-76; Hickey, *Forgotten Conflict*, 86.
29. The Greenbush Camp was directly across the Hudson River from Albany. James Mann, *Medical Sketches of the Campaigns of 1812, 13, 14* (Dedham, MA: H. Mann and Co., 1816), quote 12-3. For more details on the illnesses and conditions experienced in the field see Gillett, *AMEDD 1775-1818*, Chapter 8.
30. Mann, *Medical Sketches*, quote 44.
31. William Henry Wilson of New York is the only Wilson on the Army Register for this era. Brown, *Medical Department*, 270.

32. Mann, *Medical Sketches*, quote 43.
33. Ibid.
34. The 9th Infantry was reorganized under the Act of 11 January 1812. Colonel Simon Learned commanded the regiment that was recruited in Massachusetts. Fred R. Brown, *History of the Ninth US Infantry, 1799-1909* (Chicago: R.R. Donnelley & Sons, 1909), 1-2. Lovell joined the unit 26 May 1812. Muster Rolls War of 1812, 9th Inf. Regt. Field & Staff Officers, 1799-1814, 1 September–31 October 1812, map case 34, box 309, drawer 4, Record Group (RG) 94, National Archives and Records Administration (NARA).
35. Muster Rolls War of 1812, 9th Inf. Regt. Field & Staff Officers, 1799-1814, 1 November-31 December 1812, map case 34, box 309, drawer 4, RG 94, NARA; Gillett, *AMEDD 1775-1818*, 167.
36. Mahon, *War of 1812*, 142-143, 145-46; Hickey, *Forgotten Conflict*, 129, 140; Hitsman, *Incredible War*, 138-141, 144-146.
37. Hitsman, *Incredible War*, 144-145.
38. Harrison would have had more troops, but Ohio volunteers lacked supplies. Hickey, *Forgotten Conflict*, 137.
39. Proctor's force consisted of 800 plus regulars and 500 Native Americans. Hickey, *Forgotten Conflict*, 137; Mahon, *War of 1812*, 182.
40. Wilkinson was ill from 20 August to 20 October with the ague (malaria), according to Hospital Surgeon, Ezekiel Bull. Both Bull and James Tilton treated the general, but according to Bull none of the usual remedies worked. General James Wilkinson, *Memoirs of My Own Times*, vol. 3 (Philadelphia: Abraham Small, 1816), 207, 208, 209, 210; Jacobs, *Tarnished Warrior*, 289, 313; Quimby, *US Army in the War of 1812*, 348. See also Andro Linklater's *An Artist in Treason: the Extraordinary Double Life of General James Wilkinson* (New York: Walker and Co., 2009).
41. James Tilton (1745-1822) of Delaware received his MD from the University of Pennsylvania in 1771. He is remembered for creating the Tilton Hospital, a small hospital of three sections in which soldiers with like diseases were isolated, during the Revolutionary War. Francis T. Tilton, "Biography of James Tilton," vol. 1, p. 82, unpublished, 1942, Delaware Public Archives, Dover. See also James Pilcher, "James Tilton," *Army Medical Bulletin*, 51 (January 1940): 22-6; Editor, "James Tilton (1745-1822) Physician of the Revolutionary War," *Journal of the American Medical Association* 197 (4 July 1966): 52-53; Alfred R. Shands, "James Tilton, MD Delaware's Greatest Physician (1745-1822)," *Delaware Medical Journal* 46 (1974): 24-35; and Allen C. Wooden, "James Tilton, Outstanding Military Medical Administrator," *Delaware Medical Journal* 47 (August 1975): 429-441.
42. Tilton's annual salary was $3,500. Tilton, "Biography of James Tilton," vol. 7, pp. 23, 32-34.
43. "He appears not a little pleased with his appointment, with the attention of the government in his old age . . . I should conceive that such a thing will tend to prolong his life." John Bellach to Nehemiah Tilton, 14 July 1813. Tilton, "Biography of James Tilton," vol. 7, p. 37. Tilton received his letter of appointment in May and was confirmed by Congress on 11 June, Tilton to Popham, 22 July 1816, James Tilton Papers, Delaware Historical Society, Wilmington.
44. "He goes off to the business before him, exactly as he smokes cigars—with all his might. His zeal and perseverance do not at all abate by age. Indeed, he looks so well

and so much younger that I told him by way of a joke, that I began to think it was the natural aliment of a Democrat. He went off in a good style for him—with a good horse in a clever sulkey [sic] . . . His homespun summer suit such as he has worn for some years he had on here and said he should wear at camp, except on ceremonious occasions." John Bellach to Nehemiah Tilton, 14 July 1813. Tilton, "Biography of James Tilton," vol. 7, p. 37.

45. Tilton to Popham 22 July 1816, James Tilton Papers, Delaware Historical Society.
46. Ibid.
47. Ross's table of diseases by regiment contains some questionable addition for the modern epidemiologist, but apparently Ross could make sense of it. Ross, "Remarks on Weekly Sick Report, 18 Sep 1813," in: Wilkinson, *Memoirs*, vol. 3, app. 9.
48. Ibid.
49. Donald E. Graves, *Field of Glory: the Battle of Crysler's Farm, 1813* (Toronto: Robin Brass, 1999), 46; Wilkinson, *Memoirs*, vol. 3, quote from Hite Testimony, 281.
50. Wilkinson, *Memoirs*, vol. 3, quote 106.
51. Ibid, 110, quote 111.
52. Ibid, 106-112.
53. Jacobs, *Tarnished Warrior*, 292; Graves, *Field of Glory*, 78.
54. Mann, *Med Sketches*, quote 70.
55. Ibid, quote 119.
56. Wilkinson, *Memoirs*, vol. 3, quote in app. 9, footnote; the italics are his.
57. Scott deplored the lack of an American text of regulations or, as he called them, "Military Institutes," for the instruction of soldiers. From the time he arrived at the Buffalo, New York, assembly camp in late March until the campaign began in June, Scott taught his personnel how to be officers and soldiers, in bivouac and combat, using an old French text. Winfield Scott, *Memoirs of Lieut-General Scott, LL.D.*, vol. 1, (New York: Sheldon & Co., 1864), 118-119, quote 120, 121.
58. Scott's troops did not receive the new regulation all blue wool uniforms as they prepared for the 1814 Niagara Campaign due to supply and transportation difficulties. Commissary General Callender Irvine quickly had 1,500 gray wool roundabout jackets produced and sent to Scott. James L. Kochan and David Rickman, *The United States Army, 1812-1815* (Oxford: Osprey Publishing, Ltd., 2000), 16.
59. True or not, Riall's quote is part of US Army legend. This version is the most commonly found. Hickey, *Forgotten Conflict*, 187; Mahon, *War of 1812*, 269. It was also recorded as "Damn, these are regulars!" Barbuto, *Niagara 1814*, 175.
60. Also known as the Battle of Niagara Falls or Battle of Bridgewater. For a complete rendition of the battle see Donald E. Graves, *Where Right and Glory Lead!: the Battle of Lundy's Lane, 1814* (Toronto: Robin Brass, 1997). Originally published as *The Battle of Lundy's Lane: On the Niagara in 1814* (Baltimore: Nautical and Aviation Publishing Company of America, 1993).
61. Ripley left the field against orders, which Brown considered reprehensible, and this produced a bitter contention between them until Brown's death.
62. Casualties (killed, wounded, missing) were estimated at 878 British and Canadian and 860 US Both commanders, Lieutenant General Sir Gordon Drummond and Major General Jacob Brown, were wounded. Drummond's wound was relatively minor, and he never gave up command; Brown's wound took him out of action for a few weeks. Graves, *Where Right and Glory Lead!*, 195-197.

63. See Robin Reilly, *The British at the Gates: The New Orleans Campaign in the War of 1812* (Toronto: Robin Brass, 2010).
64. Williamsville and Lewiston, New York, hospitals were near the Niagara Campaign, and Plattsburgh and Greenbush hospitals were used in the battles around Plattsburgh.
65. Mann, *Medical Sketches*, quote 160.
66. Ibid, 260-263.
67. Ibid, 265-266.
68. Ibid, 265, 266-267.
69. Ibid, 264.
70. Ibid, 269-271. No response from Tilton has been found by the author.
71. Mann to Vice President Elbridge Gerry, Mann, *Medical Sketches*, 272-274.

Chapter 2

America, 1815–1818

By the late winter and early spring of 1815, Americans had learned of the 8 January victory at New Orleans and the Christmas Eve 1814 signing of the Ghent Treaty ending the war. The fact that negotiators in Belgium, with no clear military victory by either side, had settled for the status quo ante bellum and that the US government was bankrupt were irrelevant. The republic had survived. Americans believed they had victoriously defended their country's honor and dignity against the neo-colonial condescension and arrogance of Great Britain by force of arms.[1] Proud, confident, and remarkably unified, the American public turned a deaf ear to Europe, an introspective eye to its government, and contemplated the potential of the trans-Mississippi West.

North-South sectionalism, which had threatened the unity of rebelling colonies and led to some sordid compromises (notably slavery) as a constitutional government was hammered out, and Western sectionalism, which blossomed as pioneers pushed beyond the Allegheny Mountains, momentarily declined. Political party loyalty, so disparaged by George Washington[2] yet so thoroughly embraced by American politicians who followed, temporarily faded. Members of the dying Federalist party, whose loyalty had been seriously questioned during the war, and Jeffersonian Republicans, in transition to Democratic-Republicans, debated issues of prime importance to the nation's welfare intensely, but for the moment less vociferously.

The politicians who led the country into war, and the majority of military officers who fought it, were a relatively young, enthusiastic, and aggressive group, and their success in bringing the war to an honorable conclusion may be attributed to these qualities. They represented a new generation of Americans who had never been British. William

H. Crawford, Thomas Worthington, and George W. Campbell in the Senate and Clay, Calhoun, Johnson, and Porter in the House had never held colonial office nor had they governed a confederation of colonies-cum-states. They were senators and representatives of the United States, a sovereign nation with the same rights as other sovereign nations. Generals Brown, Gaines, Macomb, Jackson, Scott, Ripley, and MacArthur, and their junior officers and enlisted personnel, had never been colonial militia or soldiers in the Continental Army. Very few had served in President Washington's small Legion of the United States commanded by General Anthony Wayne. They commanded a battle-tested, standing United States Army.

Raised on tales of the revolutionary fervor of their fathers, this new generation of Americans assumed leadership of national affairs during the war, not through a rapid purge, but slowly, by force of necessity as older bodies, attitudes, and customs failed to rise to the occasion. By 1815, the nation had expanded well beyond its colonial boundaries, both physically and psychologically. The 13th Congress focused on its further development, economic stability, merchant marine and navy, and the defense of a large and at times rather ambiguous frontier.[3] The idea of a standing army, however, remained anathema to some of the senior civilian leadership, such as Federalist Cyrus King, who lamented "oppressive taxes" to support an "overgrown, expensive" army and never thought he would hear the "eulogies on this floor in favor of standing armies."[4] However, such fears were declining. Newly appointed Secretary of War Alexander J. Dallas[5] and several youthful civilian and military leaders recognized the need for a standing army to keep Britain and the Native Americans in check along the northern and northwestern frontiers and for coastal defense.

Not surprisingly, a peacetime army medical department, as a necessary supporting organization, unified in action under one director, never appears to have occurred to the men in Madison's administration, the senior Army leadership, or Tilton. In mid-December 1814, Tilton had regulations for the medical department approved and published by the War Department. These defined the individual duties of hospital and regimental surgeons and surgeon's mates, apothecary general and assistants, and hospital stewards and wardmasters.[6] However, they contained no language indicating that the physician and surgeon general had the responsibility to direct the actions of his department as a unified whole. The same month the regulations were approved, Apothecary General Francis LeBaron wrote to Brigadier General Daniel Parker, newly appointed adjutant and inspector general, that if a medical board were

established that winter he wanted to be a member, because a board was "highly necessary, in order to produce System in the two departments [medical and apothecary]; I feel the effect of my not being there last winter; my Dept. was not attended to in the least."[7]

Neither did the new medical regulations suggest that the physician and surgeon general had an authority that every member of the department must obey. In January 1815, Tilton wrote to Secretary of War James Monroe:

> In my report of the 20th December last, I suggested the necessity of sending two or more mates to the assistance of Doct Hays at Detroit. By the two enclosed letters lately received from the doctor, you will perceive that the occasion is more pressing than was apprehended. It appears that all the regimental surgeons in the district have resigned but one; and that Doctor Hays himself threatens to take 'the rank of citizen.' Doct. Boulden having lost his health in the sickly region of Sandusky, I suppose, has fled for his life. I do not know what motives operate with the other gentlemen.[8]

A month later, Tilton commented in his semi-annual report to the secretary of war that it was a

> mortifying circumstance, that in presenting you with this . . . return, I am obliged to apologize as usual, for defective details. The negligent habits, which gained footing in the medical department of our army, before any thing like system was attempted to be established, can hardly be reformed without further legislative and executive aids.[9]

An intelligent physician, zealous patriot, and well-meaning physician and surgeon general, Tilton, like those he worked with in Washington, was a man of an earlier era. They could conceive neither of a more authoritatively administered medical department nor one more integrated into the Army.

Officers and Physicians in a New Standing Army

On 3 March 1815 Congress passed "An Act fixing the military peace establishment of the United States." The Army would consist of 10,000 men, composed of infantry and artillery regiments, each with a surgeon and two surgeon's mates, and a corps of engineers. Only two major generals (Jacob J. Brown and Andrew Jackson) and four brigadier generals (Winfield Scott, Alexander Macomb, Eleazar W. Ripley, and

Edmund P. Gaines) were retained. The adjutant general, inspector general, and quartermaster general were reduced to brigade functions. The departments of ordnance, purchasing, and pay (regimental pay officers) were retained, as was one judge advocate for each division and one chaplain per brigade. The Hospital Department, however, was abolished and replaced with "such number of hospital surgeons and surgeon's mates, as the service may require, not exceeding five surgeons and fifteen mates, with one steward and one wardmaster to each hospital."[10]

The act does not appear to have pleased anyone. Many of those opposed, who would rather have trusted to the militia for the country's defense, regarded this authorization of an expensive and potentially oppressive institution as a disaster. Advocates claimed that a 10,000-man army was too small by half to be functional and its staff elements had been gutted. Moreover, such a large reduction mandated discharging a large number of officers and men, many of whom did not want to leave the Army. Selecting the officers who would remain in uniform required deliberate thought and delicate action, which would be difficult to achieve as quickly as Congress desired.[11]

On 14 March, Secretary of War Dallas informed Generals Brown, Scott, Gaines, Macomb, and Jackson of Congress's decision and directed them to convene a board in Washington on 8 April to provide guidance for implementing the act. However, Madison placed no limits on the board based on congressional wording about what offices should remain. He queried specifically about the necessity of the adjutant, inspector, and quartermaster general and whether more medical officers were required than had been allowed. Brown did not arrive until 25 April, Jackson did not attend at all because of duties in his military district, and Gaines was too ill to travel, so Ripley took his place. Scott directed the proceedings. With Tilton in Wilmington[12] and LeBaron[13] in Albany, it appears that little medical advice was offered to the board. On 28 April the board submitted its recommendations on army organization, officer retention, and military stations to Dallas, who presented them to Madison 2 weeks later.

On 17 May general orders were published that divided the Army into a Northern and a Southern Division, and directed the distribution of regiments into the numbered military departments that comprised the divisions. The board interpreted the personnel capitation to mean 10,000 enlisted men plus officers, which reduced officer discharges while simultaneously increasing the size of the force, and it side-stepped the reduction in staff through a clever bureaucratic maneuver. By "retaining provisionally" an adjutant and inspector general; two adjutant generals; a quartermaster general and two deputies; two deputy paymaster

generals and two assistant deputies; Apothecary General LeBaron and his two assistants, Christopher Backus and James Cutbush; two garrison surgeons; and ten garrison surgeon's mates, the board maintained staff structure and eased Madison's concerns in those areas. The five hospital surgeons and fifteen surgeon's mates noted in the March act would be distributed throughout the Northern and Southern Divisions.[14]

Madison's concern about the number of medical officers, their quality, and which of those serving should be retained in service was genuine, and he directed Tilton to provide a list of appropriate candidates. Tilton requested that all interested medical staff substantiate their claim to a position in the peacetime establishment in writing. At the end of April he presented 19 surgeons to the president, among them James Mann, Hosea Blood, Benjamin Waterhouse, and Tobias Watkins.[15] Tilton noted, however, that there could be "no doubt but some of the hospital gentlemen have employed other channels for conveying their claims & wishes to the war department. It is presumed the regimental surgeons have forwarded their names and advocated their claims by favour of their Colonels and commandants of corps."[16]

Indeed, this was an era when patronage pandering was considered appropriate, and the successful candidates were those who pandered more artfully than their rivals with politically connected friends. Francis LeBaron, apparently the master of the self-serving, sycophantic missals, maintained his position as apothecary general through political favors from Washington.[17] Tobias Watkins secured the hospital surgeon position in District 5 (Maryland/Virginia) via his longtime connections with Senator Samuel Smith and others in Baltimore.[18] Watkins was provisionally retained by President Madison, and Arnold Elzy was demoted to garrison surgeon.[19] James Mann, Benjamin Waterhouse, and Joseph Lovell competed for Boston's two hospital surgeon billets. Mann, a Revolutionary War veteran whose sound judgment, efficient performance, and astute observations during the war should have put him at the head of the list of candidates, struggled to maintain a position as surgeon's mate in the new establishment.[20] Waterhouse's connections with ex-Secretary of War Armstrong and Vice President Elbridge Gerry removed Mann from the field.[21] However, in a self-serving letter sent to Tilton in June 1815, Waterhouse demonstrated not only a concern about Lovell, but also his vexation over a new philosophy among commanders [reference numbers inserted]:

> There are two Hospital Surgeons belonging to Boston, viz Joseph Lovell, a smart, athletic man of seven and twenty, and myself,

over sixty years of age, with a constitution rendered delicate, & susceptible to every change; the one a single man, the other with a large family, with the most important member of it, slowly sinking to the grave. One would think there would be no question which of these two should maintain his residence, or which should go from the place of his nativity to any other place, he not having any family, and yet the older will be made to give way to the younger, unless the Department of war shall order it otherwise . . . . It seems that the Generals commanding districts . . . have established *among themselves* the principle, that all those surgeons who have served on the lines should have the choice of locations, in preference to those who have not been on the lines.

I yesterday waited on General Ripley. . . . He took occasion . . . to mention to me the principle just mentioned. He thought of my years & peculiar situation, and said that it belonged to the frankness of his character to say to me explicitly that if Dr. Lovell should ask him for the location I now fill, he must give it to him, because *he had served on the lines*; & I had not.

Now the fact is, Dr. L is an able & ambitious young man, and is intent on settling down in Boston in the practice of physic & surgery; Dr. Warren's death[22] having made a very good opening for him. Genl Dearborn told me that he endeavored to convince Lovell that he could not engage in practice & be retained in public service, that the letter as well as the spirit of our regulations forbid it,[23] to which he replied that General A & B, if not C, had promised to support him in his views.[24] In the midst of this, Genl Brown orders Dr. L to Sackett's harbour. On which he called upon me . . . declared his determination not to do the duty; which he said belonged to me, the senior surgeon. . . . Now if this young gentleman can effectuate my resignation, or my removal from Boston, which is the same thing, then the ground will be cleared for his entering on the carrear [career] of private practice made favourable by the death of Dr. Warren.[25]

Although Tilton retired from the service on 15 June, he forwarded Waterhouse's letter to Secretary of State Monroe 4 days later, commenting that he would

discern a scene of cabal & intrigue in the medical department both novel & surprising. The conduct of young Lovell appears to me to be very indecorous. From all the circumstances attending the appointment of Doctor Waterhouse I have reason to think it was the

> intention of the executive that he should not be removed from the station of Boston. He is a venerable patriot that has made all sorts of sacrifices in the cause of his country. Policy as well as practice & gratitude require that he should be sustained by the same. I hope, therefore, there will be no difficulty in his obtaining an order, from the war department, to maintain the station he now occupies.[26]

Waterhouse, after a series of letters over several weeks, finally won out in September, and Lovell reported to General Brown.[27]

In the late spring of 1815, Lovell seemed to be, if Waterhouse can be believed, just as determined as other hospital surgeons and surgeon's mates to secure one of the few plum military assignments in an urban area where a lucrative private practice might also be obtained, regardless of Army regulations. It also appears that Lovell either lost his battle with Waterhouse for a position at Boston or, more likely, he was convinced by General Brown to join his staff in the Northern Division. Waterhouse's letter supports the first contention, but as will be seen, Lovell's actions over the following 2 years describe a man dedicated to the Army and military medicine.

Brown, who was very much a hands-on, go-see-for-yourself type of commander, toured his division in the late summer and early fall of 1815. He found his officers and men often poorly quartered, supplied, and paid,[28] and at Buffalo found more than 200 invalids without funds to satisfy their claims.[29] From Detroit he wrote Dallas:

> I should be pleased to be advised by War Department of the number and names of the Hosp. Surgeon, and mates and Garrison surgeons & mates assigned to the division of the North. But few of the faculty have reported to me, and the service will I fear suffer unless these Gentlemen are made to do their duty to the Army. A Surgeon and two mates and two or three Garrison surgeons mates should be ordered promptly to repair to this place and report to the commanding officer of the Department. I do not know the Surgeon or mates assigned to my command and therefore desire that the department of War will make the necessary orders.[30]

Dallas passed the letter on to Adjutant General Daniel Parker, who informed Brown that he had heard nothing from the Northern Division staff concerning the allocation of artillery or medical staff, but that Brown essentially had more than his fair share of both. Only one hospital surgeon in five was in the Southern Division![31]

Respectability for Army Medicine

Lovell appears to have reported to Northern Division Headquarters, Brownville, New York, in the early fall, perhaps before Brown returned.[32] While his immediate position and activities with the command are unclear, he joined it at a critical time in the Northern Division's organization. It was probably in the spring or early summer of 1816 that he and James C. Bronaugh were designated chief surgeons for the Northern and Southern Divisions, respectively.[33]

The new secretary of war, William H. Crawford, convinced Congress, in the spring of 1816, to retain the apothecary general and his assistants permanently; provide four hospital surgeons and four hospital surgeon's mates in each division, with as many garrison surgeon's and garrison surgeon's mates as required (up to 12 per division); and redesignate garrison surgeon's and mates as post surgeons. Although increasing the numbers of medical officers was well meant and beneficial, this type of piecemeal legislation did not establish a well-organized and efficiently run medical department. The department as a whole had no chief executive, and the authority of the chief surgeons over medical subordinates separated by such large distances was open to question. Furthermore, ambiguity of the medical officer's position in the army, his pay, and the quality of his education remained significant obstacles to overcome.[34]

Dedication to their work, at least in the Northern Division, was also a serious problem. Army Adjutant General Parker commented to Colonel C.H. Gardner, the Northern Division adjutant general, that "many of these [medical] officers still appear disposed to avoide their duty."[35] Northern Division Inspector General John E. Wool stated the issue concisely in his annual report to Brown:

> The situation of these officers, it would seem, ought to require services corresponding with their elevated stations. If the health of the troops in general has not been such as to require their attention, yet they could have done something to realize the expectations and perhaps the objects of the government. By inspecting and regulating the police of hospitals, and by superintending the distribution, application, and disposal of medical stores at the different posts in the division, they might not only have rendered essential services to the army, but perhaps important ones to the government. These services, however, would require a greater degree of attention, activity and industry, than a majority of those gentlemen have yet exhibited. In these remarks I would not be understood to include Doctor Mann.

> I am inclined to believe that he has always exhibited a zeal, activity, and industry proportionate to the duties he has had to perform.[36]

It is likely that Brown directed Lovell to prepare an annual consolidated sick report and made him the inspecting hospital surgeon for the division after receiving this report.[37] In doing so, Brown concentrated all divisional medical responsibility and authority, with the exception of hospital stores and medicines (which remained under the apothecary general), in one trusted agent.

As the medical department was structured at the time this made sense. However, with both divisions headquartered far from Washington, Brown's organizational and administrative techniques in the north, and those of Andrew Jackson in the south, had resulted since 1815 in the creation of two separate, autonomous, and, in terms of supplies and personnel, competing armies. Absolutely no unity existed between the divisions, the division staffs, the Army staff in Washington,[38] and the continually rotating position of secretary of war. However, the new president, James Monroe, inaugurated in March 1817, began looking for a permanent War Department chief.

In October John C. Calhoun accepted the challenge and officially joined Monroe's cabinet on 8 December 1817.[39] Brown was pleased with Monroe's choice, and his relationship with Calhoun immediately became professionally intimate.[40] Writing to Brown, the new secretary expressed his intentions in taking the job:

> We have indeed much to do [to fix the army]. Not to mention the discipline and oeconomy of the Army, so difficult in its dispersed situation to be improved, the fortifications, the military supplies and education and the disbursements of Public money are objects of vital importance. I, on my part, feel the want of experience but I expect from you and the other officers a zealous and an enlightened cooperation.[41]

Calhoun would not be disappointed in Brown, whose advice on a wide variety of army topics he not only listened to, but also acted upon frequently.

Calhoun's assumption of office came at a critical juncture for the Army's medical services, which was recognized by military physicians. In October Mann had written to Brown concerning an improved system of health police for the Army. Mann's concepts were logical and well meant,

but they described essentially a tactical organization for medical services only, which would serve as a manual for officers.[42]

On 15 November, Lovell had provided Brown the sick report for the Northern Division for 1817, in which he noted not only the deficiencies of the medical department and his frustrations with it since 1812, but also his confidence that with the appropriate corrective actions, contained therein, the department would be prepared for any future contingency.[43]

Two weeks later Wool sent a confidential report on the troops of the Northern Division to Parker and commented on the Hospital Department[44]:

> The officer whose duty it is more particularly to inspect and report upon the state of this Department, does not appear to comprehend the importance of his station. Instead of critically examining the police of Hospitals, the distribution and disposal of medicines and Medical Stores, and the treatment of the sick, and investigating the character and conduct of those who administer to them, has I believe permitted the season to pass with scarcely more than a superficial view of any Hospital in the Division. Indeed, his tour appeared more like a tour of pleasure, than of business, and his visits rather injurious than beneficial. He is given to gaming and dissipation, and does not fail to introduce his pernicious examples wherever he goes.[45]

This is undoubtedly a reference to LeBaron, who made annual inspection tours of the Northern Division and who had been receiving a great deal of criticism over the past year.[46] Both reports went to the secretary of war.[47] In early January 1818, Brown sent Calhoun a

> letter & report relative to the Medical Department of the Army I have considered of sufficient importance to transmit to you. I do not presume to offer them as regulations, but I suppose you will be pleased to examine the opinions of medical gentlemen of acknowledged talent & respectability, on a subject of such vital importance to the Military Establishment of the country. [The report mentioned and names of the medical gentlemen were not with the letter in the Library of Congress.] With the present organization of the Medical Department of the Army I am not satisfied. We have not the connected chain—that complete and perfect responsibility and accountability necessary to ensure the faithful discharge of duty. I would not advise any system that should remove the Hospital Surgeons in service, but I would recommend a Medical Director &

> Inspector of Hospitals for each Division who should not only rigidly examine the conduct of the Gentlemen of the faculty, but keep an eye upon the Apothecary General, and the supplies issued by him and report quarterly to the Chief of Division. On this subject I hope to have the honor of expressing my sentiments more fully when I see you.[48]

By the time Brown visited Calhoun in February he also had Waterhouse's advice on how military medicine should operate and who should be in charge. Although wordy, Waterhouse presented some extremely cogent recommendations for the new medical department: there should be one department head, thereby eradicating the difficulty of the apothecary general being an adjunct rather than a subordinate to the medical director of the Army. The department head's title should be physician general rather than surgeon general, "for it is the prophylactic or preventive part of the science of medicine that is specially called for in camp and garrison."[49] As to the qualifications of this man, Waterhouse believed he should "be able to give instructions in every branch of Surgery as well as every disorder that has been written on since the days of Hippocrates."[50] He then expounded on the importance of prevention over medical or surgical cure in military medicine.[51]

What Brown and Calhoun discussed concerning the reorganization of military medical services has not survived; however, it is quite clear that Calhoun's vision for a medical department and the physicians in it was broad and suggested an organizational complexity that had never been appreciated or envisioned by commanders or Congress. He wanted to keep militarily experienced physicians on the rolls, he wanted applicants to have a medical college diploma,[52] and he wanted one central directing authority, a surgeon general on the Army staff.[53] It appears that Calhoun made his reorganization plans known in Washington by mid-February 1818 at the latest, because later that month Senator Samuel Smith of Maryland was leading a lobby, which included James Tilton, Sylvanus Thayer, Colonel George Armistead, William H. Winder, and Maryland Representative Peter Little, to have Tobias Watkins selected as surgeon general.[54] Mann threw his hat in the ring in early March,[55] and Waterhouse had already made his availability for Washington duty known to Brown.[56]

On 14 April 1818, Congress approved Calhoun's reorganization, authorizing six Army departments: quartermaster, commissary, ordnance, paymaster, a combined adjutant and inspector general, and medical, all located in Washington. Lovell was Calhoun's first choice for surgeon

general, and President Monroe concurred on that decision four days later.[57] Tobias Watkins and James C. Bronaugh were appointed as assistant surgeons general serving in the Northern and Southern Division, respectively.[58] On 21 April the War Department issued the following orders:

> All reports, returns, and communications connected with the Medical Department will hereafter be made to the Surgeon General's Office in Washington.
>
> All orders and instructions relative to the duties of the several officers of the medical Staff, will be issued through the Surgeon General, who will be obeyed and respected accordingly.
>
> The Assistant Surgeon Generals will forthwith commence the inspections of the Medical Department in their respective divisions; agreeably to the instructions they receive from the Surgeon General.[59]

A very pleased secretary of war wrote privately to Brown:

> The staff [reorganization] bill finally passed in the state [in] which you left it, with the exception of the Judge Advocate General. . . . A great effort was made to obtain for Dr. Watkins the post of Surgeon General. His friends in Congress, who are numerous and influential, were very anxious for his appointment. I am happy however to find that the appointment of Dr. Lovell is well received. On a slight acquaintance I am well pleased with the doctor, and I trust he will by his industry and talents fully realize the public expectation.[60]

Chapter 2 Notes

1. Albert Gallatin commented on this national pride: "The War has renewed and reinstated the national feelings which the Revolution had given and were daily lessened. The people have now more general objects of attachment with which their pride and political opinions are connected. They are more American; they feel and act more like a nation; and I hope that the permanency of the Union is thereby better secured." Russell Weigley, *A History of the United States Army* (Bloomington: University of Indiana, 1984), quote 133.
2. "However [political parties] may now and then answer popular ends, they are likely in the course of time and things, to become potent engines, by which cunning, ambitious, and unprincipled men will be enabled to subvert the power of the people and to usurp for themselves the reins of government, destroying afterwards the very engines which have lifted them to unjust dominion." George Washington, "Farewell Address," 19 September 1796. In: W.B. Allen, ed., *George Washington, a Collection* (Indianapolis: Liberty Classics, 1988), 518-519.
3. Richard Peters, ed., *Public Statutes at Large of the United States*, vol. 3 (Boston: Charles C. Little and James Brown, 1846), ix-xi.

4. C. Edward Skeen, *1816: America Rising* (Lexington: University of Kentucky, 2003), 146, quote 147.
5. Alexander J. Dallas served as secretary of war from 2 March to 1 August 1815. He was followed by Acting Secretary of War William Crawford until October 1816, when George Graham became acting secretary because no one would accept the job. Calhoun accepted the office in October and was sworn in on 6 December. John D. Morris, *Sword of the Border: Major General Jacob Jennings Brown, 1775-1828* (Kent, OH: Kent State University, 2000), 195; Weigley, *History of the US Army*, 133.
6. Harvey Brown, *The Medical Department of the United States Army from 1775 to 1873* (Washington, DC: Surgeon General's Office, 1873), 94.
7. LeBaron to Parker, 13 December 1814, roll 12, microfilm (M)-566, Record Group (RG) 94, National Archives and Records Administration (NARA).
8. Tilton to Monroe, 17 January 1815, roll 82, M-566, RG 94, NARA.
9. Tilton to Monroe, 10 February 1815, roll 66, M-221, RG 107, NARA.
10. Peters, *Public Statutes at Large*, vol. 3, 224, quote 225.
11. Congress wanted the reorganization and reduction done by "the first of May . . . or as soon as circumstances permit." William A. Gordon, *A Compilation of Registers for the Army of the United States from 1815 to 1837* (Washington, DC: James C. Dunn, 1837), quote 51; Edgar Bruce Wesley, *Guarding the Frontier: A Study of Frontier Defense From 1815 to 1825* (Rochester: University of Minnesota, 1935), 71-73.
12. Tilton's health after returning from Sacket's Harbor had not been good, and he essentially worked from home thereafter, a fact confirmed by the address on many of his letters.
13. LeBaron suggested to Adjutant General Parker that he and Tilton should be "ordered to Washington and be consulted in the general disbandment, and new organization of the Medial Staff," but apparently the suggestion was not acted on. LeBaron to Parker, 19 April 1815, roll 12, M-566, RG 94, NARA.
14. The hospital surgeons were Joseph Lovell, David Kerr, Benjamin Waterhouse, James Bronough, and Arnold Elzy; garrison surgeons were Foster Swift and James H. McCullough. Gordon, *Compilation of Registers*, 55-60.
15. Tilton to Monroe, 28 April 1815, roll 82, M-566, RG 94, NARA.
16. Ibid.
17. "Inclosed [sic] is a Letter which I have received from Dr. Eustis yesterday addressed to Mr. Monroe . . . I give it you to make what use of it which you think most proper to advance my interest. Would it not be best to send the letter direct to the President of the United States? The Doctor is of that opinion; I wish you to represent to the Government (what they do not know) that, I have had the sole control & audited all the Accounts of the Hospital Department from the 1st of Nov^{r} 1811 to the present period, I have made all the Yearly Estimates & have purchased, inspected, & distributed all & every article of Hosp^{l} Supplies for the United States Army from Main [sic] to Georgia; & have within this year become Paymaster to part of the Hosp^{l} Staff; All those who are acquainted with the duties of this office are convinced of its necessity & importance. The Surgeon & Physician Gen^{l} Dept. is of no import; But this of the highest, & the Army cannot do without this office, or one whose duties are similar. This I hope you will agree I depend on you." LeBaron to Parker, 28 March 1815, M-566, roll 12, RG 94, NARA.
18. Smith to Monroe, 21 February 1818, W. Edwin Hemphill, ed., *The Papers of John C. Calhoun*, vol. 2, 1817-1818 (Columbia: University of South Carolina, 1963), 154.

Tobias Watkins (1780-1855) was a native Marylander who received his MD from Philadelphia in 1802, began a practice in Baltimore in 1804, and was editor of the *Baltimore Medical and Physical Recorder*, 1808-1809. A good friend of Adjutant General Daniel Parker, Watkins began lobbying for what would become the position of surgeon general in the fall of 1816 with Senator Smith, Representative Peter Little, US Military Academy Superintendent Sylvanus Thayer, Colonel George Armistead, William H. Winder, and James Tilton. While serving as fourth auditor of the United States (1824-1829), Watkins went to prison for embezzling funds. Watkins to Parker, 29 November 1816, box 5, file 10, 14-30 November, Incoming Correspondence, June-December 1816, Collection 466, Daniel Parker Papers, Historical Society of Pennsylvania, Philadelphia; Hemphill, *Calhoun Papers* vol. 2, 154; Howard A. Kelly and Walter L. Burrage, *Dictionary of American Medical Biography* (New York: D. Appleton and Co., 1920), 1205.

19. Gordon, *Compilation of Registers*, 71.
20. Mann to Monroe, 15 February 1815 and Mann to Tilton 10 March 1815, roll 75, M-566, RG 94, NARA. Mann is listed as a hospital surgeon in January 1815, not listed at all in 1816, and is found again on the 1817 Register as a hospital surgeon at Detroit. However, according to the adjutant general, Mann was still a hospital surgeon in May 1816. Gordon, *Compilation of Registers*, 5, 61-62, 108; Adj Gen to Tobias Watkins, 11 May 1816, Letters Sent by Adj Gen, p. 30, vol. 4, roll 5, M-565, RG 94, NARA.
21. Waterhouse to Tilton, 12 June 1815, roll 66, M-221, RG 107, NARA.
22. Warren died of pneumonia on 4 April 1815. See Stephen C. Craig, "John Warren (1753–1815): American surgeon, patriot and Harvard Medical School founder," *Journal of Medical Biography* 18. (August 2010):138-147.
23. Regulations for the Medical Department, 1815, specifically stated no military surgeon was to engage in private practice. Brown, *Medical Department*, 97.
24. No letters have been found to confirm Lovell's actions.
25. Waterhouse to Tilton, 12 June 1815, roll 66, M-221, RG 107, NARA.
26. Tilton to Monroe, 19 June 1815, roll 66, M-221, RG 107, NARA.
27. Philip Cash, *Dr. Benjamin Waterhouse: A Life in Medicine and Public Service (1754-1846)* (Sagamore Beach, MA: Boston Medical Library & Science History Publications, 2006), 365. Adjutant General Daniel Parker wrote Brown on 13 September that "the War Dept. will not remove Dr. Waterhouse from Boston." Parker to Brown, 13 September 1815, reel 1, part 2, Jacob Jennings Brown Papers, Library of Congress (LOC).
28. Brown to Sec War Dallas, HQ Albany, 18 June 1815 and HQ Buffalo, 30 July 1815, reel 1, part 2, Jacob Jennings Brown Papers, LOC.
29. Brown to Sec War Dallas, HQ Buffalo, 30 July 1815, reel 1, part 2, Jacob Jennings Brown Papers, LOC.
30. Brown to Sec War Dallas, HQ Detroit, 19 August 1815, microfilm 16,889-1P, part 3 of 3, Jacob Jennings Brown Papers, LOC.
31. Parker to Brown, 13 September 1815, reel 1, part 2, Jacob Jennings Brown Papers, LOC.
32. Lovell is not on the Muster Roll, 9th Regiment, from 31 December to 15 June 1815; no surgeon is listed at all. He was attached to Northern Division HQ by a written order that has not survived. According to Gillett, Lovell was chief medical officer of the Northern Division, which comprised the 1st through 5th Military Districts, as

of 15 June, but the *Army Register* does not reflect this. Muster Rolls, 9th Inf. Regt. Field & Staff Officers, 1799-1814, drawer 4, box 309, map case 34, and Lovell to BG Parker, 30 October 1817, roll 98, M-566, RG 94, NARA; Mary C. Gillett, "Joseph Lovell," *American Journal of Biography* (1999):13-14; Weigley, *History US Army*, 138; Gordon, *A Compilation of Registers*, 61.

33. Division order, 22 May 1816, required commandants of departments and their staffs to collect and forward quarterly medical (sick and medicines/stores) reports to Division HQ, Brownville, NY. Lovell was on Brown's staff at Brownville at that time and would have been responsible for reviewing these reports. Roll 98, M-566, RG 94, NARA; Adj Gen to J.C. Bronaugh, Hosp. Surg, 2 May 1816: "You will repair to the head quarters of Major General Jackson and report yourself for duty in the Medical Department of the staff of the Southern Division." P. 25, vol. 4, roll 5, M-565, RG 94, NARA. In August 1816, the *Army Register* first confirmed the designation of chief surgeon for Lovell and Bronaugh. Gordon, *Compilation of Registers*, 95.
34. Brown, *Medical Department* 101; MS C85, Tobias Watkins, *Medical Report of Military Inspection Tour Through the Northern Division, 28 October 1818*, National Library of Medicine (NLM).
35. Parker to Gardner, 3 July 1816, p. 59, vol. 4, roll 5, M-565, RG 94, NARA.
36. Wool to Brown, 24 December 1816, Inspection Reports, 1816–1819, vol. 4, box 49, Wool Papers, State Archives of New York, Albany.
37. Gillett wrote that Lovell was the inspecting hospital surgeon by the fall of 1817. Wool's report and the requirement for departmental sick reports suggests an earlier date. Gillett, *AMEDD, 1775–1818*, 190; Lovell to Brown, 15 November 1817, Lovell, *Military Medical Essays*, vol. 2, MS B29, NLM.
38. Hemphill, *Papers of John C. Calhoun*, vol. 2, lv; Weigley, *History of the US Army*, 137-139.
39. Hemphill, *Papers of John C. Calhoun*, vol. 2, xl.
40. The close nature of their relationship is noted in Morris, *Sword of the Border*, 210; in various letters cited in Hemphill, *Papers of John C. Calhoun*, vol. 2; and in the Jacob Jennings Brown Papers, LOC.
41. Calhoun to Brown, 17 December 1817, Jacob Jennings Brown Papers, LOC.
42. Mann to Brown, 22 October 1817, Jacob Jennings Brown MSS, Massachusetts Historical Society, Boston.
43. Lovell to Brown, 15 November 1817, MS B29, vol. 2, *Military Medical Essays*, NLM.
44. Wool referred to a hospital department more from form and habit than administrative fact.
45. Wool to Parker, 1 December 1817, Inspection Reports, 1816-1819, vol. 4, box 49, Wool Papers, State Archives of New York.
46. Apothecary General Francis LeBaron returned to Albany from an inspection tour of "our northern & western frontier as high up as Detroit & have collected property to a considerable amount belonging to this Dept. which would otherwise have been lost & destroyed." He appears to have visited Michilimackinac, Detroit, and Niagara, but may not have made it to Sackets Harbor because he was shipwrecked on Lake Ontario. He was ill much of the time. LeBaron to BG Parker, 7 November 1816, roll 12, M-566, RG 94, NARA. LeBaron was also getting a lot of criticism at this time. Acting Secretary of War Graham wrote to him: "You will receive herewith enclosed a copy of a letter from Col Jessup . . . of the supplies of Hospital Stores furnished by you to the 8th Military Dept. You will be pleased to advise the department of any

thing you may have to say in relation to these supplies, but should these complaints be reiterated, it will be found necessary for the government to discontinue your service."Sec War to LeBaron, 5 February 1817, p. 243, roll 8, M-6, RG 107, NARA.

47. "This report and that of Dr. Lovell's forwarded some time since to Mr. Graham will afford some information on the state of my command." The other report was from Inspector General Parker. Brown to War Dept, 6 December 1817, Memoranda, January 1816, microfilm 16,889-1P, part 3 of 3, Jacob Jennings Brown Papers, LOC.
48. Brown to Calhoun, 2 January 1818, part 3, reel 1, Jacob Jennings Brown Papers, LOC.
49. Waterhouse to Brown, 28 January 1818, Jacob Jennings Brown MSS, reel 4, Massachusetts Historical Society.
50. Ibid.
51. Waterhouse also advocated a plan to commute the "punishment of death for desertion, & other very high crimes for that of compulsory labor, during life, or for a shorter period according to the magnitude of the crimes, or clemency of the President." Waterhouse to Brown, 28 January 1818, Jacob Jennings Brown MSS, reel 4, Massachusetts Historical Society.
52. Calhoun to Charles Rich, 9 January 1818, Hemphill, *Papers of John C. Calhoun,* vol. 2, 65.
53. Morris, *Sword of the Border*, 210-211, 219.
54. Smith to Monroe, 21 February 1818, Hemphill, *Papers of John C. Calhoun,* vol. 2, 154. The author has not found this letter or the accompanying endorsements in NARA or LOC. No reference has been found in the Maryland State Archives or the Sylvanus Thayer Papers, US Military Academy. Watkins gave his thoughts on being the new director of the medical department to longtime friend Daniel Parker, US Army adjutant general, on 29 November 1816: "my heart is not so firmly fixed upon it, but that I would bear a disappointment with strict composure. I would not stand in the way of any body else, nor do I suppose that the pretensions of any body else would be over looked for my sake . . . but there will be no harm in asking for it—if I got it so much the better for me, if I failed so much the better for somebody else. So you see, I am quite *philosophic* about it. I would a great deal rather be *Doctor General*, if I can persuade some of my friends in Congress that such a thing is essential to the completion of our Staff, which I shall try to do when I go to Washington." Daniel Parker Papers, Collection 466, Incoming Correspondence, June-December 1816, box 5, file 10, 14-30 November, Historical Society of Pennsylvania.
55. Mann to Calhoun, 5 March 1818, Hemphill, *Papers of John C. Calhoun,* vol. 2, 175.
56. Waterhouse was a master of verbose pandering with a hidden meaning. In his letter to Brown he concluded, "As this is not a narrative of any actual state of things, or this military department, but a benevolent speculation, I could not with propriety, send it to you, or to the Inspector General; it not being done in my official capacity. I therefore have sent it to my friend, Mr. J. Quincy Adams, and submitted it to my private judgment; and if the general plan met his approbation I begged of him to pass it through the proper channel to the President. If he thought that it ought to go through the hands of the Secretary of War, he would give it to him if not, he would present it himself . . . I have sometimes wished that I could do something innocent & useful, that might induce the War Dept to order me to Washington." Waterhouse to Brown, 28 January 1818, reel 4, Jacob Jennings Brown MSS, Massachusetts Historical Society.

57. Lovell's annual salary was $2,500. James M. Phalen, "Joseph Lovell," *Army Medical Bulletin*, 52 (April 1940), 28; Obituary, *National Intelligencer*, 19 October 1836; Weigley, *History US Army*, 135.
58. Phalen, "Joseph Lovell," *Army Medical Bulletin*, 52, (April 1940), 28.
59. Ibid, 29.
60. Calhoun to Brown, 25 April 1818, Hemphill, *Papers of John C. Calhoun,* vol. 2, 258-259.

Chapter 3

Joseph Lovell and *Remarks on the Sick Report*

Joseph Lovell, MD

Joseph Lovell,[1] whose industry and talents had impressed Calhoun, Brown, and Mann, was born in Boston on 22 December 1788, the first child of James S. and Deborah (Gorham) Lovell. The Lovell's were an old and prominent Boston family known for its academic prowess.[2] Great-grandfather John Lovell (1710–1778) graduated from Harvard in 1728 and became master of the Latin School in 1734.[3] Grandfather James Lovell (1737–1814) received his primary education at the Latin School and graduated Harvard in 1756.[4] Arrested as a rebel spy in the spring of 1775, James was sent on a prison ship to Halifax, Nova Scotia, at the same time his father took up residence in that city as a loyalist refugee.[5] James was exchanged in the fall of 1776 and returned to Boston to become a delegate to the First Continental Congress.[6] After the Revolutionary War, James was appointed receiver of continental taxes in Boston and established the first Custom House on State Street.[7] Lovell's father, James S., graduated from Harvard in 1787,[8] worked as an officer of police and, from 1803 to 1818, as a Custom House officer.[9]

Joseph probably received his primary education at the Latin School. He received his AB from Harvard in 1807 and began his medical apprenticeship under William Ingalls, MD,[10] in Boston. Ingalls pronounced Lovell a qualified doctor in 1810. Lovell established his first practice, approved by the Massachusetts Medical Society, in his father's home on Pleasant Street.[11] Over the next few months he became an active and successful member of Boston's medical community and continued a warm professional relationship with Ingalls.[12] A successful medical apprenticeship, however, did not include an MD degree. When the preceptor considered the student appropriately prepared for practice he

wrote out and signed a certificate to that effect. Although a certificate from Ingalls would have guaranteed the public a qualified doctor, that certificate's validity extended only as far as Ingalls' reputation. Therefore, late in 1810, Lovell sought out and obtained admittance into Harvard Medical School.

At the time Lovell began his classes, Harvard Medical School had just moved to Marlborough Street in Boston from its original location in Cambridge.[13] John Warren, who founded the school in 1782, was professor of anatomy and surgery in 1810. A legendary instructor and surgeon, Warren had served at the battle of Long Island, the retreat across Manhattan and New Jersey, and the battles at Trenton and Princeton during the Revolution. Later he directed the military hospital in Boston and passed on his skills to younger surgeons. All of these experiences undoubtedly enriched his lectures.[14] His son, John Collins Warren, who had studied at Guy's Hospital in London and the Clinique de l'Ecole de Médecine in Paris, assisted as adjunct professor in both anatomy and surgery.[15] Benjamin Waterhouse taught the theory and practice of physic. A strong advocate of vaccination against smallpox, Waterhouse had successfully tested this technique upon a number of adolescent boys in 1802, an experimental study in which Warren was a senior advisor.[16] Professor Aaron Dexter and Adjunct Professor John Gorham taught chemistry and materia medica in 1810.[17] James Jackson assumed the new professorship of clinical medicine. Jackson, who also had studied at St. Thomas's and Guy's Hospital,[18] brought new methods of clinical instruction to the Boston Dispensary, the Marine Hospital in Cambridge, the State Prison in Charlestown, and the Almshouse, all of which had opened their doors to the school by the fall of 1810.[19] The collective medical and surgical knowledge and experience of these men, their appreciation of research and new medical methods, and their use of Boston's clinical facilities to imitate those of London and Paris provided Lovell with a remarkably robust medical education. He graduated in March 1811 in the first Harvard Medical School class to receive MD degrees, and returned to private practice.[20]

In March 1812, the 9th US Infantry Regiment was organized and began recruiting in Massachusetts.[21] Lovell joined the unit as regimental surgeon on May 15[22]; however, due to sluggish recruiting, the regiment did not join other units assembling at Burlington, Vermont, until December.[23] Although this delay allowed him time to prepare for his military service, Lovell left no evidence that he did so. However, his immediate success as a regimental surgeon, both as hospital administrator and field surgeon, suggests that he consulted available local resources on military

medicine and surgery. Both Warren and Mann[24] could have provided sound advice on military trauma and associated diseases, as well as on the administration of military hospitals. At the Boston Medical Library,[25] Lovell would have found a handful of books to study: *Cuming's Naval, Military, & Private Practitioners Amanuensis Medicus et Chururgicus* (London, 1806), a comprehensive treatise on a Royal Navy surgeon's experiences; John Jones's *Practical Remarks on the Treatment of Wounds and Fractures* (New York, 1775), America's first surgical text, which included disease prevention measures for military surgeons; *Woodfield's Military and Domestic Surgery*; and Gerhardt van Swieten's *The Diseases Incident to Armies with the Method of Cure, To which are added; the Nature and Treatment of Gunshot Wounds by John Ranby, Also Preventatives of Scurvy at Sea by William Northcote*. Van Swieten's contribution was translated from the German and printed at Philadelphia in 1776. Although meant as a handbook for regimental surgeons without benefit of a professional medical education, it provided useful knowledge for any inexperienced military physician.[26] In addition, the library offered J.F.D. Jones's *Treatise on Hemorrhage and the use of the Ligature* and Seguin Jackson's *Observations, etc., on the Epidemic Disease of Gibralter*, which a military surgeon would also find useful. At the Library of Boston[27] Lovell would have found the 1810 American edition of John Pringle's *Observations on the Diseases of Armies* with notes by Benjamin Rush,[28] Donald Monro's two-volume work *On Preserving the Health of Soldiers* (London, 1780),[29] Robert Hamilton's *Duties of the Regimental Surgeon* (London, 1784),[30] and Robert Jackson's *Medical Department of the British Army* (London, 1803) and *System for the Medical Department of Armies* (London, 1805).[31] Apparently neither library offered Richard Brocklesby's[32] *Oeconomical and Medical Observations* (London, 1764). Of all of these volumes, Jackson's works, describing the contemporaneous experiences of a thoughtful and erudite military surgeon, would have been the most beneficial.

Well educated medically, with a few years of practice behind him, Lovell deployed with the 9th regiment to Burlington. He was in the field from December 1812 until May 1815, either administering a general hospital or on campaign against the British.[33] In both settings he was recognized quite rapidly as a competent and capable military medical officer. Mann added to his earlier compliments by stating that Lovell was "one of the most able and attentive surgeons of the army"[34] and that Lovell's "frequent reports . . . bespeak an accurate and discriminating mind."[35] Lovell's reports for the 1813 and 1814 campaigns, included in Mann's *Medical Sketches of the Campaigns of 1812, 13, 14*,[36]

appear deserving of the praise from his Boston mentor and colleague. Well organized, erudite, concise, and informative, they reflect a sound understanding of medical practice[37] in that era. Moreover, they demonstrate a firm grasp, exceptional for a 24-year-old urbanite, of the etiology, natural history, diagnosis, and therapeutics of diseases common to the military environment.

Lovell's technical skills were commented on by William Beaumont,[38] surgeon's mate, 6th US Infantry Regiment, in the aftermath of the assault on Fort George in 1813. Lovell and Hospital Surgeon John Moncure Daniel[39] assisted Beaumont in treating a gunshot wound to the head. Beaumont commented later that they "thought it advisable to trepan without delay . . . that the injured bone must exfoliate sooner or later & kill the patient if not remov'd, therefore the oppration [sic] was perform'd by Doct Lovell in a most adroit & masterly manner."[40] Mann agreed, stating "as an operative surgeon, he [Lovell] is inferior to none."[41] Lovell's success also depended on what appeared to be a natural affinity for military service. This assessment, although largely retrospective, was commented upon by William E. Horner, MD, a military surgeon at the Buffalo and Williamsville hospitals, who remembered that Lovell "distinguished himself by his skill and zeal in the campaign of 1813, as well as in 1814."[42] Lovell was promoted to hospital surgeon on June 30, 1814,[43] and finished out the war as director of the army hospital at Williamsville, New York.[44]

By the fall of 1815, Lovell appeared to have given up the struggle for the district surgeon position in Boston in favor of a position on Brown's staff in the Northern Division. His *Remarks on the Sick Report of the Northern Division for 1817*, and its cover letter, add credence to this assumption. These two documents are not merely a compilation of annual morbidity and mortality statistics meant to satisfy an administrative requirement; rather, together they constitute a description of the failures and deficiencies of the medical department not only in the recent war, but also since its inception in 1775, and a template for corrective action. Lovell could not have produced these papers from wartime experience alone. He had to observe and analyze medical operations in the Northern Division over time and then synthesize this data with his experience and historical facts.

Lovell began his discussion at the tactical level, using simple, descriptive epidemiology to demonstrate the maladies common to soldiers in peacetime. He then rapidly moved on, using historical comparisons and a common-sense approach, to show that these same maladies occur in wartime, only with greater incidence. The immediate cause of these

illnesses was inadequate clothing and quarters, but the underlying reason was wanton neglect of the soldier by line and medical officers. Lovell maintained that officers have a responsibility for the welfare of the command and the soldier, which begins with disease prevention.

For the regimental surgeon, an adequate knowledge base of medical science was imperative so that food and water sources and other field conditions can be evaluated, clinical observations made, disease investigated, and records kept. Also, the regimental surgeon must have a basic understanding of military operations to function appropriately within the command, and therefore a set of medical regulations was required. Clear, concise, and comprehensive regulations defining medical department duties and responsibilities were essential not only for the department's success, but also the success of the novice medical officer.

Lovell then shifted the focus of his discussion to outline the job description of Army surgeons above the regimental level. In doing so, he moved to the operational level of military medicine. These surgeons have the same duties and responsibilities as their regimental colleagues, but their activities encompass a broader scope of action. Moreover, these men must be experienced. Lovell stated quite clearly that the special knowledge of the details of army life was critical to command health and could only be acquired by medical officers over time. To Lovell, this is the raison d'être of a peacetime military medical establishment.

Regular analysis and reporting of health conditions among the troops to higher medical command was also imperative. A journal with the post's description, climate, and weather was to be kept, as well as a prescription book containing soldier complaints, disease symptoms and causes, and successful and unsuccessful treatment practices. This information would be put into a surgeon's quarterly report to headquarters. These documents would provide a "system of Medical police & Army practice suited to the diseases incident"[45] to troops and post across the division. Successful new medical practices discovered by trial and error—what today would be called experimental research—were to be assessed, and if found valid, supported. Lovell also saw, in the quality and timeliness of these reports, a method of judging the surgeon's competence and attention to duty.

Lovell did not describe an army staff-level medical officer in his remarks because an army staff, in the modern sense, did not exist; however, he provided for a medical chain of command and a medical officer at the strategic level. The division headquarters surgeon should also hold the title and responsibility of inspector of hospitals, making routine inspections separate from command and inspector general visits to assess

facilities, stores, equipment, and record keeping. This medical director should also have the authority to request and receive quarterly reports from each surgeon in the division, consolidate them, and provide health reports to the commander for action.

Brown undoubtedly appreciated Lovell's medical and organizational expertise and his concern for the soldier's welfare.[46] Calhoun, however, recognized in Lovell's remarks a broader reform vision consistent with his own, and strongly urged President Monroe to appoint him the first surgeon general to sit on an army staff.[47]

The *Remarks* Document

The following text is a reprint of Lovell's original manuscript, with reference numbers inserted. Aspects of the document are discussed in detail in the following notes.

COVER LETTER AND
REMARKS ON THE SICK REPORT OF
THE NORTHERN DIVISION
FOR THE YEAR ENDING JUNE 30TH 1817

November 15, 1817
Joseph Lovell, MD
Hospital Surgeon, U. S. Army

Cover Letter to
Remarks on the Sick Report of the Northern Division,
addressed to Major General Jacob Brown

Brownville, November 15, 1817

Sir:

Enclosed is a consolidated report of the sick in the Northern Division for the first year since the issuing the order on that subject; & tho [sic] it has been but partially obeyed, it appears the complaints most prevalent among the troops are precisely the same as during the war; & which were then so destructive to our Army; ----viz: diseases of the lungs and bowels.[48] ---- It was therefore thought proper to state at large their probable causes,[49] & the obvious means of preventing them;[50] & from my own experience on the subject, I am fully convinced of the correctness of what is here advanced.

From attention to the errors & deficiencies of our Medical Department during the five years I have been attached to it, I am especially confident of the necessity of adopting some system of the nature here proposed, as the only plan calculated to obviate the many instances of neglect of duty & waste of property so often complained of.[51] And from the late observations of different fronts of the Division,[52] & from the examination of the reports & returns, I am fully confirmed in my opinion on the subject. Until something of this sort be adopted any system of Medical Regulations will only continue to be as they always have been, a mere dead letter.[53] Should this be established, a body of medical police[54] might be proposed, which in all probability would soon remedy existing evils, as well as provide for future contingencies.[55]

Most respectfully,

Your obedient
Humble servant,

Joseph Lovell
Hosp Surg
US Army

By the reports received[56] from the different posts it appears the troops have been remarkably healthy during the last year; for the whole number of cases (2138) very nearly one half (1031) are slight accidents[57] & transient complaints, which detain the soldier but a few days from duty; – 193 from wounds;[58] – & 55 venereal;[59] – leaving but 839 of fevers & other important complaints.

Of these 266 consist of the different kinds of inflammatory fever;[60] – as colds, pleurisy etc; which are the almost inevitable consequence of a cold & changeable climate,[61] & which no ordinary care[62] can prevent.[63]

As they must always be incident to the inhabitants of the northern section of the Union, & particularly to the soldier, ought not the most efficient means be taken to enable him to obviate[64] as far as possible these injurious effects of climate by the quantity & quality of his clothing?[65]

Next on the list to inflammations comes Diarrhea & its attendant Dysentery.[66] (Diarrhea 246, Dysentery 94) As these, particularly Diarrhea, were the pests of our Army during the war, constituting with inflammations nearly the only complaints; & as they appear to be the chief cause of disease even in peace, it must be a matter of the highest importance accurately to ascertain their causes, & the best means of removing them, or obviating their deleterious effects.

It required but little ingenuity to surmise that bad food & worse water would produce more or less disturbance in a man's stomach & bowel; especially when he had been used to much better fare. It was therefore a very easy matter to account for all the diseases of the soldier by accusing the contractor of furnishing unhealthy provisions, & the water of containing deleterious ingredients. This mode of explaining the difficulty rendered police duty vastly easier to the officers of the line,[67] & furnished the Surgeon with a brief & satisfactory mode of accounting for the death of his patients. The consequence was that much time & some talent were wasted in talking & writing[68] against contractors & lake water, which might have been much better employed in rendering the soldier comfortable, & protecting him against the inclemencies of the climate.

For the fact is that neither of these accusations were in general just. The provisions were not commonly bad; nor did experiment show any ingredients in the water[69] at all adequate to the effect supposed. Nor was it true that the food or the water were peculiarly bad, wherever & whenever these complaints prevailed & proved most fatal. Nor is it believed there is cause of complaint against the provisions furnished at present.[70]

It is moreover exceedingly doubtful whether bad food alone would produce the effects that have been ascribed to it. For in prison & on ship board, where numbers are frequently confined for a length of time to far worse fare than is even pretended in these cases, complaints of this nature are by no means the general consequence; while many a prisoner & slave condemned to the hardest labour [sic] have proved by experience how very soon the digestive organs will become accustomed to food of a much worse quality than contractors would dare to issue, or the soldiers senses permit him to receive; & that even the deleterious effects upon the constitution were very gradual, tho [sic] aided by many contingents, to which the soldier, in this country at least, is seldom exposed.[71]

It is by no means intended to assert that bad food, or coarse food badly cooked, would not produce disease;[72] much less that it would not peculiarly aggravate complaints of the stomach & bowels, or even act as an exciting cause[73] of them. But it is meant to say that this alone does not necessarily, or even generally, produce such complaints; – that the food of the soldier was not during the war, & certainly is not now, of a quality calculated to produce them; – that the prevalence of these complaints at any particular time have no proportion to the good or bad quality of the provisions; nor were those places, where they were almost always commiting ravages, worse supplied in this respect than any other; & therefore that we are to look to some other cause for the production of these Military plagues.[74]

And this it is apprehended will be found to arise from an undue exposure to cold & moisture.[75] For the recruit is immediately confined to his rations, & experiences no bad effects from the change. It is not until he begins to feel the want of dry & comfortable lodging & clothing; & to be exposed to the changes of weather without sufficient clothing or exercise, that he suffers

from diseases of the lungs & bowels.[76] It is not a fact that those stations, which become famous as the grave-yards of the Army were worse supplied with provisions, or abounded with worse water than any others; while it is well known that at these places the soldier was peculiarly exposed to the above mentioned noxious agents. It could not be owing to the state of the provisions or water that these complaints were so destructive in the spring & fall rather than in the summer & winter; but it must be attributed to the unwholesome combination of cold and moisture peculiar to this frontier at these seasons; & it must be from exposure that even now in time of peace, these complaints continue at some posts to occupy so large a share in the sick reports.

In proof of what is here advanced we need only to refer to the mortality at Sackett's Harbour during nearly the whole war;[77] & to the state of the Army in that vicinity during the fall of 1813. In both cases it must have been the climate – the weather produced the mischief; as there is not the least ground for supposing there was anything peculiarly bad in the provisions or water at that particular time & at that particular place.[78]

Besides, it was well known that among the inhabitants of the northern Section of the States, the greater proportion are under the necessity of guarding themselves by strict attention to clothing from the bad effects of the climate in order to prevent or remove the very diseases in question; & every practicing physician depends almost entirely upon this circumstance for curing, & altogether for preventing complaints of this nature.

In confirmation of what had been advanced it may also be added that the only medicines, which have any permanent effect upon these complaints, are those which act upon the pores of the skin;[79] & thus in some measure counter act the effects of cold & moisture; and these require every assistance from warm bathing, warm clothing, lodging, etc. Simply cleansing the stomach & bowels[80] does very little toward removing the complaints when fully formed. A coarse diet indeed is injurious, but it is in consequence of debility induced by the disease itself. It aggravates, but does not produce it, & of course change of diet will not cure it. And even in the state of convalescence, it is very common after a cold & rainy night, when the sick are in tents, to find several, who appeared fast recovering, dead within twenty four hours;

& some even before the morning visit of the Surgeon. And this was in greater or less degree so constantly the consequence on the whole of this frontier, that after a stormy night the attending Surgeon could calculate very certainly upon finding some dead, & many very much reduced.

If then we are to attribute not only the great waste of life during the war, but the majority of the complaints at present to the want of adequate means of guarding against the effects of climate, it ought most certainly to be represented to those whose province it is to make such alterations & additions in the allowance of clothing as will be consistent with true economy by being best calculated to remedy the evil.[81] Tho [sic] this end no soldier in this Division, at least none north of Philadelphia, should be allowed to wear any other than a woolen shirt.[82] This point has been often insisted on by the Surgeons of the Army; & in confirmation of it we need only refer to the number of those enjoying every comfort, who find it necessary in order to avoid complaints of the lungs & bowels, not only to wear flannel next to the skin, but to follow the advice of Dr. Franklin in not taking it off until mid-summer, & putting it on again the next day.[83] A second article equally necessary to the end proposed is an outer coat.[84] Indeed there are few citizens of any grade in this climate who do not feel the necessity of this, & who do not at any rate provide for it or a substitute, tho [sic] most generally comfortably housed at those times when the soldier is most exposed. And lastly, the most important circumstance perhaps of all, is to enable the soldier to keep his feet warm & dry by a liberal allowance of woolen socks & laced shoes[85] reaching at least to the ankle. Almost everyone has at times felt the uncomfortable consequences of wet & cold long applied to the feet; & many know but too well, these deleterious effects upon the constitution thro' the lungs & bowels; so that it is scarcely necessary to insist upon this point. In fact there can be little doubt that due attention to these things; & to such circumstances of the soldier's quarters as may tend to the same end, would materially lessen the number of sick at present, & be of most essential benefit in the event of war. It is well known how much attention was bestowed upon this subject by the British on this frontier;[86] so that their soldiers were even supplied with fur caps & socks

& gloves in addition to the articles above recommended; & the consequence was that the complaints which destroyed the greater part of our Army, were scarcely known among them, tho' [sic] they were often near neighbors for months.

The cases of Rhematism[87] are few, for the troops are mostly young & healthy men; & this is a mode of inflammation[88] which generally attacks those of debilitated constitutions, or who are somewhat advanced in life. It renders many unfit for service, who but for this would be efficient men, & was at times very troublesome during the war.[89] Very few, if any, diseases require greater attention to comfortable clothing & lodging than this; they are the grand requisites for preventing the complaint in those predisposed[90] to it, and absolutely necessary to removing it when induced.

The cases of intermittent fever[91] have not been numerous, except in the 5th Department, & particularly at Detroit.[92] This complaint always prevails more or less among the troops,[93] & tho' [sic] it depend altogether upon local causes[94] for its origin, much may be done to lessen the susceptibility of the system[95] to it; and therefore wherever it occurs it becomes fully as important a part of the Surgeons duty[96] to explain & recommend the means of preventing it,[97] as to administer the remedies calculated to cure it.[98] The whole number of cases reported is 164; of these 141 were in the 5th Dept. & 129 at Detroit. How far this prevalence of the complaint is to be attributed to the effect of climate, & how far to accidental[99] & predisposing causes;[100] or whether the last year has been in this respect peculiarly unhealthy, can of course be known only by the inquiries, observations, & reports of the Surgeons stationed there. But it is much to be regretted that one of the most important duties of an Army Surgeon, that of investigating the causes of disease at the different posts in order to remove them when possible, or obviate their noxious effects when practicable, should not be required by our regulations; & of course not attended to by the Surgeons. Nor has the order, requiring every Surgeon to keep a record of the cases under his care, been attended to as its importance demands.[101] A strict attention to these points would not only be of the greatest benefit in preventing disease,[102] but necessarily render the Surgeon better acquainted with the nature of the complaints that

occur, & at the same time ensure a degree of industry & attention to duty,[103] which is suspected to be much required.

As connected with this subject may be also mentioned the want of proper system of Medical police;[104] & of due attention to existing regulations in relation to it. This is one of the most important duties of the Medical Staff;[105] is most carefully attended to in other services;[106] & can only be introduced into ours by long practice. Like many minute duties of officers of the line, particularly those connected with police & the interior economy of a camp,[107] they are only to be gradually acquired; & so incorporated into the regular routine of duty as to be considered as indispensable as the mere prescription of medicine. An officer of the line may soon learn the duties of the field, & a Surgeon be amply qualified for his profession, & both of them be worse than useless to an Army. It is from a knowledge of minutiae, which depend neither upon general regulations nor specific orders that the experienced officer & surgeon becomes so much superior to the undisciplined recruit. It is almost entirely in order to acquire this kind of knowledge that a military establishment is kept up in time of peace; & it is an undoubted fact that in no department of the Army is it so slowly acquired, & therefore so deficient as the Medical.[108] How severely this was felt during the great part of the last war is to too well & too publicly known to need comment.

It is therefore suggested whether such alterations be not required in the regulations, as one calculated to produce a system of Medical police,[109] which will not only ensure attention to every point of duty at present, but also in case of war enable the newly appointed Surgeon to learn what he ought to do, without the necessity of trusting to his own ingenuity and suggestions; & after all his industry finding himself disbanded just as he begins to understand the most important duties of his station. Not to mention the many serious disadvantages of being obliged to allow each to adopt his own imperfect system; or the waste of time of men & money while he is making his experiments.[110] For there can be little doubt that where one man has died from improper Medical treatment, then have been destroyed from want of a knowledge of the many duties peculiar to an Army Surgeon.

To effect this purpose it should be made the duty of every Surgeon & mate, having the charge of a Hospital, together with his quarterly report to the Head Quarters of the Division, to transmit an account of the local situation of his station, of the climate, the diseases most prevalent in the vicinity, & their probable causes; the state of the weather during the time reported with respect to temperature, wind, rain, etc;[111] to state at large the general symptoms of the complaints among the troops, as well as every peculiarity of disease;[112] to investigate & as far as possible report their causes; the means employed to obviate them, with the success; as well as the practice adopted & the result.[113]

To this end he should not only keep a prescription book[114] containing a daily account of the symptoms & circumstances of each patient in every important case,[115] the medicines prescribed, & the result of his practice; but also one, in which should be stated everything directed relative to the diet & regimen; as the quality & quantity of food allowed, the mode in which it is prepared, etc. By the former the mate or Apothecary should prepare the medicine; & it would also be a correct voucher for the proper expenditure; & by the latter the Steward deliver the allowance of Hospital Stores, etc; & this would be a voucher for what he had expended. The Surgeon should also keep a diary of the weather; noting in it whatever may be supposed to produce or vary the forms of disease. By a reference to these the Surgeon in his quarterly reports, instead of a mere list of names usually made out by the Steward, would be enabled to give such an account of the diseases that had occurred, their causes, & his treatments as would be the best possible criterion not only of his medical ability but also of his industry & attention to duty.[116] And besides this, an abstract of these reports would soon enable the Surgeon at Head Quarters to furnish what is much wanted at present, & what can only be effectually supplied in this way – viz:– a system of Medical police & Army practice suited to the diseases incident to the troops at the several posts in the Division; – & at the same time of suggesting such means of preventing these complaints, as the experience of the different Surgeons may have found most beneficial under different circumstances of time & place.[117] It is in this way that the most useful practical works have been produced.

In order to ensure attention to these things; and also to the manner in which the inferior but not less important offices of the Hospital are performed; it is also proposed that the Surgeon attached to the Head Quarters of the Division be made "inspector of Hospitals". It has long been observed that none but one of the Medical Staff can be competent to this duty. The Inspector & commanding officer can only determine whether the hospital & its furniture appear neat & clean, & the surgeon make his regular visits.[118] But in everything relating to the duties peculiar to his station the Surgeon is at present left entirely to his own sense of propriety. He is the only officer, who is not in some way or other responsible for the mode in which his various duties are performed, & strictly accountable for the public property entrusted to his care. If this cause is no doubt to be attributed the many complaints continually, & too often justly, made against the Medical Department, particularly in active service, both on account of neglect of duty & waste of property.[119]

In addition therefore to the duties assigned a Medical Director, the Surgeon attached to the Head Quarters of the Division should be authorized to call for & receive from the respective surgeons & mates such returns & reports relative to the situation, climate, weather etc. at the different posts, as may be calculated to ascertain the causes of disease, & the best practicable means of preventing it. And also such an account of the symptoms in every important case, the remedies prescribed, & regimen observed as may be requisite to elucidate the nature of the prevailing complaints, & the most efficient mode of treating them.[120]

He should consolidate the quarterly reports; & make such remarks, & suggest such improvements both in practice & police, as may appear to be required for the benefit & comfort of the sick. He should from time to time inspect the Hospitals; examine the books & accounts of the steward & wardmaster; – enquire into the manner in which every duty is performed; & see that all the regulation, both professional, & those relating to police are properly attended to; – by a strict examination of the prescription book judge of the Medical abilities of the attending Surgeon, & ascertain that there has been a proper expenditure of medicine; – from the diet book, which should contain the quantity & quality of the food & liquor daily allowed to each patient,

see that there has been a proper application of the Hospital Stores; & make such communications to the Apothecary general on the subject, as may appear necessary & proper.[121] And finally from his own observations, and from the reports accompanying remarks of the Surgeons to form a manual of medical police & practice suited to the circumstances of the soldier;[122] & to make such reports to the commanding General of the medical abilities, industry, fidelity etc of the respective Surgeons, as his information from all these sources might warrant.[123]

Were some plan of this nature adopted, & the above mentioned duties faithfully attended to, it is believed the good effects would soon be apparent; & that these would be as permanent as they were obvious.

Joseph Lovell
Hospital Surgeon
US Army

Chapter 3 Notes

1. There are few biographical papers on Lovell and no definitive book. James E. Pilcher, "Joseph Lovell, Surgeon General of the United States Army, 1818-1836," *Journal of the Association of Military Surgeons of the United States* 14 (1904), 337-340; Allen Johnson and Dumas Malone, eds., *Dictionary of American Biography*, vol. 11 (New York: Charles Scribner's Sons, 1937), 440-441; James M. Phalen, "Joseph Lovell," *Army Medical Bulletin* 52 (April 1940):27-32; and Mary C. Gillett, "Joseph Lovell," *American Journal of Biography* 14 (1999):13-14.
2. Nelson Lovell Carr and Margaret Patterson Carr, "Lovell and Related Families," unpublished manuscript [provided to author by Carr family], 1988, 6.
3. Johnson and Malone, *Dictionary of American Biography*, vol. 11, 439; Carr and Carr, "Lovell and Related Families," 2-3.
4. Johnson and Malone, *Dictionary of American Biography*, vol. 11, 438; Carr and Carr, "Lovell and Related Families," 4.
5. Johnson and Malone, *Dictionary of American Biography*, vol. 11, 438.
6. Ibid.
7. Carr and Carr, "Lovell and Related Families," 4.
8. *Harvard University. Quinquennial Catalogue of the Officers and Graduates 1636-1930* (Cambridge: Harvard University, 1930), 1362.
9. *Boston Directory*, 1798, 1803, and 1818.
10. William Ingalls (1769-1851) received his MD from Harvard in 1801. Howard A. Kelly and Walter L. Burrage, *Dictionary of American Medical Biography* (New York:

D. Appleton and Co., 1920), 592. Ingalls operated a school of anatomy on School Street that competed with that of John Collins Warren. *Boston Directory*, 1809, 81, and 1810, 229; Johnson and Malone, *Dictionary of American Biography*, vol. 11, 441.

11. *Boston Directory*, 1810, 229.
12. Joseph Lovell to Sec War, Boston, 23 January 1811. Lovell recommends Charles Cotton of Plymouth for surgeon's mate on the frigate *Constitution* and requests the secretary of war's influence on his behalf: "As Dr. Ingalls is at present much employed he deemed me to write to you in his name, according to Mr. Cotton," roll 4, M-566, Record Group (RG) 94, National Archives and Records Administration (NARA).
13. Thomas Francis Harrington, *Harvard Medical School*, vol. 1 (New York: Lewis Pub., 1905), 357-358.
14. Stephen Craig, "John Warren," *Journal of Medical Biography* 18 (August 2010):138-147. For the complete story of Warren's life see Edward Warren, *Life of John Warren* (Boston: Noyes, Holmes & Co., 1874).
15. Harrington, *Harvard Medical School*, vol. 1, 367.
16. Waterhouse first learned of Edward Jenner's new method of using cowpox to vaccinate against smallpox from the *Medical Repository of New York* journal in 1799. Warren, *Life of John Warren*, 404-406. For a detailed account of Waterhouse and vaccination in Boston see P. Cash, *Dr. Benjamin Waterhouse: A Life in Medicine and Public Service* (Sagamore Beach, Boston Medical Library & Science History Publications, 2006), chaps. 12-15.
17. Harrington, *Harvard Medical School*, vol. 1, 294-295.
18. James Jackson Putnam, *A Memoir of Dr. James Jackson* (Boston: Houghton, Mifflin, and Company, 1905), 217.
19. The Boston Dispensary opened in 1796. J.W. Bell, "Medicine in Boston and Philadelphia: comparisons and contrasts, 1750-1820," in: *Medicine in Colonial Massachusetts, 1620-1820* (Boston: Colonial Society of Massachusetts, 1980), 163. The Marine Hospital had been established in 1803 and the State Prison in 1805. Both facilities allowed clinical instruction. The Almshouse was opened for clinical instruction in July, 1810. Harrington, *Harvard Medical School*, vol. 1, 297, 299-301.
20. It is assumed, from other activities that Lovell continued in practice in Boston between March 1811 and May 1812 when he joined the 9th Infantry Regiment. There are no *Boston Directories* for 1811 or 1812 that might substantiate this.
21. Under the Act of 11 January 1812, the 9th Infantry was again organized in March 1812, with Simon Learned, of Massachusetts, as colonel. The regiment was raised in Massachusetts, and though a part of the regular army, was accredited to that state. Fred R. Brown, *History of the Ninth US Infantry, 1799-1909* (Chicago: R.R. Donnelley & Sons, 1909), 1-2.
22. Muster Rolls, 9th US Infantry Regiment, Field & Staff Officers, 1799-1814, drawer 4, box 309, map case 34, and Personal Papers of Physicians and Medical Officers, box 348 (Lovell), RG 94, NARA; Lovell obituary, *National Intelligencer*, 19 October 1836.
23. Brown, *History of the Ninth US Infantry*, 5.
24. Mann served two years (July 1779-June 1781) as surgeon of the 4th Massachusetts Regiment before being captured. Kelly and Burrage, *Dictionary of American Medical Biography*, 1920, 758-759.

25. *Catalogue of Books in the Boston Medical Library and the Rules and Regulations Concerning the Same* (Boston, 1810), Countway Medical Library, Harvard University Medical School, Boston.
26. "This work . . . no wise regards the Physicians, who, masters of their art . . . stand no need of the assistance of these first elements." However, military necessity obliged "the sick to be entrusted to persons who cannot be expected to have the same knowledge with those of the profession." Both quotes from Gerhardt van Swieten, *The Diseases Incident to Armies with the Method of Cure* (Philadelphia: R. Bell, 1776), 6.
27. Charles A. Cutter, *Catalogue of the Library of Boston, 1807-1871*, part 3 (Boston, 1878).
28. Sir John Pringle (1707-1782) was born and raised near Kelso, Scotland. He studied at St. Andrews, Edinburgh, and received his MD from Leiden in 1730. During the War of the Austrian Succession he served as physician to Field Marshall Sir John Dalrymple, 2nd Earl Stair, and as director of British hospitals in Flanders. *Observations on the Diseases of the Army* (1752) became quite popular because Pringle wrote it for line and medical officers and offered reasonable preventive modalities. It went through seven editions, the last an American edition annotated by Benjamin Rush in 1810. It was translated into French, German, and Italian. John Pringle, *Observations on the Diseases of the Army with Notes by Benjamin Rush*, (Philadelphia: Edward Earle, 1810); Morrice McCrae, *Saving the Army: The Life of Sir John Pringle* (Edinburgh: John Donald, 2014); Stephen C. Craig, "Sir John Pringle, Early Scottish Enlightenment Thought, and the Origins of Modern Military Medicine," *British Journal of 18th Century Studies* 38 (March 2015): 99-114 [first published online 14 April 2014].
29. Donald Monro (1727-1802) was the son of Alexander Monro *primus* (the first) of Edinburgh. He obtained his MD at Edinburgh in 1753. He served as a hospital physician in Germany during the Seven Years' War and published his experiences in *An Account of the Diseases Which Were Most Frequent in the British Hospitals in Germany* (London: A. Millar, D. Wilson, and T. Durham, 1764). Sydney Lee, *Dictionary of National Biography*, vol. 13 (New York: Macmillan, 1909), 629-630.
30. Robert Hamilton (1748-1830) was born in Coleraine, County Londonderry. He worked as an army surgeon with the 10th Regiment of Foot, then received his MD from Edinburgh in 1780. His book *Duties of a Regimental Surgeon* was published in 1788 and republished in 1798. William Munk, *The Roll of the Royal College of Physicians of London (1701-1800)*, vol. 2 (London: Royal College of Physicians, 1878), 443.
31. Robert Jackson (1750-1845) was the son of a farmer in Lanarkshire. He began medical studies in Edinburgh in 1768, but ran out of money. Jackson recognized he was "under the necessity of teaching myself or remaining untaught." He gained passage to Jamaica, where he worked with a Dr. King until the American Revolution began, at which time he joined the British Army, becoming an acting surgeon's mate with the 71st Regiment (Fraser's Highlanders). He obtained an MD from Leiden by examination in 1785. Jackson had an on-again off-again relationship with the army and published a handful of very useful military medical texts. H.A.L. Howell, "Robert Jackson, MD, Inspector of Hospitals," *Journal of the Royal Army Medical Corps* 16 (February 1911): 121-139, quote 121.
32. Richard Brocklesby (1722-1797) was born at Minehead, Somersetshire. He began his medical studies in Edinburgh in 1742, but soon transferred to Leiden and received his

MD in 1745. He was appointed physician to the army in 1757, served in Germany and then at the Military Hospital at Pimlico. His published account of his wartime experiences followed Pringle in that it too was written for both line and medical officers. Richard Brocklesby, *Oeconomical and Medical Observations, in Two Parts* (London: T. Becket and P. A. De Hondt, 1764); H.A.L. Howell, "Richard Brocklesby, MD, FRCP, FRS," *Journal of the Royal Army Medical Corps* 17 (August 1911): 115-122.

33. Lovell served as acting hospital surgeon at Burlington, Vermont, from the fall 1812 until early spring 1813, when he accompanied the 9th Infantry on the Niagara Campaign, and was designated acting hospital surgeon at Fort George in May. He took part in Wilkinson's campaign against Kingston in the fall and winter of 1813-1814, then worked in the French Mills and Malone hospitals until spring. He took part in the entire Niagara Campaign of 1814, was designated hospital surgeon in June, and appears to have finished the war at the Williamsville, New York, hospital. Muster Rolls, 9th Inf. Regt. Field & Staff Officers, 1799-1814, drawer 4, box 309, map case 34, RG 94, NARA; James Mann, *Medical Sketches of the Campaigns of 1812, 13, 14* (Dedham, MA: H. Mann and Co., 1816), 162.
34. Mann, *Medical Sketches*, quote 121.
35. Ibid, quote 256.
36. Ibid, 66-70.
37. In his report for 1813, Lovell stated he used *Five Dissertations on Fevers* by Fordyce to determine treatment for typhus (typhoid) fever. Mann, *Medical Sketches*, 68. Fordyce considered typhus or typhoid a regular continued fever. His treatment consisted of ipecacuanha or tartarized antimony to remove any food in the stomach and to bring the fever to crisis. George Fordyce, *Five Dissertations on Fever*, 2nd American edition (Boston: T. Bedlington and C. Ewer, 1823), 311. Note: his third dissertation, "Regular Continued Fever," in this edition was identical to the 1798 version printed in London.
38. William Beaumont (1785-1853) was appointed from New York as a surgeon's mate in the 16th US Infantry Regiment on 2 December 1812 and assigned to the 6th Infantry Regiment in January 1813. Harvey Brown, *The Medical Department of the United States Army from 1775 to 1873* (Washington, DC: Surgeon General's Office, 1873), 267. For Beaumont's complete career see Reginald Horsman, *Frontier Doctor, William Beaumont America's First Great Medical Scientist* (Columbia: University of Missouri, 1996); Jesse S. Myer, *Life and Letters of Doctor William Beaumont* (St. Louis: C.V. Mosby, 1912); and Genevieve Miller, *Beaumont's Formative Years: Two Early Notebooks, 1811-1812* (New York: Henry Shuman, 1946).
39. John Moncure Daniel of Virginia was commissioned as a hospital surgeon on 7 July 1809 and died in service 8 October 1813. Brown, *Medical Department,* 267.
40. Miller, *Beaumont's Formative Years*, quote 18.
41. Mann, *Medical Sketches*, quote 256.
42. William E. Horner, "Surgical Sketches," *Medical Examiner* 16 (December 1853):67, 754-774, quote 768.
43. Record of Service, box 348 (Lovell), Personal Papers of Physicians and Medical Officers, RG 94, NARA.
44. It appears that Lovell took over the directorship sometime in the fall 1814. Lovell obituary, *National Intelligencer*, 19 October 1836.

45. "Remarks on the Sick Report of the Northern Division for the Year Ending June 30th 1817," p. 17, MS B29, Joseph Lovell, *Military Medical Essays*, vol. 2, National Library of Medicine (NLM). "A body of medical police" refers to a method of medical policy, a set of regulations that govern medical administration and practice.
46. The Brown-Lovell relationship began during the war, but it is not clear when. Although it is possible that Lovell attended Brown on the field after his wounding at Lundy's Lane, there is no evidence for this theory. The sick and wounded were taken to the Buffalo hospital on 27 July, then moved to a new hospital at Williamsville, 11 miles to the east, on 1 August. There senior Hospital Surgeon Ezekiel Bull was assisted by hospital surgeons William Thomas and Joseph Lovell. It appears from Brown's comments in a letter to New York Governor Daniel Thompkins on 1 August ("my wounds are very troublesome, but not dangerous. I send you the enclosed statements of Dr. Bull for your information, but not for publication") that Bull, being senior, was Brown's attending surgeon. Memoranda, Brown Papers, microfilm 12,227-1P, Library of Congress (LOC); Brown to Thompkins, 1 August 1814, MSS M65-3, General Jacob Brown Letterbook, Buffalo and Erie County Historical Society, Buffalo; Mann, *Medical Sketches*, 162; Horner, "Surgical Sketches," 768. Their postwar relationship began after Brown's return from his division tour in the late summer of 1815. Correspondence from 1818 until Brown's death in 1828 indicates Lovell was a close friend and confidant who kept Brown apprised of politics in Washington during the latter's absences. Jacob Jennings Brown Papers, LOC.
47. Through discussion with Brown, Lovell became Calhoun's first choice as surgeon general and Calhoun recommended him to Monroe. Lovell obituary, *National Intelligencer*, 19 October 1836; Russell Weigley, *A History of the United States Army* (Bloomington: University of Indiana, 1984), 135; Calhoun to Brown, 25 April 1818, W. Edwin Hemphill, ed., *The Papers of John C. Calhoun*, vol. 2, 1817-1818 (Columbia: University of South Carolina, 1963), 258-259.
48. The addition of venereal disease would have formed the perennial triumvirate of diseases associated with armies throughout history. Venereal disease numbers are included in the "Remarks," but are small.
49. Lovell's understanding of disease causation was based on (1) the concept of individual constitutional balance within the body, (2) human and environmental miasmatic theories, and (3) the theory of epidemic atmospheric constitutions. The origin and development of these ideas can be traced to Hippocratic and Galenic medical philosophy. The physician no longer attempted to balance the four humors (blood, phlegm, black and yellow bile) as such, but still believed that the body's internal milieu could be significantly imbalanced, acutely and chronically, by temperament, strong emotions, diet, and contagion that arose in miasmas (vapors) given off by the sick or from marshy areas. In the late 17th century, Thomas Sydenham (1624-1689) and John Locke (1632-1704) invigorated the miasmatic theory through the concept of epidemic atmospheric constitutions, which explained the generation of epidemics and the seasonal variations of some diseases. Francis Adams. *The Genuine Works of Hippocrates*, vol. 1 (London: Sydenham Society, 1849); R.G. Latham, *The Works of Thomas Sydenham*, vol. 1 (London: Sydenham Society, 1848). See also Vivian Nutton. *Ancient Medicine* (London: Routledge, 2004) and Ken Dewhurst, *Dr. Thomas Sydenham (1624-1689), His Life and Original Writings* (Berkeley: University of California, 1966).

50. Disease causation, as per Sydenham above, allowed 18th century physicians to consider the possibility of preventive measures on land and at sea. Such measures consisted in altering what were known as the six "non-naturals" (air, food and drink, sleep and watch, motion and rest, evacuation and repletion, and passions of the mind). Air was the most important of these, and ventilation of sick rooms, hospitals, ships, and tents became the focus of preventive efforts. Adams, *The Genuine Works of Hippocrates*, vol. 1, 190; James C. Riley, *The Eighteenth Century Campaign to Avoid Disease* (London: Macmillan Press, Ltd, 1987), and L.J. Rather, "The 'Six Things Non-Natural': A Note on the Origins and Fate of a Doctrine and a Phrase,' *Clio Medica* 3 (1968): 337-347.
51. As will be seen, Lovell was advocating a system with a clearly described organizational structure, top to bottom authority based on a chain of command, and regulations that define the duties and responsibilities of everyone in that system.
52. The inspection tours implied here are not described in historical records found by the author.
53. The implication is that a "system of Medical Regulations," such as those in place in 1815, is useless without organization and authority. It is not clear whether Lovell was thinking of a centralized medical bureau for the Army as a whole or just for the Northern and Southern Divisions. General Brown was still thinking at the division level when Calhoun created a centrally directed Army organization in April 1818. Brown to Calhoun, 2 January 1818, microfilm 16,889-1P, pt. 3 of 3, Jacob Jennings Brown Papers, LOC.
54. Although Lovell would have been aware of the *Boston Medical Police,* written by John Warren, Lemuel Hayward, and John Fleet in 1808, which discussed consultation practices, discouragement of quackery, fees, etc., here he was advocating a more comprehensive and preventive medical policy similar to Johann Peter Frank's *A Complete System of Medical Police*, six volumes, published from 1779 to 1817. See Johann Peter Frank (trans. George Rosen), "Biography of Dr. Johann Peter Frank," *Journal of the History of Medicine* (Winter 1948): 11-46; (Spring 1949): 279-314.
55. This comment, in conjunction with note 53, provides valuable insight into Lovell's state of mind as he wrote his report: he envisioned a permanent medical department in support of the Army.
56. Northern Division surgeons had been directed to send quarterly reports to division headquarters, where Lovell reviewed them. See Chapter 2, note 33. Counting observations and applying simple statistical methods was made popular by John Graunt in the late 17th century and came into common usage in the 18th century, especially in Britain. See Ulrich Tröhler, "The Introduction of Numerical Methods to Assess the Effects of Medical Interventions During the 18th Century: a Brief History," 2010 (www.jameslindlibrary.org/illustrating/articles/the-introduction-of-numerical-methods-to-assess-the-effects-of-m; accessed 26 August 2014).
57. Common accidental trauma consisted of injuries from hand tools, weapons discharge, kicks or bites by domestic animals, and occasionally falls from a barn loft or being run over with a wagon.
58. It is not clear how Lovell differentiated accidental wounding from the 193 wounds he presents. Most of the reported trauma was minor; however, major trauma could occur and the potential for infectious complications from any open wound was always present.

59. The work of J.F. Hernandez on prisoners in Toulon in 1812 differentiated syphilis from gonorrhea for the first time. J.F. Hernandez, *Essai Analytique Sure la Non-identite des Virus Gonorrhoique et Syphilitique* (Toulon, France, 1812).
60. Fevers in the 18th century nosology were considered a category of disease. Fevers were divided into intermittent, remittent, and continued depending on the fever periodicity, that is, the interval from the beginning of one paroxysm to the beginning of the next, which was a very important diagnostic, therapeutic, and prognostic sign. Intermittent fevers demonstrated a definite interval and were classified as quotidian (24-hour interval), tertian (48-hour interval), and quartan (72-hour interval). Remittent fevers demonstrated diminutions and exacerbations of the fever, but never a complete intermission. Continued fevers did not demonstrate clear intermissions or remissions and were classified as inflammatory (colds, catarrhs, pneumonia, pleurisy); nervous; and putrid (also called malignant and petechial). These fevers could change from one to another depending on conditions and treatment regimens. See John Huxham, *An Essay on Fevers* (London: S. Austen, 1750); William Cullen, *First Lines of the Practice of Physic*, vol. 1 (New York: L. Nichols, 1805); George Fordyce, *Five Dissertations on Fever*, 2nd American ed. (Boston: T. Bedlington and C. Ewer, 1823); and William Saunders, *Elements of the Practice of Physic* (London, 1780).
61. Cold was considered a very important etiologic agent. Sudden and rapid weather changes—from cold to warm or warm to cold—especially when accompanied by wind currents and high humidity or rain, brought on inflammatory fevers and other inflammatory disease in various organ systems. Cullen, *First Lines*, vol. 1, 49-53.
62. The implication being that military medicine is different from civilian medicine and the care of soldiers required special thought and planning. The emphasis is his.
63. Prevention is a subtle underlying theme throughout the document and became a hallmark of Surgeon General Lovell's administration.
64. Prevention, again, is the main point, but Lovell is likely making another as well: the soldier, lawfully ordered to his post, deserved to be properly clothed. This was a criticism of a neglectful government and inefficient supply system, especially during the winter of 1813-1814. The emphasis is Lovell's.
65. Enlisted personnel were issued one coat (or jacket for dragoons), one wool vest, two pairs wool pantaloons, two pairs linen pantaloons, one pair half gaiters, one cap, one neckstock, one fatigue frock and trousers, and an allowance of "necessaries," i.e., shirts, stockings, socks, and shoes. James L. Kochan and David Rickman, *The United States Army, 1812-1815* (Oxford: Osprey Publishing, Ltd., 2000), 9.
66. Both diarrhea and dysentery were thought to be produced by changes in diet, water, or exposure to cold and moist conditions, which established an inflammation in the stomach and intestines. Dysentery was distinguished from diarrhea by having mucus and/or blood in the stool and a continued fever. See Cullen, *First Lines*, vol. 2, 336-343, and Saunders, *Elements of the Practice of Physic*, 83-87.
67. The concept that line officers were responsible for the health of their command through the proper policing of camps and the soldiers in them was at least 65 years old in 1817. Sir John Pringle, *Observations on the Diseases of Armies* (1752), Richard Brocklesby, *Oeconomical and Medical Observations* (1764), and Donald Monro, *An Account of the Diseases which were most frequent in the British Hospitals in Germany* (1764) made this concept very clear in their post-war military medical manuals. Benjamin Rush and Major General (Baron) Friedrich von Steuben reiterated this theme in their American Revolutionary War publications in 1778 and 1779,

respectively. Baron von Steuben, *Regulations for the Order and Discipline of the Troops of the United States* (Boston: Thomas and Andrews, 1794), 81-83, 87-88; Benjamin Rush, *Directions for Preserving the Health of Soldiers: Recommended to the Consideration of the Officers of the Army of the United States* (Lancaster, PA: John Dunlap, 1778). James Tilton, in *Economical Observations on Military Hospitals and the Prevention and Cure of Diseases incident to an army* (Wilmington, 1813), discussed this theme again for legislatures, commanding officers, and medical staff during the War of 1812.

68. A professional officer corps among Western armies, a product of Enlightenment social philosophy and the Napoleonic Wars, was still in the developmental stage. Lovell's criticism of unprofessionalism among line and medical officers and the belief that the soldier's welfare was one of their primary duties became a recurrent theme with him. For the development of a professional US Army see Samuel Huntington, *The Soldier and the State* (Cambridge: Harvard University, 1957) and William B. Skelton, *An American Profession of Arms: the Army Officer Corps, 1784-1861* (Lawrence: University of Kansas, 1992). Samuel J. Watson, *Jackson's Sword: The Army Officer Corps on the American Frontier, 1810-1821* (Lawrence: University of Kansas, 2012) and *Peacekeepers and Conquerors: The Army Officer Corps on the American Frontier, 1821-1846* (Lawrence: University of Kansas, 2013).
69. In 1778, Uppsala chemistry professor Torbern Bergman (1735-1784) developed a systematized approach to mineral water analysis through examination of physical properties (color, taste); qualitative properties demonstrated by reagents (color indicators, replacement reactions); and quantitative examination of evaporated residue. Christopher Hamlin, *A Science of Impurity: Water Analysis in Nineteenth Century Britain* (Berkeley: University of California, 1990). By 1791, J.F.A. Gottling had put equipment and reagents required for these tests into a portable chest for use by the lay public. "Description of a Portable Chest of Chemistry; or Complete Collection of Chemical Tests for use of Chemists, Physicians, Mineralogists, Metallurgists, Scientific Artists, Manufacturers, Farmers, and the Cultivators of Natural Philosophy," *Monthly Review* (May to August, 1792): 173. What chemical equipment surgeons had is unknown. The experiment Lovell was referring to was probably to test for lime and calcium salts and sulphuric acid.
70. The inference being that the medical officer has a responsibility to inspect and ensure food supplies and water sources are appropriate for consumption.
71. Lovell's knowledge of shipboard and prison conditions, and his use of that knowledge to contradict wartime explanations for army illness through a comparative and common sense approach not only reflects well on his Harvard instruction, but also suggests a broad understanding of the current medical literature and social issues. These attributes are likely what impressed Calhoun after meeting Lovell only once.
72. The chemical nature of the digestive process was unknown in 1817. Digestion was considered a putrefactive (decaying) process that could be severely altered by the nature and preparation of food. Problems with either could produce illness and possibly death. In 1825, Lovell began to support, morally and financially, William Beaumont's experiments on gastric juice at Fort Machilimackinac, Michigan Territory. In 1833, Beaumont published his work establishing digestion as a chemically-mediated process via a naturally produced hydrochloric acid in the stomach. William Beaumont, *Experiments and Observations on the Gastric Juice and the Physiology of Digestion* (Plattsburgh: F.P. Allen, 1833).

73. The "exciting cause" of a disease was that which immediately caused the disease. These included mechanical, chemical, and ingested agents; mental or physical exertion; excessive or suppressed evacuation; defective cleanliness, ventilation, or drainage; temperature changes; and epidemic, endemic, or infectious poisons.
74. Lovell brings his argument to a satisfactory conclusion based on sound medical knowledge and common sense. However, the length and careful development of this argument for his commander suggests that significant numbers of line and medical officers must have believed otherwise.
75. See note 61. The emphasis is Lovell's; he is emphasizing once again the command neglect of soldiers that he has observed in war and peace.
76. See note 62.
77. In August 1813 Sacket's Harbor was one of the filthiest camps Physician and Surgeon General Tilton had ever seen. Tilton to W. Popham, 22 July 1816, Tilton Papers, Delaware Historical Society, Wilmington, DE.
78. This is an odd comment because Lovell (1) puts total blame on the weather and does not take into account the ignorance of new recruits and negligent officers concerning camp police at Sacket's Harbor in 1813, and (2) is apparently ignorant of Hospital Surgeon William Ross's difficulties at that post during the time (see Chap. 1, notes 47 and 48).
79. This comment, in conjunction with those on the risk of exposure to cold and moisture (notes 61 and 66), provides a basis for physiology and pathophysiology as Lovell understood it. For a body to be in a state of health the secretion of fluids (insensible perspiration, sweat, urine, milk, mucus, saliva, semen) and blood flow had to be unhindered. Cold, moist conditions were thought to induce a spasm that caused skin pores to constrict (tending to make the dermis dry and rough); the surface blood vessels to contract and suppress perspiration; and a local inflammation to occur. The local inflammation was transferred to the blood and then carried by the blood to organs such as the lungs, stomach, and intestines, hence Lovell's complaint concerning clothing allowances and his comments concerning the use of flannel wraps as a preventive that kept the skin warm and promoted normal perspiration. George Fordyce, *Elements of the Practice of Physic*, 6th ed. (London: J. Johnson, 1791), 227, 238, 250, 316; Cullen, *First Lines*, vol. 1, 51. Sudorifics, agents that act upon skin pores to keep them open and functioning properly (to promote perspiration) could be found among the stimulants (bitters such as chamomile, gentian, and absinthe leaves) and antispasmodics (belladonna, mandragora, camphor). William Cullen, *Lectures on the Materia Medica* (Dublin: Thomas Ewing, 1773): 241-243, 418.
80. See note 49. Emetics and cathartics, along with venesection and cupping, were standard therapy to assist in eliminating the offending disease agent and bringing the internal milieu back into balance.
81. This is a jab at the command and staff for being penny wise and pound foolish. Lovell believed the medical officer had a larger role in health care that extended to advising on quarters, clothing, rations, recruiting, and disciplining soldiers, and with these duties came a responsibility to manage public funds carefully. Lovell is pointing out here that to neglect the soldier's quarters, clothing, or rations was false economy.
82. The woolen shirt was to protect from cold and moisture. By the clothing allowance regulation of 1812, enlisted soldiers were issued a wool vest, but shirts were of linen. Kochan and Rickman, *The United States Army, 1812-1815*, 9.

83. The author has not been able to find any quote from Benjamin Franklin concerning flannel. However, flannel binders or belts have a long history as a preventive for dysentery and cholera. William Buchan, MD, a member of the Royal College of Physicians of Edinburgh, phrased his comments on flannel binders similar to Franklin's in 1774: "A flannel waistcoat worn next to the skin has often a very good effect in dysentery. This promotes the perspiration without overheating the body. Great caution is necessary however in leaving it off. I have often known a dysentery brought on by imprudently throwing off a flannel waistcoat before the season was sufficiently warm." E.T. Renbourn, "The History of the Flannel Binder and Cholera Belt," *Medical History* 1 (July 1957): 211-225; William Buchan, *Domestic Medicine or the Family Physician*, 2nd American ed. (Philadelphia: Joseph Cruikshank, 1774), 264. British soldiers were issued flannel waistcoats. Robert Jackson was not convinced that the physical deficiencies incurred by flannel outweighed its benefits. L. Homfray Irving, *Officers of the British Forces in Canada During the War of 1812-15* (Toronto: Well and Tribune Printers, 1908), 246; Robert Jackson, *A Systematic View of the Formation, Discipline, and Economy of Armies* (London: John Stockdale, 1804), 251-253.
84. Outer or greatcoats were not issued to American soldiers during the war. Greatcoats were considered unmilitary in appearance and were not provided to individual soldiers by most armies of the early 19th century. Britain began issuing greatcoats in 1801. Initially, the practice was to provide a limited number of coats per company to be used on guard duty and these were returned to storage at the end of the year. However, by British Army Regulations, 15 July 1812, "every infantry soldier shall be furnished, at the public expense . . . with a greatcoat." René Chartrand, *Uniforms and Equipment of the United States Forces in the War of 1812* (Youngstown, NY: Old Fort Niagara Association, 1992), 31; Irving, *Officers of the British Forces in Canada*, 249. Even so, Jackson commented that the greatcoat was "not esteemed a sufficient defence against the cold at night" and advocated a hooded cloak made in the form of a poncho, of light, durable, warm material that could be water-proofed with grease or oil. Jackson, *A Systematic View*, 257.
85. The soldier's uniform allowance during the war included socks and shoes. Chartrand noted that the regulations specified "Jefferson shoes," which laced and reached no higher than 2 inches above the ankle. Neither Kochan and Rickman nor Chartrand give the soldier's footwear much attention; however, it may be presumed that obtaining shoes and socks was just as difficult as the rest of the uniform. Kochan and Rickman, *The United States Army, 1812-1815*, 9; Chartrand, *Uniforms and Equipment of the United States Forces in the War of 1812*, 47, 50. Lovell may have been familiar with British military surgeon Robert Jackson's comments on the subject: "The feet, which are an essential part of a soldier's body, require to be particularly attended to. They need to be kept warm and dry; for cold and wet feet are frequently causes of sickness. . . . It is within the compass of every man's understanding and most men's experience, that the material of flannel or woolen preserves a more equal temperature of heat than linen, even than cotton." Jackson, *A Systematic View of the Formation, Discipline, and Economy of Armies*, 249.
86. Fur caps and mitts were also issued to British soldiers on duty in Canada. Irving, *Officers of the British Forces in Canada during the War of 1812-15*, 248-249.
87. Rheumatism was pain in the joints and/or muscles that could occur acutely or

chronically, usually in those from the age of puberty to 35 years and of any constitution, although the debilitated were more likely to contract it. The acute form was induced by cold being applied to an over-warm body, or part of the body, made worse if the person's clothes were moist or wet. Lovell is concerned here with acute rheumatism. Cullen, *First Lines*, 155-163; Saunders, *Elements of the Practice of Physic*, 67-68.

88. Rheumatism was considered an inflammatory disease and the acute form could be accompanied by fever. However, it differed from other inflammations in that it was unlikely to progress to suppuration (production of pus). Cullen, *First Lines*, 156-157; Saunders, *Elements of the Practice of Physic*, 67-68.
89. This may indicate that a greater frequency of poor weather conditions, soldier debility, and, perhaps, a larger number of older soldiers in the ranks during the war than in peacetime, combined to produce more rheumatism.
90. "The constitution or condition of the body, which disposes it to the action of disease under the application of an exciting cause."Robley Dunglison, *A Dictionary of Medical Science* (Philadelphia: Lea & Blanchard, 1848), 696.
91. See note 60. Intermittent fever was caused by exposure to marshy miasms by bivouacking in low areas. It was also called "paludial fever," what is known today as malaria. Most of these illnesses were due to infection with *Plasmodium vivax* or *Plasmodium ovale* and usually not fatal in otherwise healthy individuals. Unless one was reinfected, these infections burned out in about 5 years. The more deadly *Plasmodium falciparum* was endemic in the southern United States.
92. The 5th Military Department (or District) consisted of Ohio, Indiana, and the territories that would become Illinois, Michigan, Wisconsin, and Minnesota. *P. vivax* malaria was endemic in Ohio, Indiana, Illinois, and Missouri and occurred sporadically as far north as Maine until the late 19th century. It remained a sporadic public health problem in Illinois and Missouri until the mid-1940s. Malaria was declared eradicated from the United States in 1953. William N. Bispham, *Malaria: Its Diagnosis, Treatment, and Prophylaxis* (Baltimore: Williams & Wilkins, 1944), 5, 9. Fort Detroit, built on the Detroit River, occupied low lying ground conducive to mosquito propagation.
93. The high prevalence of intermittent fever (malaria) among soldiers was due to the highly endemic nature of *Plasmodium* parasites and the large uncontrolled mosquito populations in the United States during this era.
94. Local causes consisted of the miasmas produced by humans and marshes in the area. See note 49.
95. Before knowledge of parasites and insect vectors, methods of reducing susceptibility would have centered on altering and controlling the remote causes (violent passions, studious/anxious life, poisons/abuse of medications, miasmata/contagion, suppression of evacuations, dietary errors, mechanical injury, and cold) of fever. Saunders, *Elements of the Practice of Physic*, 5, 12-13, 22-23. The 1805 edition of Cullen's *First Lines*, edited by Edinburgh physician, John Rotheram, emphasized marsh miasmata, human contagion, and cold as remote causes and suggested that other remote causes merely assisted these three. The implications for reducing susceptibility—proper diet, moderate alcohol consumption, proper exercise, adequate clothing, isolating sick soldiers, and camping on high ground away from swamps—are obvious to the military physician. Cullen, *First Lines*, vol. 1, 46-53.

96. The understanding of a military surgeon's duty concerning disease prevention was evolving in the US Army at this time. Tilton, as did Rush and von Steuben before him, put the responsibility for maintaining soldier health directly upon the line officers; the surgeon had an advisory role, but his duties were focused on the regimental or general hospital. This is a distinctly different philosophy from that of Brocklesby, who saw the surgeon's duty as "the immediate care of, and attention to the health of the regiment and whose office should be . . . the next of importance in every corps after the three Field Officers." Lovell embraced Brocklesby's philosophy. Brocklesby, *Oeconomical Observations*, quote 29-30.
97. See note 95.
98. Treatment consisted of emetics, purgatives, Peruvian bark (cinchona or quinine), and opiates.
99. Accidental causes were those that acted only under certain conditions and did not always produce the same disease.
100. Predisposing causes were those personal attributes that made each individual susceptible to becoming ill. They included debility, qualities of the blood and other fluids, hereditary state of the body, nature of preceding disorders, age, and gender. Saunders, *Elements of the Practice of Physic*, 5.
101. Lovell was defining not only the tactical and operational role of the medical officer, but also his pertinence to the line command and staff.
102. Preventing disease at all levels—regimental, brigade, and division—of the Army.
103. The responsibilities, described in the preceding paragraph, ensured that the medical officer was appropriately and gainfully employed. The reports were also surrogate evaluation reports in that due diligence in filling them out, or lack thereof, would be obvious to the next higher medical officer.
104. See note 54.
105. Lovell is following Brocklesby (note 96) by embracing the prevention implied by medical police, but just as importantly he is embracing the regulatory function of medical police as well. The term medical staff is used broadly here, e.g., division, brigade, or regiment.
106. Lovell most likely was referring to the British service which he may have been familiar with from Robert Jackson's books available at the Library of Boston (see note 31).
107. This passage, "police and interior economy of the camp," refers to the camp's organization, regulation, and inspection for which line officers were responsible.
108. Lovell is advocating educated, experienced line and medical officers, which are possible with a professional standing army. He envisions a career medical officer, which Calhoun also appreciated. For Robert Jackson's comments on the value of experience to medical officers see *A Systematic View of the Formation, Discipline, and Economy of Armies*, vii, 24-26.
109. Lovell is speaking of medical police in the sense of regulations stating duties and responsibilities and issued by a centrally directed medical department.
110. In the absence of regulations the novice military surgeon will create his own rules of conduct through trial and error; another example of false economy (see note 81).
111. The situation (location), climate, and weather at a military post played a significant role in disease etiology and transmission as it was understood during this era (see notes 49 and 50). During his tenure as surgeon general, Lovell ordered the systematized collection of post physical plant and geographical descriptions, climatic information, and weather data by his surgeons. The physical plant and geographical

information developed into regular circulars, such as *Report on Barracks, Hospitals with Descriptions of Military Posts* and *Report on Hygiene*, published by the Surgeon General's Office during the 19th century. The weather information, published as the *Meteorological Register*, became the foundation for the US Weather Bureau established under the direction of Army Medical Department Brevet Brigadier General and Surgeon Albert J. Myer in 1870.

112. Disease symptomatology, when combined with geographic, climatic, and weather data (see note 111), provided the surgeon with all the information required to recognize, understand and describe the etiology and transmission of a given malady. These quarterly epidemiological studies, when reviewed annually, were to provide a "health profile" of each post and, by extension, a health profile of various regions of the country.
113. While geography and climate helped define the nature of disease (notes 118 and 119) found in a region, the individual patient's physical constitution played a large role in the course of, and recovery from, a disease. A person born and raised in the deep south or the west was considered more likely to withstand the illnesses found in these areas than someone from New York or Boston; and when ill the southerner and westerner needed a more vigorous and robust therapeutic intervention, to match their constitutions, than did northerners. See John Harley Warner, *The Therapeutic Perspective: Medical Practice, Knowledge, and Identity in America, 1820-1885* (Cambridge: Harvard, 1986). Lovell's vision for Army medicine also included a better understanding of not only the standard therapeutic regimens of his surgeons, but also new remedies that experience had taught them were of value. This information, once collected and collated, would be published and distributed for the educational benefit of all medical officers.
114. The prescription book was a combination of patient record and record of stores and medicines used. Lovell considered it a valuable document in preparing the annual hospital budget.
115. How an important case was defined is not known.
116. Lovell was stating that medical officers need to analyze and synthesize weather and disease data and provide some reasonable explanation for disease occurrence and best preventive and therapeutic methods. These requirements also proved useful in evaluating surgeon performance (see notes 123).
117. Lovell regarded the data as generalizable to other posts with similar conditions and diseases.
118. Colonel John E. Wool was made Northern Division inspector general in May 1816 and directed to begin inspecting all departmental posts immediately. Brown to Wool, 28 May 1816, Correspondence 1812-19, folder 1, box 7, John E. Wool Papers, New York State Library, Albany. From his reports, it is clear that Wool considered not only hospitals, stores, and equipment under the inspector general's purview, but also medical personnel. These reports, 1816 and 1817, were scathingly critical of many department surgeons for neglect of duty, not to soldier health, but to the government—essentially the American public—for not attending to the maintenance of facilities, equipment, etc. Inspection Reports, 1816-19, vol. 4, box 49, Wool Papers, New York State Library. See also Chap. 2, pp. 32, 33-34.
119. Although in complete agreement with Wool concerning surgeon neglect of duty in maintaining public property (see note 118), Lovell advocated for the medical director of Northern Division to become an inspector of hospitals who, one may presume, was

not subordinate to the inspector general. He points again to a medical establishment whose members function in a quasi-military limbo because they have no central authority to provide organizational structure, e.g. regulations. In advocating for this position, Lovell began to create an autonomous, militarily-structured medical department at the strategic level for General Brown and the Northern Division.

120. This is a request for the division medical director/inspector of hospitals, a staff officer, to have technical command authority over all hospital, garrison, and regimental surgeons and surgeon's mates in the Northern Division. This recommendation, when approved, gave Lovell the authority and autonomy required to create a functional medical department at the strategic and operational levels.
121. Although the technical authority of the medical director over the medical department at the operational level (see note 120) is clearly being reiterated here by the listing of his many duties that affected practice and policy, Lovell is also defining the important strategic role of the medical staff officer to the commander and his staff. It is important to note, however, that the apothecary general, while a member of the medical department, did not fall under the medical director's authority. This would change early in Lovell's tenure as surgeon general.
122. The author is unaware of any medical manual published for all surgeons during Lovell's tenure. Charles S. Tripler published *Manual of the Medical Officer of the United States Army*, *Part I, Recruiting and the Inspection of Recruits* in 1858. Three years later he and George Blackman published *Handbook for the Military Surgeon*.
123. This was the era before annual officer evaluation reports. Lovell, however, recognized this requirement as one method to maintain quality control throughout the department. He evaluated his officers primarily on the timeliness and quality of their quarterly reports, how well they maintained the public property in their charge, and how they managed their annual budgets

Chapter 4

The First US Army Medical Department

Implementing the Blueprint

After President Monroe appointed him the first surgeon general of the Army, in April 1818, Lovell immediately began to implement his organizational and administrative blueprint for the new US Army Medical Department (although he remained in upstate New York until late July before moving to Washington). His main priorities were threefold, and were executed nearly simultaneously. First, he established regular and effective communication with all his surgeons, some of whom served at extremely isolated posts. In late April orders directing how and when post, garrison, and regimental surgeons were to report to the surgeon general's office and the appropriate forms to do so were sent out.[1] Second, Lovell determined the extent and value of the human and physical assets he had inherited. In May, assistant surgeons general Tobias Watkins, in the Northern Division, and James Bronaugh, in the Southern, were ordered to conduct inspections of their divisions. Apothecary General Francis LeBarron, posted in Albany, New York, was also reminded of his fiscal responsibilities and reporting duties.[2]

Third, and most importantly, Lovell composed a new set of regulations for the department. These provided for a technical (ie, medical) chain of command that connected the surgeon general's responsibilities and authority to those of the newest medical attendant at the most isolated post in a clear, concise fashion. The duties and responsibilities of all personnel were clearly defined, and for hospital surgeons and below, many were expanded in scope. Patient record-keeping now required individual case, prescription, and diet books; geographical and meteorological data had to be maintained; accountability for all public property became imperative; and report, disease and casualty return,

and requisition requirements now had to be described. The redundancy, confusion, and jealousy generated by medical titles—hospital, garrison, post, and regimental surgeons and their respective surgeon's mates—began to diminish as titles were consolidated. The title of garrison surgeon was abolished; hospital, post, and regimental surgeons became equivalent in rank and pay; and all surgeon's mates, with the exception of regimental surgeon's mates, became assistant surgeons. Moreover, Lovell made his surgeons aware that they were important public servants responsible not only for the care and maintenance of medical assets purchased with government funds, but also for the troops, the Army's human assets. The surgeon became critical to recruitment by conducting physical examinations of prospective soldiers and determining their smallpox vaccination status. Through these regulations, Lovell redefined the American military physician, initiated a professionalization of the Medical Department, and began the modern transformation of Army medicine.[3] Approved by Secretary of War Calhoun and President Monroe in late September, the regulations were published and distributed by the end of the month.[4]

These three measures allowed Lovell to visualize his department, identify weaknesses and strengths, and begin to gain some measure of fiscal and physical control over it. It became apparent fairly quickly to his surgeons, Calhoun, and line officers that the surgeon general's objective was not merely administrative control, but a complete organizational and operational transformation of the Medical Department. Lovell had new and, for the era, radical expectations of professional expertise and conduct within the department and, equally important, of professional consideration and respect from line officers.

The 1818 Medical Department regulations defined what the depart-ment was and what it did for the Army. However, it was through regular, or as regular as the mail service would allow, correspondence with his hospital and post surgeons, regimental surgeons, and surgeon's mates that Lovell taught, molded, and at times scolded these men into complying with his concept of the modern military medical officer. It was no small task. Many of the routine requirements—ordering supplies, assessing quality control of medicines received, maintaining accountability of medical property, and ensuring contracted civilian physicians were appropriately paid—that Lovell demanded compliance with appeared to have more to do with government financial accounting than with clinical practice. This the surgeon general would not have denied, but as the following excerpt from one of his circular letters

illustrates, he also expected his medical officers to make rational, well-thought-out requests and suggestions:

> I transmit to you a list of the Medicines, hospital stores, bedding, dressings, etc . . . with the quantities allowed by the present Supply Table for a post of one hundred men for one year. You will be pleased to return to this office as soon as practicable, with such alterations as you may think necessary for the supply of that number of men at your present station; erasing those articles not required, and stating your reasons for introducing any new ones, or for altering the quantities at present allowed.[5]

Moreover, Lovell had to continually work to expand his surgeons' clinical vision beyond the individual patient: the surgeon was responsible for the health and care of the troops, individually and in the aggregate. Surgeons had an active role in safeguarding the health of the entire command that required investigation, problem solving, and preventive action. "The simple fact that a certain number of men have died during a quarter can at any time be ascertained at the Adjutant General's Office," Lovell told the surgeon at Oglethorpe Barracks, Savannah, "but something more than this is expected from a Medical Officer who is required to account as far as practicable for the loss of those who may be under his care and direction."[6] To Dr. Joseph Wallace at Annapolis he wrote:

> Your returns and report of sick were received this morning . . . it appears your garrison has been by far more unhealthy than any from which reports have been received. You will be pleased therefore to make a special report, stating what appears to you the causes of this, and especially what produces such a prevalence of Fever and Bilious Colic, and if they depend on any measure upon causes, whose removal is practicable, or whose effects may be counteracted, you will also suggest such means as appear to you necessary for these purposes.[7]

And to Dr. Dunham at Fort Independence, Boston Harbor: "As Diarrhea and Dysentery continue to occupy so conspicuous a place in all your reports of sick; you will please make a special one on the subject, stating the probable causes, so far as you may have discovered them, and suggesting the best means practicable of obviating their effects."[8]

Some surgeons, however, perceived and implemented the more comprehensive role Lovell advocated. Dr. Hansen Catlett at Pittsburgh complained to the surgeon general of the "impropriety of punishing soldiers by protracted confinement in dungeons, by which their health is often materially affected." Lovell commented to Calhoun, "as I considered it a subject appertaining to the duties of a medical officer; he was directed to present the facts, which he has accordingly done in the enclosed letters."[9] Surgeon John Gale of the Rifle Regiment, then deployed with the Yellowstone Expedition[10] on the Missouri River, reported that "diseases proceeded from severe flagellation inflicted on soldiers" and that "company officers dictated often by caprice habitually inflict corporal punishment on their men . . . to such a degree of severity, as frequently requires medical attendance, and often deprives the government for a time of their services."[11] Lovell remarked to Calhoun that he thought the practice of flogging was declining, but "the law referred to is too often violated, and in all cases with manifest injury to the soldiers and the service as well as the officers themselves."[12]

For this broader role of the Army surgeon to become the status quo would require more than diligent work and attention to detail at individual posts. Lovell realized he would have to make a place for his Medical Department at commander's planning tables, where decisions were made throughout the Army. From the beginning of his tenure, Lovell presented a strong, active, and politically astute image in Washington; a man who intuitively understood the power and authority vested in him as a bureau chief, as well as the limitations of serving the Army while not a constituent part of it. His success derived not merely from a close relationship with Calhoun but also from a remarkable ability to impose his will on line commanders through the power of the secretary of war.

When Lieutenant Colonel William MacRae, commander at Norfolk, decided that a recent general order prohibited his surgeon, Dr. Robert Archer, from conducting private practice, Lovell considered Archer not "at all affected by that order," and requested Calhoun to intervene. The secretary did so, directing Adjutant General Daniel Parker to instruct MacRae as Lovell wished.[13]

Dr. Richard Randall, 4th Infantry surgeon, was detained in Baltimore while on his way to Amelia Island by order of the local commander, leaving troops on the island bereft of medical care. "There are two Army Surgeons at or near Baltimore," wrote Lovell to Calhoun, "the necessity of [Dr. Randall] receiving such an order does not therefore appear; nor will it be possible to regulate the concerns of the Medical Department so long as every officer in service considers himself at liberty to stop a

surgeon whenever he chooses to countermand the orders of the Adj. & Insp. Genl . . . I have therefore to request that the present case be investigated and some measure adopted to prevent a recurrence of it in future."[14]

On 2 December 1818, Lovell reported to the secretary of war that several of the Southern Division surgeons had not sent in quarterly reports, although they had been sent regulations, follow up letters, etc. "I have therefore," continued the surgeon general, "to request that orders be sent them through their commanding officers requiring explanation for their *neglect of duty*"[italics added].[15] Lovell was determined that his surgeons, even though they held no military rank, would earn, and be accorded, respect by the line. Their neglect of duty in reporting had the potential to delay this acceptance because it prevented the surgeon general from informing the secretary of war about the Army's health status in an accurate and timely fashion. As will be seen, these reports were one of the surgeon general's most powerful weapons to effect change through the secretary of war.

Like the Northern Division health report for 1817, Lovell's quarterly reports (November, February, May, August) were articulate, factually based, well thought-out, and always proceeded from the post or tactical perspective to the total Army strategic viewpoint. Regrettably, the concept of "population thinking" from an epidemiological perspective,[16] as well as the theory and application of probability, risk, and rates to medical data, were in their infancy in Europe.[17] Therefore, Lovell could only see and interpret the morbidity and mortality of the Army in raw numbers and apply proportions and ratios. However, his use of that data, even in this crude and elementary fashion, was extremely progressive for 1818. The verdict was still out in America on the value of using numerical data to describe medical phenomena, and the numerical method of French physician Pierre C.A. Louis was still a few years in the future.[18] Lovell admitted that any discussion of individual diseases for the second quarter 1818 had to be considered in light of the fact that the numbers represented only about half the regiments and posts, primarily from the Northern Division (Table 1).[19] The first year's submissions highlight Lovell's frustration over the timeliness of reports from the field.

In discussing these numbers, the surgeon general discounted inflammatory fevers as "many unimportant cases as common colds, etc."; the contingencies as "probably for the most part slight complaints"; and wounds as "most . . . probably not serious."[20] What remained were 592 cases or, since they were only half reported, about 1,200 cases of serious disease for the quarter, for an estimated rate of 156.3 cases per 1,000

Table 1. *US Army disease and injury rates, second quarter 1818.*

DISEASE	RAW NUMBER	CASES PER 1,000
Inflammatory fever	229	29.8
Rheumatism	93	12.1
Venereal disease	84	10.9
Wounds	153	19.9
Diarrhea	201	26.2
Dysentery	93	12.1
Typhus fever	29	3.8
Intermittent fever	31	4.0
Remittent fever	61	7.9
"Contingencies" (mild illness)	640	83.3
TOTAL	1,614	210.3

Note: Total Army strength for 1818 was 7,676. Quarterly strength numbers are not available; these rates are based on the assumption that total strength remained fairly constant throughout the year.
Data source: Joseph Lovell, "Report of the Surgeon General to the Secretary of War," 1 November 1818, Microfilm SO2895, National Library of Medicine.

soldiers per quarter. Sixteen deaths were reported for the second quarter. It is interesting that Lovell considered the Army healthy based on this data, when a little over 21% of troops were sick during the quarter.

In his second report, submitted 1 February 1819, third quarter 1818 numbers (Table 2) represented all of the Northern regiments and almost all of the posts, but only the First Infantry and seven posts in the Southern Division. Discussion of cases, treatment, and so forth in this "imperfect" report, as Lovell dubbed it,[21] was limited, with few remarks made by the reporting surgeons. Beginning with this report, Lovell added inflammatory fevers into the mix of more serious disease, which seems to contradict his previous position and causes some confusion about his thinking.

Fourth quarter 1818 health data were presented to the secretary of war in May 1819 as "probably a correct report"; reporting was exceptionally high.[22] A breakout of diseases for first quarter 1819 health data has not survived, and Lovell did not include the quarter's numbers in his text as he had in other reports. He commented that "From the annexed report . . . it appears, not only that the Army has been extremely healthy, and the deaths few, but no one disease has been sufficiently prevalent or strongly marked to require comment."[23]

To understand Lovell's operational and strategic level commentary, these tactical-level numbers must be put into perspective. If the surgeon general's dismissal of second quarter 1818 inflammatory fevers are added in and the total figure of fevers, diarrheas, and dysenteries is doubled

Table 2. *US Army disease and injury rates, third quarter 1818.*

DISEASE	RAW NUMBER	CASES PER 1,000
Typhus fever	64	8.33
Inflammatory fever	424	55.2
Intermittent fever	195	25.4
Remittent fever	163	21.2
Pleurisy	12	1.6
Rheumatism	40	5.2
Diarrhea	231	30.1
Dysentery	395	51.5
Gonorrhea	36	4.7
Syphilis	141	18.4
Wounds	137	17.8
Ulcers	39	5.1
Catarrh	15	2.0
Jaundice	2	0.3
Phthisis	4	0.5
Burns	4	0.5
Contusions	13	1.7
Colic	39	5.1
Contingencies	749	97.6
TOTAL	2,703	352.1

Note: Total Army strength for 1818 was 7,676. Quarterly strength numbers are not available; these rates are based on the assumption that total strength remained fairly constant throughout the year.
Data source: Joseph Lovell, "Report of the Surgeon General to the Secretary of War," 1 November 1818, Microfilm SO2895, National Library of Medicine.

to account for only 50% of posts reporting, then Table 3 illustrates the important diseases affecting the Army, according to Lovell, for the last three quarters of 1818.

Even as the surgeon general watched these disease numbers increase overall, he reassured Secretary of War Calhoun that the Army was healthy—that is, capable of performing its duties—or to put it into 21st century terms, operationally and strategically sound from a health perspective. Intermittent and remittent fevers were endemic; they would occur "whenever men are stationed in those parts of the country subjected to these diseases, but . . . much may be done to prevent them."[24] Lovell remarked that typhus fever (probably referring to typhoid fever)[25] "will always occur; but wherever it prevails it must arise wither from exposure to fatigue in inclement weather without suitable clothing, from impure air in crowded rooms badly ventilated, or from the putrid effluvia of dead

Table 3. *US Army combined fever, diarrhea, and dysentery rates for second, third, and fourth quarters, 1818.*

	2nd Quarter		3rd Quarter		4th Quarter	
Diseases	Raw Numbers	Cases per 1,000	Raw Numbers	Cases per 1,000	Raw Numbers	Cases per 1,000
Typhus, inflammatory, intermittent, and remittent fevers; diarrhea; dysentery	1,288	167.8	1,472	191.8	1,660	216.3

Note: Total Army strength for 1818 was 7,676. Quarterly strength numbers are not available; these rates are based on the assumption that total strength remained fairly constant throughout the year.
Data source: Joseph Lovell, "Report of the Surgeon General to the Secretary of War," 1 November 1818, 1 February 1819, and 1 May 1819. Microfilm SO2895, National Library of Medicine.

animal and vegetable matter."[26] Diarrheas and dysentery Lovell considered "almost exclusively Army diseases and are always the prevalent ones, they demand the principal attention of Army Surgeons. . . . That they depend principally upon some peculiarities in the soldier's mode of life must be obvious from the circumstances that they are at all times the most numerous[27]. . . the immediate causes are in general either irritating matters in the stomach and intestines, or a primary diseased action of the skin; the former arising from improper diet and the latter from undue exposure to the weather, and a deficiency of clothing adapted to the climate."[28] The common inflammatory complaints, his earlier dismissive comments notwithstanding, Lovell noted, "deserve attention not more from their importance than their usual causes, which are undue and too often unnecessary exposure of men to inclemencies [sic] of the weather without sufficient protection."[29]

Lovell's reports, moreover, always contained broader operational and strategic objectives, which not only involved a larger role for the Medical Department, but also significantly impacted the individual soldier and, thereby, the Army as a whole. His comments above were prefatory to the strategic lesson of the quarter—the duties of officers—and it is worth reading at length:

> In fact there is probably no service in which officers appear to pay so little respect to the character of the soldier as in ours, or in which so little attention is given to their comfort, convenience, and health. They are not only put upon menial and fatiguing duties for the

> accommodation of officers but even loaned . . . to the citizens. Young officers particularly are too apt to think only of what will subserve their pleasure and convenience or what fatigue and exposure a man may undergo without immediate danger. An instance of this may be observed in those posts surrounded by water, and which has often been noticed by Surgeons. The bargemen are frequently dispatched . . . without being allowed [breakfast] where they are perhaps detained the greater part of the day, wet and cold, without an extra garment to protect them. . . . Another cause of these complaints arises from want of exertion on the part of officers to procure their men the supplies to which they are entitled . . . considering their duty done if they make out regular requisitions and give themselves no more trouble of the subject. But, the fact is, in the Army as in civil life unless a man gives the necessary attention to his own affairs, he will seldom find his neighbor willing to labour [sic] for him; unless he exerts himself to support his military family, they will in most cases suffer from his neglect . . . too much pains cannot be taken to impress officers with the value of a good soldier, and that in addition to the expense, it requires no small time to render even the best recruit an equivalent for him.[30]

In the second report, the large number of recruits with diarrhea, venereal disease, and chronic, incurable complaints in Baltimore and the 21 deaths reported for the quarter "nearly all . . . caused by excessive intemperance, and several of them recruits just enlisted,"[31] introduced a lecture on the tendency of surgeons and line officers to "continually [load] the army with invalids . . . with scarcely constitution enough left to keep them a month from the grave."[32] Again Lovell's experience and insight are worth quoting at length:

> The management of the recruiting service is and has always been defective because the importance of the duty has not been duly appreciated by officers of any grade. A man has too often been made a recruiting officer merely because he is fit for nothing else, or for his own convenience, it being considered a kind of accommodating furlough, a license to frolic rather than an order for duty. The fact however undoubtedly is that the most active and intelligent officers should be employed and the most experienced and faithful Surgeons stationed at every important recruiting rendezvous. . . . An officer on the recruiting service should consider himself detailed for a separate and responsible command, and unless he be brought up to think this

> duty an important one it will not in general be faithfully performed; the effects of error or negligence are usually remote from the causes both as to time and place to be correctly traced . . . [therefore] the public can look for security only to [the officer's] integrity and the correctness of his views of the duty in which he is engaged. Besides the reputation as well as the efficiency of the Army is intimately connected with this subject; for the mass of the people know little of the Army but what they learn from recruiting parties.[33]

This was an era when poor-quality or damaged food, particularly wheat flour, was considered an "exciting," or potential, cause of disease, and possibly death when combined with another causal agent. Furthermore, a person who was accustomed by habit to a certain diet could suffer great injury and death through a sudden change in dietary content or habits. Therefore, Lovell also perceived a role for the military physician in soldier subsistence. He offered some of his earliest comments on this issue[34] to the secretary of war in August 1818, but had prepared a more formal report by mid-November.[35]

Although negligence by recruits in learning to prepare their provided rations was noted by the surgeon general, his real concern was with the content of the Army ration:

> When a recruit receives his ration, if the meat is fresh, he broils it to a cinder on the coals on the end of his ramrod; if salt pork he eats it raw; and if salt beef, he boils it, and with his bread will make a pretty good meal for some time, but in the morning and evening he feels the want of his usual infusion of tea, and at noon of his customary supply of vegetables. As a substitute for the former, he warms the stomach with a gill of undiluted, corroding whiskey; and, after living a few weeks in this way, is sent to the surgeon worn down with dysentery, diarrhea, and other complaints of the stomach and bowels: if the surgeon be sufficiently acquainted with his duty to give him a light diet of soup, fresh vegetables, and hospital stores, instead of loading him with medicine, he is shortly restored to health, and from the same causes as before, is shortly returned to the hospital, and after being for some months a burden to himself and the community he is either buried or discharged service, and perhaps pensioned. This is a process which everyone on duty, during the late war, has repeatedly witnessed; which occurred with the majority of those enlisted; and which rendered the muster rolls of the army a mere list of invalids.[36]

Table 4. *Daily soldier's ration in the American, British, and French armies, 1818.*

AMERICAN	BRITISH	FRENCH
Flour, 18 oz.	Flour or bread, 24 oz.	Bread, 24 1/10 oz.
Beef, 20 oz.	Beef, 16 oz., or pork, 8 oz.	Biscuit, 17¾ oz.
Pork, 12 oz.	Peas, 1 gill	Salt beef/salt pork, 6½ oz.
Whiskey, 1 gill	Flour or bread, 24 oz.	Rice, 1 oz.
	Butter/cheese, 1 oz.	Wine, 2 gills
	Rice, 1 oz.	Brandy, ½ gill

Reproduced from: Joseph Lovell, "Medical Economy," *National Intelligencer*, 24 October 1819.

Lovell compared the American ration to those of French and British armies (Table 4) to drive home his initial point; then, true to form, he elevated the discussion to an operational level. He lambasted sutlers on general principles, saving his most acidic comments for the officers:

> From the want of proper and regular supplies . . . the important subject of messing has been almost entirely neglected. An officer instead of finding his regimental mess a comfortable home, in which he feels an interest, and which he is pleased to return, submits with reluctance to a few months of privation and hardship, and then commences his operation to effect a retreat to the interior, and leaves his place to be temporarily supplied by another equally discontented sojourner. . . . Those commanders who have made the greatest progress in regimental police have the least trouble. . . . The camp at French Mills, in the fall of 1813, was sufficient proof that the comforts of officers are of no small importance to the public; for, as soon as they found themselves in the wilderness, without houses or food, they not only quitted their posts upon the most trifling pretenses, but many, who would have faced the enemy with pleasure, fled from privation in a manner that came little short of desertion. After what has been observed upon the nature of the ration the necessity of the regimental grocery, for the health as well as comfort both of officers and men, will not probably require further proof.[37]

Lovell advocated kiln-dried corn meal that could be made into hard biscuits, which kept longer and were more nutritious than biscuits made of wheat; bacon in place of salt pork; and a reduction in the meat portion overall. Peas, beans, and rice were to replace the portion of meat lost.

He also suggested the whiskey ration be replaced with beer, spruce beer, or molasses and water, and recommended that vinegar be added as a condiment on vegetables (cabbage, cucumbers, etc), as the men were used to eating it at home.[38]

Secretary of War Calhoun used Lovell's study of rations in his eloquent defense of maintaining the current strength of the Army to Congress on 11 December 1818.[39] During that year, a rise of traditional Republican antimilitarism; outrage at Andrew Jackson's invasion of Florida and subsequent execution of two British subjects[40]; the efforts of William Crawford, Henry Clay, and their supporters to gain political ascendance over James Monroe and Calhoun; and a national economic panic that would turn into depression in 1819[41] all factored into a movement to reduce the peacetime military establishment.

Congress haggled over the size of the Army and its cost for the next 2 years. Congressmen continually badgered the secretary of war to reduce expenditures, particularly the Yellowstone River Expedition. Calhoun responded by working diligently with his bureau chiefs to tighten War Department purse strings without allowing the Army to deteriorate. In this endeavor, Lovell set the tone for frugality in his department. When asked how much space and furniture the Medical Department required in the new War Department building, Lovell requested two rooms, a table for him, a suitable case for the papers and books[42] of the office, and six chairs.[43] More importantly, he demonstrated that quality and effectiveness of service did not have to be sacrificed to fiscal discipline and efficiency. To the contrary, Lovell used fiscal constraint to educate medical and line officers and to solidify his authority as surgeon general.

Estimating annual medical costs was a new concern for surgeons and commanders and one of critical importance in 1818. Accurate estimates included expenditures for repair or replacement of existing facilities; medicines, hospital stores, supplies, and transportation of these items; hospital matrons and civilian physicians; and extra pay for hospital stewards. Also, medical officers were responsible not only for obtaining civilian medical services at their posts when no medical officer was available, but also for ensuring payment of these services through a fairly negotiated contract, which was forwarded to the adjutant general.[44] Who was and was not eligible for care was also strictly accounted for. Lovell wrote to Major P. Dalaby that

> whenever a citizen Surgeon is employed to attend a post . . . he is to be allowed pay according to the number of men and women—sixty

> men, for example, and forty women will entitle him to forty dollars per month. Medicine to be furnished the women and children; but he directs that Hospital Stores be allowed only to the men actually in the service of the U. States. Hired mechanics and their families are not entitled to Medical attendance from the United States.[45]

Lovell did not tolerate inappropriate expenditure or accounting of department resources. When Apothecary General LeBaron exceeded his 1818 disbursement by $22,000, he received a stern rebuke from the surgeon general and a lesson on how the apothecary department's books should appear.[46] Lovell wrote to Dr. Robert Archer that the bill submitted by a civilian physician for $50 for attending an infantry detachment at that post "appears to me to be unreasonable."[47] Archer was to report on the usual fees in his vicinity and whether medical care could have been obtained at a more reasonable rate. Dr. James Mann, Lovell's mentor and chief surgeon in the field during the war, failed to account properly for medicine and hospital store receipts. He was told by the surgeon general that "unless the regulations be complied with in relation to the requisition for extra supplies which are to be made agreeably to the supply table any monies paid on that account will be charged to you."[48]

In his fourth report to the secretary of war, 1 August 1819, Lovell returned to an old theme, underreporting from the field. The thrust of his concerns, however, was not so much with uncooperative post and regimental medical officers as with the lackluster performance of his assistant surgeons general.

It is clear from the 1817 medical report that Lovell recognized the need for a medical director for each division to oversee medical operations, inspect hospitals, and report to and advise the division commander and surgeon general. Instead, in April 1818 Congress forced Calhoun to accept two assistant surgeons general who were not part of either division staff, but instead were to (literally) assist the surgeon general. Correspondence between Calhoun and Brown concerning the location and duties of, and Lovell's directives to, the assistant surgeons general indicate that all three men were attempting to employ the assistant surgeons general as divisional medical directors.[49] It also appears that neither Dr. Watkins nor Dr. Bronaugh understood that their positions were more than political sinecures. Watkins served Brown's Northern Division, headquartered in Brownville, in upstate New York, from Baltimore.[50] The survey he made of hospitals in the late summer and fall of 1818 never made it to Lovell's desk, and Bronaugh appears never to have conducted the survey at all.

Lovell commented to Calhoun that the presence and "advice of an industrious and well qualified Medical Director would be of greatest benefit to the service"[51] for assisting the junior physicians with disease investigations. He then listed the non-reporting surgeons of the Southern Division and commented, "This has probably arisen on some measure from an order which . . . has been issued that reports intended for this office shall pass thro' the hands of the Assistant Surgeon General; an arrangement which will render it utterly impossible for the Surgeon General to receive the reports and returns of the Surgeons and Mates, within any reasonable time, as is proved by the result."[52]

Calhoun responded by writing directly to Major General Jackson:

> It is not my intention to make this an official communication, but merely to call your attention to the state of the Medical Department of your Division. You will perceive on reading the [surgeon general's] report, that in many particulars the orders and regulations of the Depart-ment have not been complied with. No report has yet been received in conformity with the Department order of the 21st of April 1818 and the orders of the Surgeon General of the 24th . . . and the 4th of September . . . It would seem . . . that the cause of this delay has been, at least in part, a Division order by which such reports are ordered to pass through . . . Assistant Surgeon General [Bronaugh].[53]

Jackson took responsibility for the delays, stating he had shifted the routing of the reports so he could remain informed of the health of his command, but had not intended to interfere with the surgeon general's office. He sent the reports immediately to Calhoun.[54] Soon after, Bronaugh reported that the order in question had never been issued. However, he had discussed some of his managerial problems with Jackson with the result that department commanding officers were prohibited from changing stations of surgeons, granting them furloughs, or assigning them non-medical duties except in emergencies. Furthermore, Jackson directed all surgeons to account for reporting delays to the surgeon general.[55]

In December 1820, Secretary of War Calhoun submitted to Congress his plan to reduce the size of the regular Army to 6,000 enlisted men. The plan called for a nucleus of well-trained and disciplined artillery and infantry regiments to garrison posts and act as a light defensive force. Upon threat of war, militia units would augment this experienced cadre, rapidly expanding their companies to full strength (19,000).[56]

The following March, Congress approved an act for the "Military Peace Establishment of the United States," a watered-down version of the plan: enlisted ranks reduced by half to 5,586, but officers reduced only by a fifth, 674 to 540. The Army would consist of seven infantry and four artillery regiments. Eastern and western departments, rather than northern and southern, were created, with a brigadier general commanding in each, Winfield Scott and Edmund P. Gaines, respectively. One major general, Jacob Jennings Brown, would be retained as commanding general of the Army.[57]

Section 10 of the act stated: "That the Medical Department shall consist of one surgeon general, eight surgeons with the compensation of regimental surgeons and forty-five assistant surgeons with the compensation of post surgeons."[58] This reorganization brought about the discharge of some 95 medical officers, the apothecary general, and his assistants. The office of assistant surgeon general was changed to that of medical director of department, and the duties of the apothecaries were assigned to medical officers detailed to the purveying department.[59] The act also called for the examination of all medical officer candidates by a board of three medical officers. However, during the 1820s Medical Department personnel losses and accessions were very small, and therefore this provision did not go into effect until July 1832.[60]

This 44% reduction in the Medical Department force did not deter Lovell's organizational and professional objectives, but rather assisted his efforts to consolidate and solidify his department, at least early on. The new organization did away with the divisive professional distinctions between regimental, garrison, and post surgeons. It removed the very real potential of competition—that is, playing power politics with the secretary of war and others in Washington—by the apothecary general and assistant surgeons general.[61] Furthermore, it reduced Lovell's administrative housekeeping chores significantly, allowing him to more effectively and efficiently run the department. Only later, as the number of military posts increased, would the reduction in personnel be felt.

The surgeon general's reports to the secretary of war reflect a greater regularity of effort from surgeons in the field, and perhaps a more efficient mail service, beginning in 1821. Official reports from the field allowed Lovell to describe the most common diseases of the Army (intermittent and remittent fevers, typhoid fever, diarrheas, dysentery, and scurvy), health conditions at the various posts, and the status of his surgeons with more accuracy. Just as importantly, the reports and the personal letters often accompanying them provided him, and the historian, with a window into the minds, concerns, and actions of his officers.

Dr. Mann reported the condition of the Hospital at Fort Independence to be such as to "require a new one as soon as practicable, & that the sick are so much exposed to the enclemencies of the weather as to render immediate repairs necessary."[62] Dr. Benjamin F. Harney stated the "necessity of erecting a Hospital at Baton Rouge as soon as practicable," and Lovell recommended to Calhoun that Harney "be consulted as to the plan & position of the building."[63] "I state to you explicitly," wrote Harney in March 1823, "that it will be absolutely necessary to remove the troops at this post, some 12 or 15 miles from this place into the Pine Woods. This can be done without expence to the Government & is necessary because the Garrison will be composed, after June, almost entirely of men not acclimated & because of the ill construction of the Barracks."[64]

Harney also suggested the "propriety of giving to soldiers employed in the Hospital Depart-ment: as Stewards, Waiters, etc. 'additional pay. . . . The duties of Hospital Stewards and Waiters are undoubtedly the most disagree-able of all the duties required of a Soldier, they are exposed frequently, to contagious and other diseases, which not only endanger their health at the time, but frequently ultimates in Chronic and other diseases which sooner or later terminate in death. . . . It is absolutely necessary, in justice to the sick to have good, humane and sober men as Waiters, and if such men doing the most disagreeable of all the duties of a soldier, are not justly entitled to the scanty extra pay given to the soldier at common labor it certainly will be deemed passing strange."[65]

Establishing a private practice to provide additional income and add a modicum of variety to daily medical practice in the Army was also a high priority to post surgeons. Army regulations prohibited private practice as a general rule, but Lovell was extremely liberal in granting permission[66] to do so to his surgeons, as long as it did not interfere with official duties and government medicines and supplies were not used. The most important concerns for Lovell's surgeons, however, were founded upon a desire for respect and acceptance, a recognition of the dignity of their office and service, and proper compensation for the difficult and sometimes dangerous work performed. Joseph Eaton, assistant surgeon at Fort Preble near Portland, Maine, addressed these concerns so eloquently to Lovell in 1819 that his letter must be quoted at length:

> It is confessed by everyone, acquainted with the duty, responsibility, and peculiar situation of the surgeons, that there are no officers in the Army whose services receive so small a compensation.

In the first place, officers of the line are educated at public expense at the military school, and even receive pay while they are qualifying themselves for commissions in the Army or are taken from among the citizens without any qualification whatever. But surgeons must qualify themselves previously to their entering the service. . . . Secondly, by the abolition of the hospital department, the prospect of promotion to the surgeon is almost entirely cut off, while officers of the line are continually advancing in preferment and honor. Thirdly, an inconvenience which is by no means pleasant to a medical officer who has served for a considerable length of time in the army is, that he has no rank and is liable to be subjected to the orders of every officer of the line of yesterday's creation and of the most inferior grade.

* * *

If I wish for permission to leave this post for a few weeks, I must ask it of the commanding officer of the post and he again must make application to the General comdg. the department, who requires me to employ a surgeon, at my own expense to attend the garrison in my absence.

* * *

You must well recollect, sir, the arbitrary imperious and overbearing conduct of some officers towards the surgeons during the late war, and it is well known at the present day, that many are willing, that a surgeon should be considered as a servant of servants.

It would seem a thing perfectly impossible for a person unacquainted with the profession, to know how to direct the peculiar duties of the surgeon, and I cannot express the happiness I should experience in being subject only to officers of my own department. The head of the medical department is, undoubtedly, better qualified to make judicious appointments in his department than any other officer in service. And would it be inconsistent that the senior medical officer in each department should have control of the surgeons in that department? If we can have no rank with officers of the line why should we be subject to the orders of every one of the most inferior grade?

We are at all times liable to be called into actual service, in places the most distant from our relations and friends, to forgo the pleasures and comforts of life, and subject ourselves to labours, fatigues and perils of every kind. To this would I submit with alacrity and cheerfulness, provided I could equally participate with the other

> officers of the army, in the respect, honors & just rewards bestowed by our country.
>
> From the liberal policy and enlightened & comprehensive views of the Hon. Secretary of War, I have every reason to believe that he will aid your exertions to effect some reform. But Sir on you must we principally depend for any improvement in our condition. . . . The Surgeons are in duty bound to acknowledge themselves greatly indebted to you for our indefatigable labours and persevering exertions thus far for the honor and respectability of the medical department.[67]

Although they could become a bit petulant, particularly concerning departmental promotion, seniority, and change of station,[68] Lovell's surgeons, by and large, were honest, forthright, practical, unselfish, and intelligent public servants. They depended upon, trusted, and responded to the surgeon general's guidance and leadership to steer a progressive course for the new Medical Department.

Daily Affairs in Washington

"I am rejoiced to find you stand so well with and think so highly of the Administration at Washington. This is as it should be, and I hope it may long continue."[69] So wrote Major General Brown to Lovell in early January 1819. From all appearances Joseph Lovell immediately fit into both Washington's official and social life. Not only were he and the secretary of war close colleagues, but Lovell was also the Calhoun family physician.[70] Lovell was a member of the Medical Society of the District of Columbia, serving on its board of examiners in 1822, 1825, and 1834–1835 and as vice-president in 1826. He was a founding member of the Medical Association of the District of Columbia[71] and a member of the Phrenological Society[72] and the Columbian Institute.[73]

According to Margaret Bayard Smith, wife of bank president Samuel Harrison Smith and a commentator on early Washington society, Margaret Lovell became an integral part of the ladies' circle and social activities.[74] As the Lovell family grew, the children's names provide some evidence of who the Lovell's close friends were during their 18-year tenure in Washington: John MacPherson Berrien,[75] William Farley Storrow,[76] Sarah Augusta Porter,[77] and Floride Calhoun Lovell.[78]

Initially, the Lovells lived on the southwest corner of F and 12th Streets, NW.[79] In 1824 Lovell purchased a lot from the Stephen Decatur estate[80] at No. 4 President's Square (now 1651 Pennsylvania Avenue), just

across the street from the Executive Mansion. That summer, he had a spacious 2½-story Federal-style home built.[81] Although the identity of the architect is unclear,[82] the simple beauty, elegance, and functionality of the house speak to the architect's talent and to the taste and intentions of the Lovells. The north and south parlors, with matching mottled-grey marble mantles, and adjoining north dining room could be opened for large entertaining or closed by folding doors for more intimate gatherings. Here a variety of politicians, military and naval officers, bankers, businessmen, artists, and socialites of renown in Washington were entertained. Here the surgeon general and his lady could be charming hosts, courtiers, and politicians, ensuring the efficacy of his tenure in a pleasant venue.

More importantly, this house, with its spacious parlors, comfortable bedrooms, and nursery was a welcoming home. Its halls, undoubtedly cluttered with forgotten toys and dolls, initially echoed with the sounds of five young Lovells, ranging in age from 6 years to 2 months. Margaret would deliver another six children there over the next 12 years.[83] From this home too the Lovells watched the Marquis de Lafayette's procession during his celebratory visit to the United States in October 1824 and President Andrew Jackson's inaugural procession in March 1829.[84]

Sustaining Army Medicine

At the end of October 1825, Lovell wrote to the new secretary of war, James Barbour[85]: "All officers of the Medical Staff are on duty, or under orders for their respective stations . . . and the reports from various sources, official and unofficial, concur with the trifling bill of mortality in showing that a faithful and diligent attention to duty has been, with scarce an exception, added to no ordinary degree of professional talent and acquirement."[86] These few words represent 7½ years of diligent, persistent, well-organized, and well-directed work by the surgeon general and a responsible, supportive corps of medical officers. They represent an organizational and administrative success that created a sound foundation upon which a modern, professional Army Medical Department could grow and develop. Lovell's vision, described in the 1817 sick report, had become a reality.

To sustain this victory, Lovell had to demonstrate to Congress that the Medical Department was not merely a valuable adjunct to the Army, but absolutely indispensable to its purpose. Simultaneously, he had to convince Congressmen that this indispensability required competent physicians, who could not be obtained and maintained without higher compensation. These were no small tasks in the face of congressional

parsimony, perennial suspicion of a standing army, and less than robust respect for the medical profession. With vigilance and finesse, Lovell continued to follow his 1818 plan in this endeavor.

In Lovell's system, or medical police, the first glimmer of organized, scientifically based military public health can be discerned. American medicine at this time was guided predominantly by the epidemic disease theories of Benjamin Rush and the epidemiological ideas of Noah Webster. These were based on the relative potencies of contagion, miasmas generated from the decomposition of organic matter, and the epidemic constitution of the atmosphere. Although these ideas originated in the late 17th century, they remained the scientific basis of early 19th century medical practice. Lovell applied this science by mandating that his surgeons collect meteorological data, investigate the relationship of disease incidence to climate and weather, and provide recommendations on the health of Army posts based on these descriptive epidemiologic studies.[87]

Moreover, Lovell's surgeons were providing scientific information useful not only to the Army but also to an inquisitive and growing nation as westward expansion increased. A committee of the Columbian Institute expanded the data-gathering role of Army surgeons in the spring of 1826 by requesting that they gather "seeds, plants, minerals, fossils, or whatever may be deemed useful and interesting, for preservation . . . and also to transmit such remarks relative to the habits, localities, and history of the several specimens as may be thought necessary to a scientific classification of them."[88]

As noted above, Lovell was progressive in his attempts to describe disease and injury data numerically, incomplete reporting notwithstanding. His format for data collection, however, was never standardized by disease entry and did not require the use of "0" as a place holder. Therefore, a disease, injury, or condition may or may not be reported, but whether there had or had not been an occurrence was not clear. Furthermore, it appears Lovell did not count total cases, but rather enumerated cases by fatal and non-fatal outcomes. He summarized and compared his data quarterly, most likely because he did not believe aggregate annual data would render any more information. He clearly recognized that the biggest disease problems Army-wide were intermittent fever (averaging 2,164 cases per year from 1820 to 1829 and accounting for 62% of all reported fevers), followed closely by diarrhea/dysentery. Serious upper respiratory complaints were a distant third.

Of these diseases only intermittent fever had a specific therapy, cinchona bark (crude quinine), or the newly purified version of the

alkaloid, quinine sulphate. Quinine was isolated from cinchona bark in 1820 by two French pharmacists, Joseph Caventou and Pierre Pellatier.[89] Five years later physicians in Philadelphia were using quinine sulfate regularly for intermittent fevers. Benjamin Harney, then at Fort Snelling, Minnesota Territory, told Lovell that his 1826 drug requisition included quinine because he considered it to be "from experience . . . more valuable in cases of Fever . . . than Bark in all its other forms. . . . It can not be said, correctly, that Sulph. Quinine is an expensive article. . . . [In intermittent fever] after proper evacuation, 27 or 33 Grains is a certain cure (I had almost said specific), and is, consequently less expensive than Bark in any other form."[90] Later in 1826, Assistant Surgeon Robert C. Wood, also at Fort Snelling, wrote to the surgeon general that "In consequence of the annual number of cases of fever and ague at this post the past season I purchased some sulphate of Quinine."[91] The popularity of quinine sulfate for treating intermittent fevers continued to increase, but so did its price, inducing Lovell to limit quinine requisitions.[92] In 1828, he informed his officers that "the quantity of Sulph. Quinine has been reduced and that of the Bark increased as the former is not supplied as a general substitute for the latter, but only in such quantities as may be required for special cases."[93]

Lovell also mandated vaccination against smallpox, a relatively new technique,[94] for all soldiers and recruits no matter the budgetary constraints. In early 1826 Lovell responded to queries from Secretary of War Barbour and Congress concerning vaccination regulations and procedures: according to paragraph 1268 of the Army Regulations, it was the duty of the surgeon to inquire whether each recruit who arrived at a recruiting depot or garrison station had been sick with smallpox or received the vaccination. All surgeons could request a fresh supply of the vaccine matter at any time from the surgeon general's office. This had cost the department an average of $60 per year since 1818.[95] The surgeon general's persistence, and his surgeons' cooperation, made smallpox a very rare event in the Army during his tenure.

The health of the Army, however, could not be secured through therapeutic intervention alone. Lovell had a very broad concept for preventing disease and injury in the Army that included not only the proper selection of recruits, but also training them how to live and work in camp over the first 12 to 18 months of service.[96] Army duties and living conditions in the 1820s presented a variety of occupational hazards. The more obvious, such as overcrowded barracks, makeshift hospitals converted from other buildings, and both barracks and

hospitals inadequate due to disrepair, were commented upon regularly by surgeons as contributors to disease. Knowledge of the less obvious hazards constituted part of the "minutiae," which required time, study, and experience to acquire, that Lovell noted in his 1817 report. Ophthalmia or inflammation of the eyes (conjunctivitis) appears to have become a reportable event in 1824. Surgeons from a large number of stations reported cases and suggested that the bill of the regulation headgear did not provide sufficient protection from sunlight.[97] Lovell reported to Calhoun that the "frequent occurrence of . . . Nyctalopia, or night blindness . . . in consequence of indirect debility; and the nature of the symptoms attending the cases of ophthalmia . . . render this extremely probable. I would therefore respectfully suggest the propriety of making a suitable alteration in this article; and also in the uniform cap, the brim of which should be much deeper, especially at the sides or ends."[98]

An astute surgeon at Fort Delaware, Samuel B. Smith, reported increasing cases of inflammation of the intestines accompanied by symptoms of lead poisoning in late 1826.[99] Smith supposed these cases arose from "drinking water conducted into cisterns from an extensive and badly painted roof."[100] From Fortress Monroe, Virginia, the following year, Dr. Josiah Everett reported the use of "sheet lead for covering the furnaces in the kitchens of two . . . companies [and] . . . the covers of the boilers and these being painted over before each weekly inspection proved most disastrous in its consequences . . . Colic, paralysis, and ulcers in their most frightful and obstinate forms appeared in more than twenty cases in those two companies, the health of all was much impaired, one death ensued, and several linger in a most wretched state."[101]

Lead poisoning, known clinically as "painter's colic," from consuming water or, more commonly, distilled spirits laced with lead, or from inspiring lead-laden fumes was more likely to occur in Lovell's era. However, a soldier routinely risked exposure while preparing for inspection. Surgeon Alfred W. Elwes at New Castle, Delaware, presented three soldiers for discharge in a letter to Lovell in November 1831 due to paralysis secondary to lead exposure.[102] The following day Lovell wrote to Major General Alexander Macomb:

> Several men have recently been discharged . . . paralyzed and crippled for life in consequence of the use (perhaps the abuse) of white lead in cleaning their belts and gloves. Others have been rendered unfit for service by the painters or lead colic which has been traced to the same cause; as both have ceased where the use of lead has been discontinued. In addition to the loss of good men . . . and

> the severe sufferings of those affected . . . it is probable that much disease and many disabilities are produced in the Army by this cause, without being of a sufficiently marked character to attract attention. . . . Therefore, I suggest the propriety of restraining or prohibiting the use of this poison generally and substituting another [substance] as has been done at some of the posts.[103]

During the second half of the 1820s, it appears that applicants for the Army became more plentiful, allowing the General Recruiting Service and individual regiments to bring troop levels to full strength.[104] During these same years Lovell discerned an increase in consumptives and drunkards, raising his concerns to Secretary of War Barbour in the spring of 1826.[105] The following February, he told Barbour:

> The Surgeon [Benjamin Harney] at Jefferson Barracks reports that the utmost inattention must have been practiced in the enlistment of many of the recruits lately sent to this post, and . . . unless some additional and severe regulation be made our Army will be in a short time but a Corps of Invalids and as reports of a similar character have been received from other posts, I have to propose that an order be issued directing the commanding officer to require the Surgeon to make a strict examination of the men referred to and to report the cause, degree and duration of the disability in each case and to transmit it with a statement of time when, the place where, and the person by whom they were severally enlisted.[106]

According to Harney and his colleagues, recruiters were signing on not only sick and disabled men, but also the intemperate, and giving little attention to vaccination regulations.[107] Lovell told Barbour in March 1828 that the money lost from the "frequent enlistment and discharge of diseased men in consequence of the careless examination of recruits is probably nearly equal to the compensation of the additional number of Surgeons that would be required."[108]

Although new accessions may have been increasing, desertions were also on the rise, and in 1826 they amounted to more than half of new enlistments.[109] Army posts were, in general, dull and monotonous, with the routine boredom being punctuated by moments of dangerous duty. The monthly pay for a private was $5 until 1833, when it increased to $6.[110] Soldiers found relief from the tedium of Army life in local brothels,[111] if the post was near a town, as well as in the distributed whiskey ration or liquor purchased from the sutler (with the commander's

permission) or "from the innumerable hosts of hucksters who infest almost every military post."[112] Mortality from alcohol intoxication was of tremendous concern during that era. One surgeon reported to Lovell in April 1825, "I have reported one death by consumption, brought on by intemperance which has been the cause of the death of every soldier that has died since I have been stationed at this post, excepting one. The constant and excessive use of whiskey . . . is . . . the source of almost all the sickness and all the difficulties which take place in the Army."[113] Another complained to Lovell that he was constantly required to reenlist drunkards, an occurrence so frequent that to remain silent any longer would be a "dereliction of duty."[114] Lovell reported 15 alcohol related deaths in 1824, a number that would double in 1825, and commented that of the 108 hospital patients discharged from the service "in consequence of incurable complaints," most were alcohol related.[115]

By the time Congress asked Secretary of War Peter B. Porter to obtain opinions on the effects of spirituous liquors on the health, morals, and discipline of soldiers, on 14 January 1829, the temperance movement, which advocated complete abstinence from alcohol of any kind, was in full stride in America.[116] However, the comments of Commanding General Alexander Macomb, Commissary General George Gibson, and Lovell to Porter reflect none of that movement's harsh intolerance. Macomb advocated abolishing whiskey from the ration based on the deleterious effects of habitual over-indulgence and the dangers of forming bad habits in impressionable young recruits, but was not against sutlers selling alcohol. Furthermore, he recognized that medical doctrine advocated a "wee dram" for soldiers on fatigue details, especially in poor weather, as beneficial to their health.[117] Gibson, while neither for nor against whiskey in the ration, was more concerned about civilian sales of spirits to soldiers.[118] Lovell recognized both the promiscuous sale of whiskey to soldiers by civilians and the continual reenlistment of drunkards as the primary cause of intemperance, not the whiskey ration.[119] Lovell also noted that to change the "common drink" of the social class composing the enlisted ranks would be "formidable," and that a physician who attempts to do so "even when life, health, and reputation are at stake" would have to make alterations in the "entire habits and diet of his patient, or to substitute a less dangerous excitant of a torpid and inactive stomach."[120] These professional remarks are interesting in that they reveal the era's lack of digestive physiological knowledge, a deficiency that was currently being addressed by Army surgeon William Beaumont with Lovell's full support.[121]

Whiskey was not deleted from the soldier's ration until 1832.[122] This victory for temperance came in the same year that Congress approved more positions for surgeons and assistant surgeons, and Lovell intensified his efforts to obtain higher pay for them.

Winning the political and economic battle for more positions and higher pay was one of Lovell's most significant achievements for Medical Department officers. Lovell declined to engage the Army and Congress in a battle over military rank for medical officers as a means of increasing pay and status. Instead, he sought to raise surgeon and assistant surgeon pay and emoluments to levels commensurate with line officers for equivalent time in service. This action by the government was calculated to demonstrate recognition of the military surgeon's value, assist in retention of personnel, and, hopefully, attract younger physicians to the service. By the time this 9-year battle was won, Lovell would have to defend nearly every penny spent by the department and even his own position as surgeon general.

On 15 November 1825 Lovell presented Secretary of War Barbour with the following plan of action to gradually increase pay and rations of his officers in proportion to their years of service:

> Assistant Surgeons on their first appointment, $40 per month and two rations per day; to those who shall have served five years, $50 and three rations; and to those who shall have served ten years, $60 and four rations. To the Surgeons on their first appointment $70 and five Rations; to those who shall have served five years, $80 and six rations, and to those who shall have served ten years $90 and seven Rations. . . . This principle I believe to have been adopted by other services for the obvious reason that the Medical Staff have no rank and can seldom expect promotion. The senior Col & Major in our service, and with a single exception the Senior Captains, have been but 12 or 13 years in their respective grades, and yet all of them, as well as the two Brigadier Generals and many of the Lieutenants have been advanced an additional grade by brevet,[123] while the Senior Assistant Surgeon after a service of 18 or 19 years have the same rank and receive precisely the same pay as at their first appointment . . . and the Senior Surgeon received but $11 per month more than the youngest Assistant. . . . In fact the bare granting brevets for ten years service in the same grade, shows that . . . the ordinary and regular path to promotion was not deemed sufficient encouragement, or reward for the officers of the line; while the Surgeons are left with

> no other incentive to the correct performance of their duties, save a scanty subsistence, and the consciousness of right which they may possess in common with others. . . . This principle of progressive reward . . . is . . . a correct one; nor can it be perceived why it is not in every respect as applicable to the surgeons as the officers of the line. . . . Indeed, as far as the public interest is concerned, it appears to be more particularly applicable to this branch of the Staffs, for in the medical profession in a special manner, age is Wisdom, and by being compensated in proportion to the former, the surgeon received but a fair equivalent for his increase in the latter; since should he leave the service, after having used the Army as a school of practice . . . his place must be supplied by a comparative novice; while in the line some equally experienced officer takes the place of his predecessor, in regular gradation, from the General to the graduated Cadet.[124]

In 1827 the pay and rations of captains and lieutenants were increased, leaving the surgeons as the "only subordinate officers in the Army whose pay has not been increased and who have no prospect of increase for life."[125]

Beginning in early January 1830 and extending through the year, Lovell defended not only the number of officers and their pay through the new secretary of war, John Henry Eaton, to the Military Committee of the House, but also contended that through sound and efficient administration the department had reduced expenditures across the board over the past 12 years.[126] However, by year's end Eaton reported to the committee that "the Surgeon General of the Army might be dispensed with. He has no disbursements to superintend or make, no bonds to receive, no accounts to revise or responsibilities to encounter."[127] Lovell deftly refuted Eaton's claims and demonstrated that the reorganization of personnel and methods for purveying and distributing pharmaceuticals, medical equipment, and supplies had reduced costs. Moreover, he made it clear that if he had enough medical officers to cover all posts and arsenals, the use of private physicians would decline, with a corresponding decrease in the department's budget. Congress not only maintained the position of surgeon general, but also, quite ironically, established billets for four more surgeons and ten more assistant surgeons in late June 1832.[128] This congressional action led to the first medical examination board to test the academic competence of department candidates.[129]

That same year, Lovell continued his struggle to increase his officers' pay. "There is probably no class of officers under the government whose

compensation is more inadequate to their service than that of the Medical Staff of the Army," Lovell wrote to Secretary of War Lewis Cass:

> There are but two grades, surgeon and assistant surgeon . . . the pay of the former is forty-five dollars a month, and the pay of the latter forty-dollars a month. The prospects of gradual and continued promotion held out to the other officers of the army, is a powerful incentive to good conduct, and when realized becomes its just reward. Of this the medical officers are deprived . . . the nature of their profession requiring time, experience and pecuniary means for its acquisition; the responsible and arduous services demanded of them; the relation . . . in which they stand to the line of the army; and I may add in justice to this meritorious class of officers their general capacity, respectability and good conduct, entitle them to a higher rate of compensation.[130]

Finally, on 30 June 1834, Congress passed a bill to increase and regulate the pay of Army medical officers. Surgeons were entitled to the pay and emoluments of a major. New assistant surgeons received the pay and emoluments of a first lieutenant; those with 5 or more years of service that of a captain. Surgeons and assistant surgeons who served for 10 years were entitled to an increase in rations per day. The act also stated that all candidates for assistant surgeon had to be examined and approved by an Army medical board.[131]

Wartime Surgeon General

The Medical Department deployed to war twice during Lovell's tenure. The first was to the Black Hawk War in southern Michigan Territory (southwest Wisconsin today) from June through September 1832.[132] The other was in support of the Second Seminole War, begun by the massacre of Brevet Major Francis L. Dade and his 110-man contingent as they made their way from Fort Brooke (Tampa) to Fort King (Ocala), Florida, on 28 December 1835.[133] Both conflicts tested the organizational and operational fabric of Lovell's creation.

By 16 June 1832, General Henry Atkinson's inability to subdue the Sauk war leader, Black Hawk, induced President Jackson to deploy Brevet Major General Winfield Scott with 1,000 men across the Great Lakes to Chicago. From there they would march to battle.[134] That same day Lovell received orders from Secretary of War Lewis Cass to have all medical officers assigned to western and northwestern stations to remain at, or, if on furlough, repair to, their posts immediately and prepare for war.[135]

As the situation deteriorated on the northwestern frontier in the spring of 1832, Lovell undoubtedly reflected on the medical command and control, communications, and logistics difficulties experienced in the War of 1812. Although written for peacetime service, Lovell's departmental regulations would be flexible enough for wartime contingencies as long as they were directed by a central authority. Therefore, Lovell remained at his desk in Washington, allowing him to receive the most current information and directives from the secretary of war, act on them with dispatch, and conduct routine departmental business.

Dr. John A. Brereton, the departmental clerk, was a busy man on 16 June. Following Lovell's orders to frontier post surgeons came further directives: Surgeon Benjamin F. Harney, assigned to Baton Rouge Barracks, would accompany troops from that post moving up the Mississippi River to join Atkinson's command; Surgeon Josiah Everett, at Fortress Monroe, and Assistant Surgeons Henry Stevenson at Fort Niagara, Samuel G.I. DeCamp and Edward Macomb at Fort Hamilton, New York, Robert E. Kerr in Washington, Henry A. Steineke at Fort Gratiot, Michigan Territory, and Alfred W. Elwes at New Castle, Delaware, were to pack their supplies and equipment and join units preparing to accompany Scott's command. If and when they needed resupply, they were to send requisitions directly to the departmental purveyor, Surgeon Thomas G. Mower, in New York.[136] As the senior medical officer being deployed, Everett was designated medical director and reminded that "the assignment of the several Medical Officers attached to Genl. Scott's command is of course left to him."[137]

Lovell then wrote to Mower:

> I have directed Dr. Everett, who will accompany the command ordered from Fort Monroe to Chicago to make his requisitions on you without delay for such additional supplies as he may require for active service. Let them be put up as soon as possible to be in readiness for them on their arrival in New York. Dr. Macomb has also been instructed to make a Requisition on you for a similar supply for the three companies to which he will be attached which will also leave New York. In addition to the articles that will be taken on by Dr.s Harney, Stevenson, Steinnecke, and DeCamp from their respective posts you will please forward a full supply of Medicines, Hospital Stores, Dressings and Bedding for 1000 men according to the supply table, with such addition to the essential medicines and to the dressings as you think advisable for active service. The several posts and the two detachments of Artillery

> will probably give an ample supply of Instruments. It will be well however to add to the General supply a couple of amputating and trepanning instruments several pocket cases and extra Tournequets [sic]. I have requested $3000 to be sent to you, if more is required you will make your requisition. I shall also forward a supply of blank forms to be sent at the same time.[138]

He continued in another letter to Mower later the same day:

> I perceived that by the General order of this date a detachment of Recruits is to leave New York for Chicago. I have therefore requested that Dr. Kerr may be instructed to report to Lieut. Col. Twiggs for the purpose of accompanying them and you will furnish him with the necessary Medicines, etc. for the march. I omitted in my former letter to state that the additional supplies should be directed to the care of Surgeon Harney or Senior Surgeon at Chicago. As the post at Fort Hamilton will be furnished by the medical supplies from New Castle Dr. Macomb should take from that post whatever articles he has on hand especially instruments, bedding, etc. that may be suitable for the service of the command.
>
> The service on this frontier will require a supply of small and convenient medicine chests; if there be not time for their construction you can probably purchase such as are generally kept for sea chests one of which should be furnished for Dr. Everett, one to Dr. Macomb, and two sent with the General Supplies. Care should be taken to have all the perishable articles so packed as to be defended from wet and the principle articles as Quinine, Calomel, etc. put up in small packages for distribution.[139]

In the Black Hawk War, Lovell demonstrated the lessons he had learned in the Niagara campaigns of 1814 and 1815. A central, stationary medical authority to direct medical operations was important; however, transportation time and distance reduces that authority's daily span of control to the confines of their office. Therefore, it is imperative to provide direct, informative, and concise communications and orders that allow decision-making flexibility to selected senior officers who would execute the medical plan. Equally imperative were logistical operations and coordination in the overall medical plan, which Lovell, Mower, and Everett performed so well. Regrettably, from a medical perspective the Black Hawk War is remembered more for the cholera outbreak that occurred first among Scott's command and then spread to

other posts in August and September than for the success of the Medical Department in its first wartime deployment.[140]

Lovell was surgeon general for only 9 months of the 7-year Seminole War and, therefore, had only a brief glimpse of the medical difficulties encountered during the conflict's guerilla warfare in Florida's tropical environment. Records for those 9 months are few; however, it appears that Lovell approached this campaign as he had done the Black Hawk War, by establishing senior officers' control in theater, appropriate hospital facilities, and a local medical purveyor.[141] Lovell recognized that disease would complicate medical operations from a personnel and logistical perspective, telling Cass:

> Several of the officers sent into Florida are already unfit for duty and an additional number will be required as it is understood that several small posts are to be occupied; and a proportional number will also be employed on detached service along an extensive frontier each detachment always requiring with it at least one Medical Officer and they being liable from the nature of the service to become unfit for duty from sickness I have to recommend an addition of five Surgeons and ten Assistant Surgeons as the smallest number that will be necessary under the circumstances above stated.[142]

Lovell was given three surgeons and five assistant surgeons, his last victory for the department.[143]

Joseph Lovell: "One of Those Rare and Lovely Characters"[144]

On 5 September 1836, Margaret Lovell, "the devoted and cherished partner of his life,"[145] died, just 12 days after giving birth to her eleventh child, a daughter and her namesake. Six weeks later, on 17 October, Joseph succumbed to pneumonia. Lovell's eulogist in the *National Intelligencer's* obituary commented that, "In his social duties, the domestic circle, and as father and husband—all the ties which bind the Christian and the man to the obligations of world—Doctor Lovell stood conspicuous."[146] Harvey Brown remembered him as "one of those rare and lovely characters of whom . . . the world is not worthy."[147] Both Lovells are buried in the Congressional Cemetery in Washington under a monument erected by the medical officers of the Army in December 1843. The Lovell home is known today as the Blair House for second owner, Montgomery Blair, who purchased the property after Joseph Lovell's

death. It has been the official guest house of the president of the United States since 1942.

Lovell's life and 18-year tenure as Army surgeon general ended abruptly. But the organizational and administrative framework he established for the Medical Department endured. Lovell's achievment became a foundation to build upon and a legacy to cherish.

Chapter 4 Notes

1. Lovell re-sent reporting forms to surgeons in June. Letters & Endorsements Sent, vol. 2, Record Group (RG) 112, National Archives and Records Administration (NARA).
2. Tobias Watkins, *Medical Report of Military Inspection Tour through the Northern Division, 28 October 1818,* MS C85, National Library of Medicine. Although no inspection report from Bronaugh has been found, it appears Lovell continued to request it. Lovell to Bronaugh, 2 September 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
3. Harvey Brown, *The Medical Department of the United States Army from 1775 to 1873* (Washington, DC: Surgeon General's Office, 1873), 110-121.
4. Lovell to all surgeons, 14 October 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
5. Ibid.
6. Lovell to Oglethorpe Barracks, Savannah, GA , Letters & Endorsements Sent, vol. 2, RG 112, NARA.
7. Lovell to Dr. Wallace, 14 October 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
8. Lovell to Dr. Dunham, 14 October 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
9. Lovell to Calhoun, 27 November 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
10. Expeditions up the Missouri and Mississippi river valleys between 1818 and 1825, commanded by Brevet Brigadier General Henry Atkinson, were to extend US military presence and power to impress Native Americans and counter British influence. The first of these expeditions, begun in March 1818, was intended to reach the mouth of the Yellowstone River, but made it only to present day Fort Leavenworth, KS. Samuel J. Watson, *Jackson's Sword: The Army Officer Corps on the American Frontier, 1810-1821* (Lawrence: University of Kansas, 2012), 198-204.
11. Joseph Lovell, "Report of the Surgeon General to the Secretary of War," 1 May 1819, 4; Microfilm SO2895, National Library of Medicine (NLM).
12. Ibid.
13. Lovell to Calhoun, 2 October 1818, in: W. Edwin Hemphill, ed., *The Papers of John C. Calhoun*, (Columbia: University of South Carolina, 1963), vol. 3, 185.
14. Lovell to Calhoun, 26 November 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
15. Lovell to Calhoun, 2 December 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
16. Lovell used proportion and ratios sparingly, and with little fidelity, to describe Army disease incidence. He understood the 18th century concept of "population thinking,"

but could not employ it meaningfully. For more on the 18th century development of epidemiology, see Alfredo Morabia, ed., *History of Epidemiologic Methods and Concepts* (Basel: Birkhäuser-Verlag, 2004), 7-14, and Andrea Rusnock, *Vital Accounts: Quantifying Health and Population in Eighteenth-Century England and France* (New York: Cambridge University, 2002).

17. For development of statistical theory and methods, see Theodore M. Porter, *The Rise of Statistical Thinking, 1820-1900* (Princeton: Princeton University, 1986) and Stephen M. Stigler, *The History of Statistics: the Measurement of Uncertainty before 1900* (Cambridge: Belknap Harvard, 1986).
18. According to James Mann, no medical records were kept at the Burlington Hospital during Lovell's tenure there in 1812-1813. Neither were records kept by surgeons in the Niagara theater because it was very active during much of the war. James Mann, *Medical Sketches of the Campaigns of 1812, 13, 14* (Dedham, MA: H. Mann and Co., 1816), 246. Lovell may have been aware of George Fordyce's "An Attempt to Improve the Evidence of Medicine," *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge* (London: Johnson, 1793) through his association with James Jackson, MD, at Harvard. James Cassedy, *American Medicine and Statistical Thinking, 1800-1860* (Cambridge: Harvard, 1984), 58, 60.
19. Lovell, "Report of the Surgeon General," 1 November 1818; Microfilm SO2895, NLM.
20. Ibid, 2-3.
21. Lovell, "Report of the Surgeon General," 1 February 1819, 1; Microfilm SO2895, NLM.
22. Lovell, "Report of the Surgeon General,"1 May 1819, 1; Microfilm SO2895, NLM.
23. Ibid.
24. Lovell, "Report of the Surgeon General," 1 November 1818; Microfilm SO2895, NLM..
25. The clinical and pathological differences between louse-borne typhus and typhoid fever were discovered during the first four decades of the 19th century and not accepted by the medical profession until the mid to late 1840s. See Dale C. Smith, *On the Causes of Fevers (1839)* (Baltimore: Johns Hopkins, 1984), Introduction.
26. Lovell, "Report of the Surgeon General," 1 November 1818, 4; Microfilm SO2895, NLM.
27. Ibid, 5.
28. Ibid, 6.
29. Ibid, 7.
30. Ibid, 7-9.
31. Lovell, "Report of the Surgeon General," 1 February 1819, 9; Microfilm SO2895, NLM.
32. Ibid.
33. Ibid, 10-11.
34. Lovell to Calhoun, 22 August 1818, Hemphill, *Calhoun Papers*, vol. 3, 61.
35. Joseph Lovell, "Medical Economy," *National Intelligencer*, 23 October 1819.
36. Ibid.
37. Ibid.
38. Ibid.
39. Calhoun to Speaker Henry Clay, 11 December 1818, Hemphill, *Calhoun Papers*, vol. 3, 374-86.

40. Jackson accused Alexander Arbuthnot and Richard Ambrister of selling arms, equipment, etc., to the Seminoles and brought them before a military court. Ambrister was found guilty and Arbuthnot was exonerated, but Jackson overruled the Arbuthnot decision. Both were executed on 29 April 1818. Robert Remini, *The Life of Andrew Jackson* (New York: Penguin Books, 1988), 119-121.
41. Paul E. Johnson, *The Early American Republic, 1789-1829* (New York: Oxford University, 2007), 143-144. George Dangerfield's version of the panic in *The Awakening of American Nationalism, 1815-1828* (New York: Harper & Row, 1965) is dated, but still worth reading.
42. Lovell had a small collection of books in his office that belonged to the department, and he added to these as his budget would allow, usually about $250-$350 per year during the 1820s. This collection would grow into the surgeon general's library during Thomas Lawson's tenure. In 1867-1868, Surgeon General Joseph K. Barnes asked Major John Shaw Billings to become the librarian in his spare time. In 1871 Barnes began making annual requests to Congress to support the library and had Billings devote all of his time to making the surgeon general's library into a large "National Medical Library." The "Surgeon General's Library" became the National Library of Medicine in 1963. Wyndham D. Miles, *A History of the National Library of Medicine* (Bethesda, MD: Department of Health and Human Services, US Public Health Service, 1985), 1-3, 29, 34, 36.
43. Calhoun to Lovell, 29 July 1819, and Lovell to Calhoun, 31 July 1819, Hemphill, *Calhoun Papers* vol. 4, 188, 196.
44. Lovell to Lt. Hills, Arsenal at Richmond, 30 January 1819, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
45. Lovell to Dalaby, 22 March 1819, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
46. Lovell to Le Baron, 18 September 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
47. Lovell to Archer, 27 October 1818, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
48. Lovell to Mann, 20 July 1820, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
49. Calhoun to Brown, 25 April 1818: "Of the Hospital surgeons I could not hesitate to select Dr. Watkins as the Assistant Surgeon General for your Division. His medical talents are said to be good, and he has sufficient youth and activity to perform the duties of an Inspector." Hemphill, *Calhoun Papers*, vol. 2, 258-259; Brown to Calhoun, 10 May 1818, Brown Papers, LOC; Lovell to Brown, 5 December 1818: "The appointment of Asst. Surgeon Genl. was like several others forced upon the Sec'y against his better judgment—this officer however was considered merely as an assistant to the Surgeon Genl., rather than a member of the Division Staff." Brown MSS, Reel 4, Massachusetts Historical Society.
50. Brown to Calhoun, 10 May 1818, Brown Papers, LOC.
51. Lovell, "Report of the Surgeon General," 1 August 1819, 3; Microfilm SO2895, NLM.
52. Ibid, 4.
53. Calhoun to Jackson, 10 August 1819, Hemphill, *Calhoun Papers,* vol. 4, 224-225.
54. Jackson to Calhoun, 7 September 1819, Hemphill, *Calhoun Papers,* vol. 4, 305.
55. Lovell, "Report of the Surgeon General," 1 November 1819, 12-13; Microfilm SO2895, NLM.

56. Russell Weigley, *A History of the United States Army* (Bloomington: University of Indiana, 1984), 140-143. Calhoun's service as secretary of war has not been adequately explored by his biographers. For more of Calhoun's tenure, see Richard W. Barsness, "John C. Calhoun and the Military Establishment, 1817-1825," *Wisconsin Magazine of History* 50 (Autumn 1966), 43-51; Carlton B. Smith, "Congressional Attitudes Toward Military Preparedness During the Monroe Administration," *Military Affairs* 40 (February 1976), 22-25; and Roger Spiller, "Calhoun's Expansible Army: the History of a Military Idea," *South Atlantic Quarterly* 80 (1980), 189-203.
57. Weigley, *History of the United States Army*, 143; John D. Morris, *Sword of the Border: Major General Jacob Jennings Brown, 1775-1828* (Kent, OH: Kent State University, 2000), 217, 223.
58. *Army Medical Bulletin* 52, April 1940, 30.
59. Ibid.
60. The first Army medical examination board met in late July 1832 on the northwestern frontier during the Blackhawk War. Lovell to Cass, 14 July 1832, Letters & Endorsements Sent, vol. 5, RG112, NARA.
61. Apothecary General LeBaron attempted, and nearly succeeded, to gain control of the Medical Department by currying favor in Washington from Tilton's retirement in June 1815 until Calhoun's reorganization of the Army in 1818. LeBaron wrote to Adj Gen. Daniel Parker in March 1815, "All those who are acquainted with the duties of this office are convinced of its necessity & importance. The Surgeon & Physician Gen^{l} Dept. is of no import; But this of the highest, & the Army cannot do without this office, or one whose duties are similar. This I hope you will agree I depend on you." In April he urged, "Would it not be advisable that Doctor Tilton & myself should be ordered on to Washington and be consulted in the general disbandment, and new organization of the Medical Staff of the Army? If you are of this opinion I beg that you will mention it to the Hon^{ble} Acting Secretary of War, and state to him the propriety & utility of such a measure." Francis LeBaron to Adj. Gen. Daniel Parker, 28 March and 19 April 1815, Letters Received, Adj. Gen. Office, RG 94, M-566, Roll 12, NARA. Political maneuvering by assistant surgeons general Watkins and James Bronaugh has been discussed.
62. Lovell to Calhoun, 11 July 1821, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
63. Ibid.
64. Harney to Lovell, 14 March 1823, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
65. Harney to Lovell, 1 May 1824, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
66. Lovell to Mann, 22 April 1818: "The regulation prohibiting Army Surgeons from private practice is dispensed with as far as respects yourself." Letters & Endorsements Sent, vol. 2, RG 112, NARA. Satterlee was given permission thru the secretary of war to engage in private practice provided it did not interfere with his official duties. Lovell to Richard Satterlee, 30 September 1825, Letters & Endorsements Sent, vol. 3, RG 112, NARA.
67. Eaton to Lovell, 22 November 1819, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
68. Lovell to Dr. Benj. Delavan, Ft. Barrancas, Pensacola, FL, 11 March 1825: "The order to which you refer was not issued for the exclusive accommodation of Dr. Lawson or of any other officer, but circumstances of a public nature rendered it not only

expedient but necessary." Joseph Eaton to Lovell, 25 July 1825: "I have lately seen the official list of promotions appointments . . . and among the rest I notice Dr. Archer, Asst Surgeon, to be Surgeon. I have understood that it was your intention, as far as in you that promotion should be regular. I was, therefore, not a little surprised to have seen the promotion of Dr. Delevan and I am much more now to that of Dr. Archer. Will you have the goodness to inform me on what principle promotions take place in the Medical Department." Letters & Endorsements Sent, vol. 2, RG 112, NARA.

69. Brown to Lovell, 3 January 1819, Brown MSS, Reel 5, Massachusetts Historical Society.
70 John Calhoun to Floride Bonneau Calhoun, 28 May 1826. Familytales website. http://www.familytales.org/dbDisplay.php?id=ltr_jcc6124. Accessed 5 August 2010.
71. Daniel S. Lamb, *History of the Medical Society of the District of Columbia, 1817-1909* (Washington, DC: Medical Society, 1909), 149, 223, 427, 433.
72. Phrenology is based on the ideas of late 18th century Viennese physicians Franz Joseph Gall and Johann Caspar Spurzheim that the functions of the brain could be localized to certain areas of the cerebral cortex, and that personality and character were determined by the development and/or injury to these various areas. Phrenology was quite popular in the United States and Britain, especially Edinburgh, during the 19th century.
73. Richard Rathbun, *The Columbian Institute for the Promotion of the Arts and Sciences* (n.p., 1917), 23.
74. G. Hunt, ed. *The First Forty Years of Washington Society, Portrayed by the Letters of Mrs. Samuel Harrison Smith* (New York: Charles Scribner's Sons, 1906), 210, 238, 246, 250, 268.
75. John MacPherson Berrien (1781-1856) was senator from Georgia (1825-1829) and attorney general in the Jackson administration (1829-1831).
76. Samuel Appleton Storrow (1787-1837) was a Boston lawyer and friend of Joseph Lovell who moved to Virginia. Storrow was appointed an Army judge advocate by the "Act for organizing a general staff and making further provisions for the army of the United States," 24 April 1816. He served as judge advocate for Brown's Northern Division until the Army reorganization of 1821. Storrow's son was named William Farley. *The Army Lawyer: A History of the Judge Advocate General's Corps, 1775-1975* (Washington, DC: GPO), 34-35.
77. Peter Buell Porter (1773-1844) was a lawyer and soldier who served as the twelfth secretary of war, 1828 to 1829.
78. Floride Calhoun (1792-1866) was the wife of Secretary of War John C. Calhoun.
79. US General Services Administration, "The President's Guest House: A Historic Structures Report, 2012-2014," 1 March 2014, #GS-11P-10-NW-G0136/PO04, Vol. 1 of 3, 73; Archives, Office of the Curator, Blair House, The President's Guest House, Washington, DC.
80. Lovell purchased lot 3, square 167. Tax records for 1824 show he made $5,000 worth of improvements by the end of the year. (Curator, Blair house, personal correspondence, March 2012.)
81. William Farley Storrow Lovell recorded that he was born 11 June 1824 and moved into the new home at about 7 weeks old. "The President's Guest House," 73.
82. Constance Greene stated the architect was Benjamin Latrobe; William Thornton or Charles Bullfinch have also been suggested. Constance Greene, *Washington: A History of the Capital, 1800-1950* (Princeton: Princeton University Press, 1976), 105.

83. The Lovells had eleven children: James, Mansfield, Joseph, John MacPherson Berrien, William Farley Storrow, Eliza Ann, Sarah Augusta Porter, Harriet Mansfield, Floride Calhoun, Josephine, and Margaret Eliza Mansfield. Joseph Lovell obituary, *National Intelligencer*, 19 October 1836.
84. Crane KE, *Blair House Past and Present, An Account of the Life and Times in the City of Washington* (Washington, DC: Department of State, 1945), 5, 8-12.
85. Calhoun ran and was elected vice president in 1824, under John Quincy Adams, and in 1828, under Andrew Jackson. John Niven, *John C. Calhoun and the Price of Union* (Baton Rouge: Louisiana State University, 1988), chapters 7 and 8.
86. Lovell to Barbour, 25 October 1825, Letters & Endorsements Sent, vol. 2, RG 112, NARA.
87. Meteorological data was collected and published annually. Uses for this data increased during the Civil War, specifically by the newly created Signal Corps, commanded by Albert J. Myer, a former Medical Corps officer. After the war Myer and the Signal Corps controlled all meteorological functions, and from his organization was created the US Weather Bureau in 1890. George Martin Kober, "General Albert J. Myer and the United States Weather Bureau," *Military Surgeon* (July 1929), 65-82.
88. Lovell, Circular to all Surgeons and Asst. Surgeons, 27 April 1826, Letters & Endorsements Sent, vol. 4, RG 112, NARA.
89. Mark Honigsbaum, *The Fever Trail: The Hunt for the Cure for Malaria* (London: Macmillan, 2001), 64.
90. Harney to Lovell, 2 October 1825, Letters Received, Box 38, RG 112, NARA.
91. "The severe fevers which prevailed here in the autumn have subsided, but the health of the men has been permanently impaired by them. The supply of Bark being insufficient the Solution of Arsenic, Decoctions of Willow and other indigenous barks, Charcoal, quassia, etc, etc have been substituted. Perhaps owing to the use of these supposed remedies, or to other causes, many of the men who have suffered from intermitting fever, are found to relapse on exposure to the unavoidable fatigues attending the discharge of their duties." Assistant Surgeon Edwin James, Fort Crawford, to Lovell, 2 January 1826, Letters Received, Box 42, RG 112, NARA.
92. Wood to Lovell, 5 November 1826, Letters Received, Box 103, RG 112, NARA.
93. Lovell to Harney, 12 April 1828, Letters & Endorsements Sent, vol. 4, RG 112, NARA.
94. After 18 years of studying and observing the absence of smallpox infection in milkmaids who had had cowpox naturally, Edward Jenner performed the first vaccination against smallpox on James Phipps on 14 May 1796. This was the first safe and systematic preventive modality for an infectious disease. Fielding Garrison, *An Introduction to the History of Medicine*, 4th ed. (Philadelphia: W. B. Saunders, 1929), 372.
95. Lovell to Barbour, 7 February 1826, Letters & Endorsements Sent, vol. 4, RG 112, NARA; "Vaccination in the Army of the United States," No. 310, 19th Congress, 1st Session, 14 February 1826, *American State Papers*: *Military Affairs*, 236.
96. Not doing so could kill a new recruit. Lovell, "Report of the Surgeon General," 1 August 1821, 4-5; Microfilm SO2895, NLM.
97. Lovell to Calhoun, 11 January 1825, Letters & Endorsements Sent, vol. 3, RG 112, NARA.
98. Ibid. It is unclear what Lovell meant by "indirect debility" in this case. Temporary nyctalopia can occur from intense sun exposure, such as a trip to the beach, but it lasts

only 24 to 48 hours; more likely these men were lacking vitamin A. Obviously, he is connecting the ophthalmia seen with the nyctalopia, which would be reasonable for that era of medical knowledge.

99. Lead absorption is a slow process no matter the route of entry. Symptoms of wandering, poorly localized abdominal pain and peripheral nerve pain and palsy are seen initially. Lovell, "Report of the Surgeon General," 1 February 1827, 1; Microfilm SO2895, NLM.
100. Ibid.
101. Lovell, "Report of the Surgeon General," 31 March 1828, 4-5; Microfilm SO2895, NLM.
102. Lovell to Elwes, 9 November 1831, Letters & Endorsements Sent, vol. 5, RG 112, NARA.
103. Lovell to Macomb, 10 November 1831, Letters & Endorsements Sent, vol. 5, RG 112, NARA. Lovell also included these same comments in his quarterly report to the secretary of war. Lovell, "Report of the Surgeon General,"31 January 1831, 2; Microfilm SO2895, NLM.
104. The General Recruiting Service was established by Major General Brown in 1822 to assist with lagging regimental recruiting efforts and to supply western posts. Leonard L. Lerwell, *The Personnel Replacement System in the US Army*, Washington, DC: 1954, Department of the Army Pamphlet No. 20-211, 46-48.
105. Lovell, "Report of the Surgeon General," 1 May 1826, 3; Microfilm SO2895, NLM.
106. Lovell to Barbour, 27 February 1827, Letters & Endorsements Sent, vol. 4, RG 112, NARA.
107. Harney to Lovell, 10 and 22 January 1827; Lovell, "Report of the Surgeon General," 1 May, 1826, 3; Microfilm SO2895, NLM. In 1827, the superintendent of the Eastern Department of the Recruiting Service, Lieutenant Colonel Enos Cutler, reported his officers were taking only 25% of applicants. Edward M. Coffman, *The Old Army* (New York: Oxford University, 1986), 143.
108. Lovell, "Report of the Surgeon General," 1 March 1828, 3; Microfilm SO2895, NLM.
109. Weigley, *History of the United States Army*, 168.
110. Ibid, 167.
111. Gonorrhea and syphilis cases averaged 303 (42.9/1,000/year) and 190 (30.3/1,000/year), respectively, from 1820 to 1829.
112. Lovell to Congress, 26 January 1829, in "On the Expediency and Effect of the Use of Ardent Spirits in the Army," No. 401, 20th Congress, 1829, *American State Papers: Military Affairs*, 85.
113. Eaton to Lovell, 25 April 1825, Letters Received, Box 29, RG 112, NARA.
114. Anonymous surgeon to Lovell in "On the Expediency and Effect of the Use of Ardent Spirits in the Army," No. 401, 20th Congress, 1829, *American State Papers: Military Affairs*, 85.
115. Lovell, "Report of the Surgeon General," 1 May 1825, 4; Microfilm SO2895, NLM.
116. Alice Felt Tyler, *Freedom's Ferment, Phases of American Social History from the Colonial Period to the Outbreak of the Civil War* (New York: Harper Torchbook, 1962), chapter 13.
117. "On the Expediency and Effect of the Use of Ardent Spirits in the Army," No. 401, 20th Congress, 1829, *American State Papers: Military Affairs,* 84.

118. Ibid, 86.
119. Ibid, 85.
120. Ibid.
121. See chapter 3, notes 38 and 72.
122. Mark A. Vargus, "The Progressive Agent of Mischief: the Whiskey Ration and Temperance in the United States Army," *Historian* 67(2), Summer 2005, 199-216.
123. Awarded for meritorious conduct beginning in 1806, brevet rank was purely honorary. Weigley, *History of the United States Army*, 110-111.
124. Lovell to Barbour, 25 November 1825, Letters & Endorsements Sent, vol. 4, RG 112, NARA.
125. Lieutenants had been allowed an extra daily ration and captains $10 more a month when on duty with their companies. Lovell to Barbour, 21 December 1827, Letters & Endorsements Sent, vol. 4, RG 112, NARA.
126. Lovell to Eaton, 9 January and 24 May 1830, Letters & Endorsements Sent, vol. 5, RG 112, NARA; Brown, *Medical Department*, 143-145.
127. Brown, *Medical Department*, 145.
128. Ibid, 146-147.
129. See note 60.
130. Brown, *Medical Department*, 138.
131. Although the requirement of a medical board was included by Congress in this bill, in reality, all Medical Department candidates had been examined by a board of three officers since 1832. Brown, *Medical Department*, 139-140.
132. Francis Paul Prucha, *The Sword of the Republic: The United States Army on the Frontier, 1783-1846* (New York: Macmillan, 1969), chapter 11; Mary C. Gillett, *Army Medical Department, 1818-1865* (Washington, DC: Center for Military History, 1987), 50-52. For a longer account see Patrick J. Jung, *The Black Hawk War of 1832* (Norman: Oklahoma University, 2007).
133. Prucha, *Sword of the Republic*, chapter 14.
134. Ibid, 222-225.
135. Lovell to C.A. Finley, 16 June 1832, Letters & Endorsements Sent, vol. 5, RG 112, NARA.
136. Lovell to all officers mentioned, 16 June 1832, Letters & Endorsements Sent, vol. 5, RG 112, NARA.
137. Lovell to Everett, 28 June 1832, Letters & Endorsements Sent, vol. 5, RG 112, NARA.
138. Lovell to Mower, 16 June 1832, #352/379, Letters & Endorsements Sent, vol. 5, RG 112, NARA.
139. Lovell to Mower, 16 June 1832, #378/381, Letters & Endorsements Sent, vol. 5, RG 112, NARA.
140. Gillett, *Army Medical Department, 1818-1865*, 50-52.
141. Brown, *Medical Department*, 154. Gillette provides little assessment of the first year of the Second Seminole War from Lovell's perspective, most likely because she, like this author, found very few directives coming from the surgeon general. Gillett, *Army Medical Department, 1818-1865*, 53.
142. Lovell to Cass, 21 May 1836, Letters & Endorsements Sent, vol. 7, RG 112, NARA.
143. Brown, *Medical Department*, 154-155.
144. Brown, *Medical Department*, 156.

145. Part of the inscription on the Lovell's cemetery monument, erected by the officers of the Medical Department in December 1843.
146. *The National Intelligencer*, 19 October 1836.
147. Brown, *Medical Department*, 156.

Epilogue

By 1836, Joseph Lovell's Medical Department had been established on a strong administrative and professional foundation of proven competence and value. Lovell had demonstrated the relevance of medical services to the Army at the tactical, operational, and strategic levels of his time. However, although endorsed by a majority of the Congress and the Army, the department remained vulnerable to enemies in both of those organizations and to changing political and economic climates.

If this young department was to become a truly "constituent part"[1] of the Army, Lovell's successors would continually need to reinforce its relevance. This would become an increasingly difficult assignment as tactical, operational, and strategic doctrine struggled to keep up with developing science and technology that totally transformed both the medical and military professions, and simultaneously changed an expanding, but relatively isolated, agrarian society into an industrialized nation on the world stage. Between 1836 and 1902, four developmental eras can be identified for the Medical Department in which significant alterations were made by the surgeons general to tactical, operational, and/or strategic relevance.

The Lawson Era (1836–1861)

Lovell's unexpected death left the Medical Department momentarily without direction. Assistant Surgeon Benjamin King, who was on duty in Washington at the time, assumed the surgeon general's duties temporarily as discussions over Lovell's successor heated up. There was a strong push in Congress for a civilian replacement; however, the Army desired that Thomas Lawson, the senior surgeon in the department, then serving as medical director in Florida, be selected. Although Army lobbying was

strong, President Jackson delayed a decision until 30 November 1836, when he decided in favor of the Army. Lawson, however, did not return to Washington and assume his duties as surgeon general until spring 1837.[2]

Thomas Lawson is an enigmatic figure. He has been described by one historian as essentially a pompous and arrogant man, autocratic and quarrelsome to the point of insubordination with superiors; a stubborn, unimaginative man without a guiding vision for the Medical Corps.[3] Medical Corps colonel and departmental historian Percy M. Ashburn characterized him as "more soldier than physician . . . fiery, strict, [and] jealous of the military rights and privileges of his corps."[4] Although Lawson's personality may have seemed less than admirable to some, Ashburn's assessment provides a different perspective, that of a medical soldier, by which to judge Lawson and his actions. This perspective is elucidated by Lawson in a letter to Secretary of War Joel R. Poinsett concerning the Medical Department uniform in July 1839:

> I have been twenty-six and more years in the military service of my country, and very generally with troops on the frontiers and in the field. I have been on the theater of immediate action in every war . . . within my period of service . . . except that with Black Hawk, and then I volunteered my services . . . but could not obtain permission to leave my station.[5]
>
> I have acted as quartermaster and as adjutant, and have been for months at a time, in command of a company of men in the regular army. I have also commanded a battalion and a regiment of men in the volunteer service, and have led them to the theatre of war; in the first under a commission from the executive of the state of Louisiana, and on the last occasion by the almost unanimous consent of the officers and men who served under my orders. . . . If under these circumstances the commanding general of the army could feel . . . justified in putting me off with an aiguillette, a piece of tinsel on one shoulder, while he decorates every brevet second lieutenant with an epaulette on each shoulder, and the staff lieutenant with an aiguillette besides, I must be satisfied to remain without a military dress.[6]

Ashburn's assessment would have been more accurate had he said "more military medical officer than physician," thereby making the distinction between soldier and civilian rather than between soldier and doctor. Lawson was both a soldier and a physician to soldiers, a professional combination always appreciated by commanders of the line but never found as commonly as they would like. He enjoyed

aggressively sought-out opportunities,[7] and apparently was quite competent, as a line and medical commander and administrator. He also recognized command and administrative abilities as fundamental to medical officers. Lawson's experiences, his uncompromising professional philosophy and standards, his political savvy, and his personality made him a formidable force in the Medical Department he directed, in the Army, and in Washington politics for a quarter century.

Lawson could be jealous of the department's military rights and privileges only because Lovell had secured these rights and privileges for the department. Moreover, Lawson worked diligently over time to permanently expand them through logical, common-sense arguments to the secretary of war and Congress. Lawson vigorously supported the right of medical officers to engage in private practice and the 1838 raise in medical officers' salaries, and it was during Lawson's administration that the Medical Examination Board became a routine activity.[8] In 1837 he advocated the hiring of "young professional men" to perform hospital steward duties in Florida because it was "very difficult to obtain a man from the ranks of the Army qualified to perform the duties of Hospital Steward."[9] The following year, hospital steward pay was increased and recruitment specifically for stewards began. In 1840 Lawson established a training program for stewards at one of the New York Harbor posts (most likely Fort Columbus). Although short-lived,[10] these enlistment and training programs were rapidly successful. Lawson endeavored to make field evacuation of casualties more efficient and comfortable during the Second Seminole War by having an ambulance designed and a prototype built.[11] He contracted originally for sixteen ambulances in late July 1837 and ordered four more in September due to the increase in troops being deployed to Florida.[12]

Lawson also won the battle for a new uniform that included the coveted epaulettes in October 1840.[13] This addition gave the uniform and its wearer the appearance of an officer and distinguished the physician from officers in other departments.[14] A small victory perhaps, but Lawson recognized, as had Lovell, not only the importance and necessity of real, as opposed to relative, military rank in the Army, but also that real rank would be obtained incrementally. However, some members of the corps, notably Thomas G. Mower, Charles S. Tripler, and Henry L. Heiskell (and most likely Lawson) maintained that Lovell intended the 1834 act to establish this precedent.[15] Lawson formally solicited the views from all of his officers on the subject of rank. Although the responding letters were supportive, it was Lawson's tenacity and the war with Mexico that finally secured real military rank for medical officers, legalized with an

act "To raise for a limited time an additional military force and for other purposes" on 11 February 1847.[16]

In anticipation of a hostile reaction by Mexico to the annexation of Texas, President Polk had deployed an "Army of Occupation," commanded by General Zachary Taylor, to Corpus Christi in August 1845. Negotiations with the Mexican government collapsed in January 1846, and hostilities began in May with Taylor's campaign in southern Texas and into northeastern Mexico, resulting in the capture of Monterrey. During the summer and fall of 1846, Colonel Stephen W. Kearney commanded columns from Fort Leavenworth that successfully drove the Mexican authorities from New Mexico and California. However, none of these actions altered Mexico's resolve to maintain its territories. Therefore, in mid-November 1846, General Winfield Scott prepared a campaign plan to seize Vera Cruz, in the Gulf of Mexico, then march across rugged central Mexico and capture Mexico City. Approved by Polk, the audacious campaign began with amphibious landings at Vera Cruz on 9 through 11 March, and ended with the fall of Mexico City on 13 September 1847.[17]

Lawson deployed medical assets to support the 1845–1846 campaigns according to standard operating procedures established by Lovell in the Blackhawk and Second Seminole wars, and he did so with dispatch. Medical depots were established at New Orleans and Corpus Christi and subject to General Taylor's orders. A medical director and medical purveyor were designated for Taylor's army, and the medical purveyor in New Orleans was authorized to purchase immediately required supplies without approval from the surgeon general or the New York-based medical purveyor. Medical officers were assigned to the general hospital established in Corpus Christi and to regimental hospitals.[18]

In early December 1846, Lawson was in New Orleans "on official business," presumably inspecting medical facilities and supply depots there in preparation for Scott's upcoming campaign.[19] Scott, who was also in New Orleans conducting a forward reconnaissance of his staging bases, met briefly with Lawson.[20] According to Lawson, "General Scott deems it essential to the interests of the service that I should go on to Mexico and look into the management of affairs of the Medical Department of the Army under his command and I feel satisfied myself that my presence with the Army for awhile will enable me the more understanding to provide for the Troops operating in the field."[21] Lawson accompanied Scott on the campaign as chief of his medical staff.[22]

Lawson advised and, at times, directed the employment of medical assets during the 1847–1848 campaign. Through medical director reports, he kept abreast of the tremendous toll of diseases—mainly diarrhea and dysentery[23]—and the efforts of his surgeons in dealing with combat trauma.[24] New pharmaceuticals were tested in the field: salacine,[25] from willow bark, was given a trial in the treatment of fevers in the hope it might be an alternative to the more expensive quinine, and ether anesthesia was first attempted on the battlefield, but proved difficult to administer and resulted in poor operative and post-operative outcomes.[26]

Lawson and his officers contended with logistical issues—mainly transportation of supplies and casualty evacuation—as they marched farther inland. Transportation by sail and horse-drawn wagon was slow and not always reliable, and supply shortages and overcrowded general hospitals were common to all armies and medical departments of that era (even in the 21st century military medical resources still depend on operational tempo, geography, and available transportation). Lawson had created and, apparently, fielded ambulances during the Second Seminole War (1835–1842). As the army marched into Mexico, he tried to obtain 50 wagons specifically for casualty transportation, but apparently his request became lost in Quartermaster Department bureaucracy.[27] The lack of ambulances notwithstanding, it is evident from comments by those in command in Mexico that the line was quite pleased and satisfied with their medical support.[28]

In 1848, after the war, Lawson returned to Washington to resume the routine political and economic struggle to maintain the competence and viability of the department: more officers[29]; enough competent, dedicated hospital stewards; and appropriate pay for nurses[30] and hospital cooks. In August 1856, he achieved a major victory for his department with the passing of an act "For a necessary increase and better organization of the Medical and Hospital Department of the Army," which authorized four surgeons and eight assistant surgeons; the enlistment of hospital stewards in the rank, pay, and emoluments of a sergeant of ordnance to be permanently attached to the department; and extra pay to soldiers acting as cooks and nurses.[31] That same year the second part of *Medical Statistics, US Army* was published, and 3 years later a board of officers met to examine and recommend ambulances for Army use. The board selected four-wheeled and two-wheeled models, had them field tested, and put one four-wheeled model and one two-wheeled model into the Army inventory.[32]

As Fort Sumter fell, Lawson's health began to fail. He had a fatal stroke on 15 May 1861 while in the care of a physician in Norfolk, Virginia.[33] Lawson had served his nation for 52 years, serving as a physician and soldier—a medical officer—for 50 of those years and as Army surgeon general for 24.[34] During his tenure as surgeon general, Lawson solidified and strengthened the work begun by Lovell on the Medical Department's infrastructure: pay, enlistment of stewards, medical officer boards, facilities, and equipment such as ambulances. These victories took years to achieve, but like Lovell, Lawson had patience and absolute faith that his vision for the department would become reality. Furthermore, this vision—for Lawson and for many of his officers—was one in which the department was a truly military medical department, a constituent part of the Army. Lawson obtained these results not because his concerns and methods were different than his predecessor, but because they were so much alike.

The Civil War (1861–1865)

Clement A. Finley, MD, succeeded Lawson as head of the Medical Department.[35] A well-respected medical officer with 42 years of dedicated service in wartime and in peace, Finley was promoted to surgeon general but then forced into retirement 11 months later for purely political considerations.[36] Finley deserved a better fate than that of scapegoat but unfortunately he and many of his medical and line colleagues were caught between a routine, peacetime constabulary and defensively oriented military establishment on one hand, and the outcome of the first battle in a war whose socio-political, geographical, and technological magnitude could scarcely have been imagined, on the other.[37] In the aftermath of the military and medical debacle of First Manassas (First Bull Run),[38] on 21 July 1861, Union military leadership went to Major General George B. McClellan. The politically powerful US Sanitary Commission (USSC)[39] assisted in orchestrating the ouster of Finley and the selection of William A. Hammond to replace him in April 1862, against the wishes of Secretary of War Edwin M. Stanton. Hammond's tenure as surgeon general would be plagued by Stanton's hatred.[40]

A former Medical Corps officer, Hammond had entered the military in June 1849 but resigned from the Army in the fall of 1860 to pursue experimental physiology and anatomy as a professor at the University of Maryland. The following May he re-entered service, assigned first as purveyor and then as inspector of hospitals for the Army of Western Virginia. At just 34 years of age, Hammond exemplified the young,

scientifically modern and progressive physician.[41] He took charge of the Medical Department with vigor and resolve to implement a series of reforms in military medical education, personnel, supply, drug use, and system structure: essentially, a strategic plan that would correct current deficiencies and prepare the department for future development.

In May 1862, Hammond set out clear rules for surgical and medical reports and ordered the establishment of an Army Medical Museum and Laboratory for the study of military medicine and surgery. The following month he issued orders to have a medical history of the war prepared to provide direction for future advancement of medical science.[42] Also in 1862, the surgeon general's library was invigorated, plans were made for an Army medical school,[43] and Hammond directed microscopist Joseph J. Woodward to write the first manual for hospital corpsmen in 1862.[44] The following year Woodward's *Outlines of Chief Camp Diseases* and Hammond's massive text on military preventive medicine were published and issued to medical officers.[45]

As Hammond settled into his new office, McClellan launched a waterborne assault, the Urbana Plan, from Annapolis onto the Virginia peninsula with the objective of seizing Richmond. The attempt failed in a disastrous series of battles known as the Seven Days' Campaign, leaving his exhausted, dispirited, and ill army slumped on the banks of the James River at Harrison's Landing.[46] Before the campaign opened, Hammond had given Medical Director Charles S. Tripler the authority to act independently, including the direction of USSC transport steamers. However, Tripler could not overcome the increasing supply and transportation obstacles that confronted him as the Army descended on Harrison's Landing, nor accept what he considered continual meddling in Medical Department business by the USSC. As the crisis worsened, Tripler became totally ineffective, his administrative and organizational skills completely deserting him. Left without recourse, Hammond relieved Tripler and appointed Jonathan Letterman[47] medical director in his stead.[48]

Arriving in late June, Letterman brought experience, initiative, and tactful firmness, as well as Hammond's authority and McClellan's support, quickly to bear upon the situation at Harrison's Landing. One month later, he and a large number of his uniformed colleagues had reestablished order in clinical and evacuation operations, mended fences with the USSC, and, thereby, regained Medical Department pride and dignity.[49] This minor miracle was but a prelude to more significant and permanent alterations in the department.

Lovell and Lawson had had a very broad, comprehensive, and systematic concept of the organization and delivery of military medicine in pre-industrial America. By the time of the Civil War, rifled artillery and small arms were becoming standard, railroads were beginning to alter time-distance relationships, telegraph lines had revolutionized communications, and the military and medical lessons of the Crimean War and Italian Wars of Unification were known. Hammond, and successive commanders McClellan, Ambrose Burnside, Joseph Hooker, and George G. Meade,[50] gave Letterman the freedom and support to create and implement a remarkable modernization of the traditional systematic approach to the delivery and management of military medical care.

Letterman, who advocated large tent hospitals rather than homes and barns as field-expedient facilities to reduce disease transmission, organized his hospitals by division. Theoretically, this improved patient regulation by maintaining casualties with their divisions and precluded overcrowding. Furthermore, the division surgeon provided regimental surgeons with a technical chain of command and physical location to send their patients, obtain supplies, and receive other assistance as required. In division hospitals, surgical talent was organized by echelon: teams of the most experienced and competent surgeons consulted and conducted major operative procedures to provide more standardized surgical care. Younger surgeons were assigned as assistants or given personnel and supply duties.[51]

Letterman developed the concept of escheloned care from point of injury to definitive care. An Ambulance Corps was established[52] with ambulances organic[53] to the Medical Department and a medical officer in charge of the vehicles, all pertinent equipment, and ambulance personnel. Lovell had obtained relative rank, and Lawson achieved military rank for medical officers. Hammond and Letterman gave them command. Ambulance teams gathered and began treating casualties during the battle, removed them to division hospitals, and from there to general hospitals further to the rear. At the battle of Antietam, Letterman's general hospitals were located in Hagerstown, Baltimore, and Philadelphia.[54] Therefore, he coordinated ambulance movements—including prescribed stops along the way for feeding, rest, and wound care—with the train schedule in Frederick, Maryland, so that patients could be moved quickly onto specifically designed ambulance cars.[55]

Letterman revamped medical supply procedures so that fewer supplies were issued at one time, which reduced wastage, and provided dedicated transportation for supplies. He also prepositioned supplies

at depots close to rail or water transportation.[56] To complete this modernized system of care, a new corps of medical inspectors was deployed to constantly remind medical officers of the importance of preserving health, and a standard system of reports and forms was established to track supplies and provide morbidity and mortality data.[57]

This system for medical operations was implemented Army-wide in 1864. Letterman also provided an expanded mission for the new system:

> A Corps of Medical officers was not established solely for the purpose of attending the wounded and sick . . . the labors of Medical officers covers a more extended field. The leading idea . . . is to strengthen the hands of the Commanding General by keeping his army in the most vigorous health, thus rendering it, in the highest degree, efficient for enduring fatigue and privation, and for fighting. In this view, the duties of the corps are of vital importance to the success of an army.[58] . . . If a medical staff can secure their soldier's health, its officers contribute largely to the success of the campaign. . . . First, that a commanding general should have an army on whose health he could rely. Second, that those who might be wounded should be in a condition to bear the shock & the operation . . . with every prospect of recovery.[59]

The appointment of Major Jonathan Letterman as medical director may be considered Hammond's most significant act as surgeon general, not only for the Army of the Potomac, but also for the Union Army as a whole. Indeed, it is not hyperbolic to state that this decision proved to be significant and enduring for medical departments throughout the armies of the Western world, which all adopted Letterman's system by 1900. However, Hammond must be remembered as a transitional surgeon general in an even larger frame. Like his predecessors, Hammond had a broad organizational and operational vision. But the implementation of that vision was confronted by resistance from Hammond's immediate superior, significant changes in medical science and social expectations of military medical care, and a Medical Department that grew to number in the thousands during the crisis of civil war. For all of this, Hammond was a remarkably successful surgeon general, who not only maintained the vision of Lovell and Lawson, but demonstrated that the department could grow professionally and perform competently during time of crisis.

Regrettably, Stanton's hatred for Hammond spurred him to send the surgeon general on an inspection tour in August 1863. During

Hammond's absence, Stanton fabricated corruption and malfeasance charges against him, and false witnesses and a corrupt court court-martialed Hammond on 18 August 1864.[60]

The Post-Civil War Era (1865–1893)

From August 1863 until his retirement for age in June 1882, Joseph K. Barnes directed the Medical Department. Commissioned into the Medical Department in June 1840, Barnes accrued a respectable career at a variety of frontier posts and urban stations and saw service in the Seminole and Mexican wars. He was brought to the surgeon general's office on 2 May 1862 and assigned as attending surgeon for Washington City. During this time he became acquainted with, and a favorite of, Secretary of War Stanton. In February 1863, Barnes was promoted to lieutenant colonel and medical inspector for Washington; in August he was promoted to colonel in the same billet. Immediately after Stanton sent Hammond out of town, he made Barnes acting surgeon general.[61]

Barnes was a tactful, diplomatic man of sound judgment; a man who liked hard work and appreciated hard work in others; and a determined, dedicated officer who inspired confidence from his subordinates.[62] He had both the character and personality requisite to administering the Medical Department wisely during its transition from wartime colossus to peacetime adjunct of a constabulary army.

Barnes is remembered largely for gathering a talented, creative, and hard-working group of young officers—Joseph J. Woodward, John Shaw Billings, George A. Otis, and Edward Curtis—as his staff during and after the war. Under Barnes's direction these men expanded the Army Medical Museum and its laboratory. They published *A Report on the Barracks and Hospitals* (1870), *A Report on the Hygiene of the United States Army* (1875), *The Cholera Epidemic of 1873 in the United States* (1875), and, over 20 years, the six-volume *Medical and Surgical History of the War of the Rebellion*. They made the Surgeon General's Library into a world-renowned repository of medical literature and created the *Index Catalogue,* which in time gave way to the *Index Medicus*.[63]

Although these significant achievements added well-deserved luster to the professional and intellectual character of the department, Barnes's routine workday was less glamorous and more taxing. A reduction in force while the number of western posts and stations increased, combined with perennially inadequate funding, made the first 15 years after the war a trial.[64] Like Lovell and Lawson, Barnes fought for appropriations in the halls of Congress, maintained professional standards through medical examination boards, and provided moral

support to his officers in the field through regular written and telegraphic correspondence.[65] While the surgeon general's staff put the Army Medical Department on the world stage, Barnes's political savvy, diligence, and attention to detail maintained its physical and fiscal integrity.

During the last 11 years of the post-Civil War era, the Medical Department had five chief executives: Charles H. Crane, Robert Murray, John Moore, Jedediah H. Baxter, and Charles Sutherland.[66] Undoubtedly these officers recognized the industrialization and urbanization occurring in America from coast to coast. They experienced the practical and theoretical development of science and technology, the establishment of educational standards and specific qualifications, and the maintenance of these qualifications through specific organizations and continuing education—essentially the creation of modern professionalism—in both medicine and the military. Regrettably, all of them contended with the same congressional neglect of the Army as had Barnes, which greatly stifled any creative ideas for significantly improving the corps that these men might have had. Although Murray initiated the actions that would result in the birth of the Hospital Corps during Moore's tenure in 1887, and Sutherland established a formal Hospital Corps training program, comments by James Phalen that Murray's tenure was "a contented one and . . . the interests of the department did not suffer"[67] could be applied to all five administrations.

The Sternberg Era (1893–1902)

President Grover Cleveland settled into the White House for a second time in March 1893.[68] A progressive reformer of American government, Cleveland shocked the national medical community in the spring of 1893 by selecting James Rufus Tryon[69] and George Miller Sternberg[70] over a number of senior officers[71] to succeed retiring surgeons general in the Navy and Army, respectively. The president's message was clear: he wanted competent, recognized medical leaders with significant line experience to establish the new progressive, scientific medicine[72] in their respective medical departments.

Educated through apprenticeship and formal medical classes, Sternberg received his MD from the College of Physicians and Surgeons of New York in March 1860. He served as a regular medical officer during the Civil War with the line and in general hospitals, and then went west with the postwar Army. At various posts across the country from 1868 to 1885, Sternberg taught himself microscopy and photomicrography, experimented with disinfectants and a variety of microbes in homemade laboratories, and began chasing the elusive

cause of yellow fever. Through publication of his work on yellow fever, S*treptococcus pneumoniae*, and other pathogens, and activities in national and international medical organizations, Sternberg became a respected bacteriologist and public health expert. He provided significant assistance to William Henry Welch in establishing the pathological laboratory at Johns Hopkins University in the early to mid-1880s and provided some of the school's first lectures in bacteriology. In 1887 Sternberg became director of the Hoagland Laboratory in Brooklyn, New York, one of the country's first bacteriological research labs. Sternberg began implementing the major theme of his administration—medical readiness through education and training—by establishing the Army Medical School.[73] Essentially, he followed Hammond's plan from 1863 by establishing a postgraduate school in the Army Medical Museum and Library. Again like Hammond, Sternberg had no funding for the project and therefore created the school with existing resources. In a note to the secretary of war, Sternberg made the purpose of the school clear:

> There is no need to teach medicine and surgery to graduates of our medical colleges, but there are certain duties of an army medical officer—which the college course has not prepared them—which are more important than the clinical treatment of individual cases of disease and injury. . . . A special education is needful to prepare a military man to undertake the protection of the public health. The course at the army medical school will prepare him to cope with the questions of practical sanitation that will be presented to him at every turn in his military career.[74]

This education included the duties of medical officers, military surgery, military medicine, and military hygiene; sanitary microscopy; pathological histology; bacteriology; and urinology. The laboratory at the Army Medical Museum was expanded to support the school and to begin original research and epidemiological studies as required. The ethos of lifelong learning through medical practice, continuing education, and research when the opportunity presented itself, no matter where an officer was stationed, was ever present at the school.

The fiscal austerity and reduction in posts brought about by the end of the Indian Wars in 1891, the depression of 1893, and traditional congressional parsimony kept the surgeon general continually battling for adequate numbers of, and pay for, officers and enlisted personnel. Sternberg worked to have surgeons and assistant surgeons assigned to urban areas early enough before their promotion examinations to take

advantage of advanced clinical and laboratory training opportunities at hospitals and specialty clinics. He ensured that the Surgeon General's Library, which had always provided books to officers on loan by mail, was prepared for increased requests. Sternberg also encouraged his officers to participate in national organizations such as the American Medical Association, American Public Health Association, and, after 1894, the Association of Military Surgeons of the United States, and publish in their journals as opportunities arose.

In an effort to reduce personnel losses and reduce expenditures in the Hospital Corps, Sternberg consolidated corpsman training at two posts, Fort Riley, Kansas, for men assigned to western posts, and Washington Barracks for those assigned to eastern stations. This allowed for better standardization of training and also shifted the operational focus of the Hospital Corps so that a pool of corpsmen was available for emergency deployment in the east.

Fiscal austerity notwithstanding, Sternberg was able to secure funds not only for hospital renovation and modernization, but also for new hospital construction. Between 1894 and mid-1898, nineteen hospitals were upgraded with central heat and electric lights, six hospitals were fitted with modern operating suites and laboratories, and five new hospitals were constructed.

From April 1898 to April 1902, the United States was either planning for, or engaged in, conflict abroad. Negotiations with Spain over its harsh treatment of Cuba resulted in a congressional declaration of war[75] in April 1898. The Army expanded to ten times its peacetime strength in a handful of weeks. Thousands of volunteers, all novices to regular military life, required training not only for combat but also for daily administrative operations and life in the field. Transportation to and evacuation from an island target required more coordination than the Army and Navy could manage. The awkward planning and execution of the Spanish-American War and the devastating, and largely preventable, typhoid fever epidemic in the mobilization camps during the spring and summer of 1898 were indicative of a country that had not been to war in 30 years. Although ground forces performed well, it was the US Navy that ensured a short and decisive war.[76] During peace negotiations in Paris, President McKinley obtained the entire Philippine archipelago, thereby creating an American colonial empire and the conditions for the Philippine War (1899–1902).[77] The Philippine conflict introduced the United States to the trials of guerilla warfare and challenges of securing a native population's confidence and trust.[78]

Mistakes made by Sternberg and too few regular medical officers as they attempted to manage medical training and administration in the mobilization camps and adapt Letterman's system to an amphibious assault provided the grist for scandalous accounts of wanton negligence and mismanagement. The Presidential Commission to Investigate the Conduct of the War—commonly known as the Dodge Commission[79]—exonerated Sternberg and the Medical Department of these charges, commenting that adequate medical care of soldiers was not forthcoming due to the department being asked to perform beyond its administrative, personnel, and transportation resources.

During the Philippine War the Medical Department was adequately funded and received increased organic transportation—including control of medical transport ships. Although a shortage of physicians and corpsmen became an issue as the war progressed, initially staffing numbers were not a problem. However, the guerilla nature of this war led to smaller and smaller units—all of which wanted medical support—chasing rebels through the jungle. As more and more physicians were sent forward, female contract nurses demonstrated their value, indeed their indispensability, to military hospital operations and the training of corpsmen. From this service the Army Nurse Corps was born.[80] The hospital corpsman, now better trained but all too often delivering care and evacuation without supervision, began the transformation to modern combat medic,[81] and field dentistry began to be employed, which led to the advent of the Army Dental Corps.[82]

Sternberg had to demonstrate, as had Lawson and Hammond, that wartime medical competence results from adequate resources, training, and experience. During Sternberg's tenure, furthermore, the new medical science and new medical professionals were not only integrated into the Army Medical Department but also successfully adapted to a wartime field environment.

Secretary of War John C. Calhoun, Major General Jacob Jennings Brown, and Doctor Joseph Lovell established the modern Army Medical Department based on Lovell's comments on his Northern Division medical report for 1817. With that document as a blueprint and his wartime experience as a daily guide, Lovell sought to convert his ideas of military medicine and the medical officer into an Army institution. The first priority in this endeavor was the military and medical education and professionalization of his personnel: the creation of the modern American medical staff officer. Lovell's small medical corps was his instrument to prove the relevance of routine medical services through the officers' daily

work in peace and war. Lovell and his corps legitimized Army medicine and made it a constituent part of the service over the next 18 years.

Each of Lovell's 19th century successors inherited a medically competent and militarily committed department. Lawson, Hammond, and Sternberg infused their own personalities into the department, leaving it indelibly changed for the better. All of them, however, worked diligently and successfully to not only maintain Lovell's vision through changing politico-economic climates, social expectations, and developing medical and military technologies, but also to pass on his legacy to the next generation of medical officers.

Joseph Lovell's legacy is the bedrock of our Army Medical Department today. His vision of the department and the essential nature of the medical staff officer endures as a guide for the present and the future.

Epilogue References

1. See Chapter 1, page 10 and note 24.
2. Harvey Brown, *The Medical Department of the United States Army from 1775 to 1873* (Washington, DC: Surgeon General's Office, 1873), 159.
3. Like Lovell, Lawson speaks primarily through official correspondence found in Record Group (RG) 112 at the National Archives and Records Administration (NARA).Historian Mary Gillett's article is the most well-researched biography of Lawson available; however, this author does not agree totally with her assessment of his character as soldier and surgeon general. Mary C. Gillett, "Thomas Lawson, Second Surgeon General of the US Army: A Character Sketch," *Prologue, Journal of the National Archives*14 (Spring 1982):15-24; Mary C. Gillett, *Army Medical Department, 1818-1865* (Washington, DC: Center for Military History, 1987), 125. See also James M. Phalen, "Thomas Lawson," *Army Medical Bulletin*, 52 (April 1940):33-37.
4. Percy M. Ashburn, *A History of the Medical Department of the United States Army* (Boston: Houghton Mifflin Co., 1929), 66.
5. Lovell to Lawson, 19 July 1832, Letters & Endorsements Sent, vol. 5, RG 112, NARA. Lawson's 4 July letter was not found by the author.
6. Brown, *Medical Department*, 165.
7. When Lawson, then at Camp Clinch, Florida, heard that Surgeon General Lovell might be replaced by a civilian physician, he sent Secretary of War John H. Eaton a long missal describing his service and claimed the "right of succeeding to the station, whenever it becomes vacant, now held by Doctor Lovell . . . upon two grounds: first, that I have devoted nineteen years, the best years of my life too, exclusively to the service of my country. Secondly, that I am the Senior Surgeon of the Army, & consequently first in line of succession to the Office of Surgeon General." Lawson to Eaton, 26 August 1829, Box 333 (Lawson), Personal Papers of Physicians and Medical Officers, RG 94, NARA.
8. Gillett, *Army Medical Department, 1818-1865*, 78-79; Brown, *Medical Department*, 162, 166, 174.

9. Lawson to Secretary of War Poinsett, 13 September 1837, Letters &Endorsements Sent, vol. 8, RG 112, NARA.
10. In 1842, Congress rescinded the direct enlistment of hospital stewards. In 1844, Commanding General Winfield Scott directed that stewards be obtained from the line and remain with their companies. Gillett, *Army Medical Department, 1818-1865*, 81.
11. Lawson to Secretary of War Poinsett, 26 July 1837, and Lawson to Assistant Quarter Master Major A. Mackay, 17 August 1837, Letters & Endorsements Sent, vol. 8, RG 112, NARA.
12. "As a greater number of Troops are ordered to the theater of War . . . I have to request that four ambulances in addition to those already contracted for may be prepared and sent into Florida as early as practicable." Lawson to Assistant Quarter Master Major A. Mackay, 14 September 1837, Letters & Endorsements Sent, vol. 8, RG 112, NARA. "The Quarter Master in Philadelphia is now preparing and will shortly forward about 20 properly constructed ambulances with complete sets of harness." Charles S. Tripler to Charles A. Finley, 29 September 1837, Letters & Endorsements Sent, vol. 9, RG 112, NARA.". . . It is desired that nothing should be left undone which would add to the comfort of the sick, and that you should at all times be supplied with a sufficient number of Litters and Ambulances to convey the sick and wounded," Benjamin King to Richard S. Satterlee, 24 January 1838, Letters & Endorsements Sent, vol. 9, RG 112, NARA. Although Gillett wrote that no record exists for these ambulances being put into regular service in Florida, the preceding letters suggest otherwise. Gillett, *Army Medical Department, 1818-1865*, 83. At the request of Surgeon General Lawson, Quartermaster General Thomas Jessup ordered the assistant quartermaster general in Philadelphia to establish a contract for the ambulances. However, there is no record of the contract being let. Lawson to Jessup, 26 July 1837, List of Letters Referred to the Quartermaster General, RG 92, NARA; Textual Records of the Office of the Quartermaster General, vols. 5 (1835-1837) and 6 (1837-1839), RG 92, NARA. It is difficult to track the accountability of the ambulances because they belonged to the Quartermaster Department. Medical officers, therefore, did not account for ambulances, as they did medical supplies and hospital stores, in their monthly reports.
13. Brown, *Medical Department*, 163-164.
14. Within the epaulette crescent was a laurel wreath surrounding the letters "**MS**" (Medical Service). Brown, *Medical Department*, 164.
15. Ibid, 170. Mower and Lovell had been friends and colleagues since May 1812, when they joined the 9th Infantry Regiment, and perhaps earlier. Tripler's original commission was October 1830 and that of Heiskell July 1832. That Mower interpreted the 1834 act as intended to create at least the foundation for positive military rank for Medical Department officers lends credence to the idea that this was indeed Lovell's intent.
16. Ibid, 181.
17. K. Jack Bauer, *The Mexican War, 1846-1848* (New York: Macmillan, 1974) remains a standard and valuable synoptic work on the Mexican-American War. See also James M. McCaffrey, *Army of Manifest Destiny: The American Soldier in the Mexican War, 1846-1848* (New York: New York University Press, 1994).
18. Brown, *Medical Department*, 175-176.
19. Ibid, quote 181; Gillett, *Army Medical Department, 1818-1865*, 111.
20. Bauer, *Mexican War*, 237; Gillette, *Army Medical Department, 1818-1865*, 111; Brown, *Medical Department*, 181. Duncan records Lawson as "on the Rio Grande"

when he received the invitation. Louis C. Duncan, "Medical History of General Scott's Campaign to the City of Mexico in 1847," *Military Surgeon* 48 (1921):436-470.

21. Lawson to Henry L. Heiskell, 11 February 1847, Letters & Endorsements Sent, vol. 19, RG 112, NARA.
22. Brown, *Medical Department*, 181. All histories of Lawson's "invitation," acceptance, and staff role are derived from Brown; however, explanations for Lawson's actions vary. Gillett appeared skeptical of Lawson's motives and wrote that he "insisted that he was present in an advisory capacity only. The question of why Lawson did not officially take over the duties of medical director for Scott's army has no obvious answer." Gillett, *Army Medical Department, 1818-1865*, 111. Medical officers such as Brown, Duncan, and this author interpret Lawson differently. Brown, writing in 1873, made no comment on Lawson's course of action, which implies that he saw it as normative for the era. Although Brown confirmed Lawson's role as advisory, General Scott also recognized it as directive. In his orders concerning the medical service and the general hospital established at Plan del Rio before the battle of Cerro Gordo, Scott ordered that the "Surgeon General will organize this important service and designate that hospital as well as the medical officers to be left at it." Brown, *Medical Department*, 179; quotes 185-189. Duncan, writing in 1921, noted that as "the entire Regular Army was . . . on the way to . . . the City of Mexico, it will not be wondered at that the Surgeon General accompanied it," and that Lawson's position was "rather nominal and honorary." Duncan, "Medical History of General Scott's Campaign," 440. Although Brown has a better understanding of the situation than Duncan or Gillett, none of the three could divorce their interpretations from a post-Jonathan Letterman world in which all aspects of field medical support had been organized into a functional system and the surgeon general directed his department from Washington. Lawson's medical department was extremely small in terms of facilities, personnel, and administration. Moreover, in 1847 most of Lawson's department was in Mexico. Scott and Lawson understood clearly that the role of the surgeon general could be administrative, advisory, and/or directive depending on current situational requirements, and that medical support in wartime, circa 1846, consisted of medical directors, purveyors, and hospital staffs providing all care within the theater of operations and answering to their respective line commanders. Lawson's role was neither nominal nor honorary, and there is an obvious answer as to why he did not officially take over as medical director: it would never have occurred to Lawson to interject himself into a role that not only did not exist, but more importantly would have hamstrung the very organization he directed.
23. US troops were also exposed to malaria, yellow fever, typhoid fever, and a variety of respiratory maladies. All of these struck heavily at new recruits and officers in regular and volunteer regiments because they were naïve both immunologically and to life in camp and field. Richard Coolidge, *Statistical Report on the Sickness and Mortality in the Army of the United States, Compiled from the Records of the Surgeon General's Office; A Period of Sixteen Years, From January, 1839, to January, 1855* (Washington, DC: A.O.P Nicholson, 1856), http://history.amedd.army.mil/bookdocs/mexicanwar/casualtystats/MexWarStats.html, accessed 29 May 2008; W.B. Herrick, "Remarks upon the Organization of the Medical Department of the Army, and the Effects of Marching and a Camp Life in producing and modifying Disease," *Illinois and Indiana Medical and Surgical Journal* 2 (1847-1848):225-232; John B. Porter, "Medical and Surgical Notes of Campaigns in the War with Mexico, during the years 1845, 1846,

1847, and 1848," *American Journal of the Medical Sciences* 45 (January 1852):2-37; 49 (January 1853):25-42; 26 (October 1853):497-333; William G. Proctor, "On the Diseases of the United States' Army on the Rio Grande," *Western Journal of Medicine and Surgery* 1 (third series, June 1848):461-489; H.R. Robards, "The Diseases of the Army of Occupation in the Summer of 1846," *Western Journal of Medicine and Surgery* 7 (second series, March 1847):185-196. For a review of disease morbidity and mortality during the conflict, see Ann R. Gabbert, "'They Die Like Dogs': Disease Mortality Among US Forces during the US–Mexican War," *Military History of the West* 31 (Spring 2001):27-50, and Vincent J. Cirillo, "'More Fatal than Powder and Shot': Dysentery in the US Army during the Mexican War, 1846-48," *Perspectives in Biology and Medicine* 52 (2009):400-413.

24. Porter, "Medical and Surgical Notes"; W.B. Herrick, "Surgery at Buena Vista," *Illinois and Indiana Medical and Surgical Journal* 2 (1847-1848):300-305, and "Surgery in the Hospitals after the battle of Buena Vista," *Illinois and Indiana Medical and Surgical Journal* 2 (1847-1848):414-418.
25. Porter reported that salacine "could not be relied upon in serious [fever] cases." Porter, "Medical and Surgical Notes," 23.
26. Porter, "Medical and Surgical Notes," *American Journal of the Medical Sciences* 47 (July 1852):29-30. Duncan criticized Porter, stating that "unyielding conservatism and prejudice blinded [him] to the value of the one great surgical discovery of his day. And in studying the medical history of this war one is unavoidably impressed by the ultra-conservatism of all the leading medical officers." Duncan, "Medical History of General Scott's Campaign,"446. Duncan, who wrote immediately after World War I, failed to consider that administering chloroform or ether in the field in 1846-1848 was much more difficult and the dosage less precise due to its volatility and delivery equipment than in 1917-1918. Lawson recognized chloroform's problems and did not support its use in the field. Porter also held it responsible for increased bleeding and slow wound healing. Gillett, *Army Medical Department, 1818-1865*, 115. Moreover, the nuances of hypovolemic shock and volume resuscitation—just beginning to be recognized during World War I—were completely unknown in 1848. Severely wounded soldiers in shock could be anesthetized, but waking them up often proved impossible. This is what Porter and some of his colleagues encountered and, hence, the ultra-conservatism complained of by Duncan was actually wise surgical practice.
27. Gillett, *Army Medical Department, 1818-1865*, 115-116.
28. Brown, *Medical Department*, 177-192.
29. Lawson, and every surgeon general since, argued that the number of medical officers required did not depend upon the numerical strength of the Army, but upon how that army was employed. At the time he made this particular argument, 1855, the Army was literally stretched from one coast to the other. Furthermore, without enough medical officers, more civilian physicians were employed. Lawson noted that from 1852 to 1855 the average annual expenditure on civilian physicians would have paid for 24 assistant surgeons. Brown, *Medical Department*, 207-208.
30. Mary T. Sarnecky, *A History of the US Army Nurse Corps* (Philadelphia: University of Pennsylvania, 1999), 10-12.
31. Brown, *Medical Department*, 207-209.
32. George A. Otis and D.L. Huntington, eds., "Ambulance Wagons," *Medical and Surgical History of the War of the Rebellion*, Part III, Vol. II, Surgical History

(Washington, DC: Government Printing Office, 1883), 944-957; Brown, *Medical Department*, 212.

33. Lawson was a native of Princess Anne County, Virginia, and, presumably, he considered Dr. Daniel C. Barraud his personal physician. Phalen, "Thomas Lawson," 36.
34. Lawson was apprentice trained probably in Princess Anne County, Virginia. He entered the Navy as surgeon's mate on 1 March 1809 and resigned to become an Army garrison's mate on 12 January 1811. Phalen, "Thomas Lawson,"33.
35. The only biography known to this author is James M. Phalen, "Clement A. Finley," *Army Medical Bulletin* 52 (April 1940):38-41.
36. Lieutenant Colonel and Surgeon Robert C. Wood had been expected to succeed Lawson. Wood had served in, and during temporary absences of Lawson had directed, the surgeon general's office since November 1854. He was son-in-law to former President Zachary Taylor, brother-in-law to newly elected Confederate States President Jefferson Davis, and had many influential friends in Washington. It appears the Lincoln administration did not care for his family ties. Phalen, "Clement A. Finley," 39; Wood Obituary, *Transactions of the American Medical Association* 21 (1870):493.
37. For a more in-depth analysis of the trials, tribulations, and scapegoats of war's first battles, see Charles E. Heller and William A. Stofft, eds., *America's First Battles, 1776-1965* (Lawrence: University of Kansas, 1986).
38. Although a bit dated, William C. Davis's *Battle at Bull Run: A History of the First Major Engagement of the Civil War* (Baton Rouge: Louisiana State University, 1981) remains a most concise, engaging, and enjoyable analysis of the battle. See also Ethan S. Rafuse, *A Single Grand Victory: The First Campaign and Battle of Manassas* (Wilmington: Scholarly Resources, Inc., 2002) and Edward G. Longacre, *The Early Morning of War: Bull Run, 1861* (Norman: University of Oklahoma, 2014).For the history of medical services at the time, see Horace H. Cunningham, *Field Medical Services at the Battles of Manassas (Bull Run)* (Macon: University of Georgia, 1968). Finley was held responsible for the medical fiasco. It appears he may have been suspicious that Surgeon Charles Tripler, now medical director for the Army of the Potomac's new commander, Major General George B. McClellan, was in a position to become surgeon general. Gillett, *Army Medical Department, 1818-1865*, 166-169.
39. Alfred Stillé, *A History of the United States Sanitary Commission* (Philadelphia: J.B. Lippincott, 1866), 132-137. See also W.Q. Maxwell, *Lincoln's Fifth Wheel: The Political History of the US Sanitary Commission* (New York: Longman's, 1956). While the US Sanitary Commission was active in the war's eastern theater, its sister organization, the Western Sanitary Commission, based in St. Louis, worked toward the same goals in the western theater. Jacob G. Forman, *The Western Sanitary Commission: A Sketch* (St. Louis: R.P. Studley & Co., 1864) and *Final Report of the Western Sanitary Commission from May 9th, 1864, to December 31st, 1865* (St. Louis: R.P. Studley & Co., 1866).
40. However, Hammond was still a very junior assistant surgeon in early 1862. His selection to surgeon general—supported by President Lincoln, the USSC, and Major General McClellan—offended some of the conservative "old corps" in the Medical Department and in Washington politics. Stillé, *History of the United States Sanitary Commission*, 128-137; Bonnie Ellen Blustein, *Preserve Your Love for Science: Life of William A. Hammond, American Neurologist* (New York: Cambridge University Press, 1991), 57-58. Secretary of War Edwin M. Stanton had an intense dislike of the USSC and of Hammond. Gillett, *Army Medical Department, 1818-1865*, 177.

41. Ibid, 50-51, 53-56.
42. In the pre-bacterial world of 1862, pathological science was seen as the primary road to advancement in medical science.
43. Hammond planned a postgraduate Army medical school modeled on the British army medical school at Netley. He asked for no extra funding to establish or support it and created a classroom and laboratory in the basement of the Army Medical Museum and Library. Upon being given a tour of the facility by Assistant Surgeon John Brinton, Secretary of War Stanton nixed it immediately. John H. Brinton, *Personal Memoirs of John H. Brinton, Civil War Surgeon, 1861-1865* (reprint; Carbondale: Southern Illinois University, 1996), 259.
44. Joseph J. Woodward, *The Hospital Steward's Manual* (Philadelphia: J.B. Lippincott, 1862).
45. Joseph J. Woodward, *Outlines of the Chief Camp Diseases of the United States Armies* (1863) (reprint, New York: Hafner Publishing Co., 1964); William A. Hammond, *A Treatise on Hygiene with Special Reference to the Military Service* (Philadelphia: Lippincott, 1863).
46. An excellent account of the Peninsular Campaign can be found in Stephen W. Sears, *To the Gates of Richmond* (New York: Houghton-Mifflin, 1992).
47. Jonathan Letterman's *Medical Recollections of the Army of the Potomac* (New York: D. Appleton & Co., 1866) is a concise and enjoyable account of his Civil War service. For a complete biography see Scott McGaugh, *Surgeon in Blue: Jonathan Letterman, the Civil War Doctor Who Pioneered Battlefield Care* (New York: Arcade, 2013).
48. A respected 32-year veteran, Tripler is a tragic victim of the war. His medical plan for the campaign was well made. However, he lacked a sufficient number of ambulances, which were under the control of the Quartermaster's Department, from the beginning, and, as the campaign went against McClellan, was overwhelmed by supply and transportation issues for thousands of troops with acute and chronic diarrhea and dysentery, typhoid fever, jaundice (probably hepatitis A), and intermittent fever (malaria).Tripler was not incompetent, but rather appears to have been unable to assume the initiative as the disaster engulfed him. Hammond did not hold Tripler wholly culpable but reassigned him to a training command in Ohio. Blustein, *Preserve Your Love of Science*, 60-62; Gillett, *Army Medical Department, 1818-1865*, 186-190.
49. Letterman, *Medical Recollections*, 5-31; Gillette, *Army Medical Department, 1818-1865*, 184-194, 208-215.
50. Letterman was under the command of McClellan at Antietam, Burnside at Fredericksburg, Hooker at Chancellorsville, and Meade at Gettysburg.
51. Letterman, *Medical Recollections*, 39, 58-63; Jonathan Letterman, "Extracts from a Report of the Operations of the Medical Department of the Army of the Potomac from July 4th to December 31st, 1862," in J.J. Woodward and George A. Otis, eds., *Medical and Surgical History of the War of the Rebellion*, Appendix to Part I (Washington: Government Printing Office, 1870), 97.
52. Letterman revised ambulance procedures in August 1863, and they were codified by Congress in "An Act to establish a uniform system of Ambulances in the United States Army, 11 March 1864." Letterman, *Medical Recollections*, 24-30, 162-178.
53. Up to this time the Quartermaster's Department owned and distributed ambulances.
54. The Battle of Second Manassas, 28-30 August, was a Confederate victory that allowed General Robert E. Lee's invasion of western Maryland, which culminated in

the Battle of Antietam on 17 September. Therefore, general hospitals in Washington and Annapolis were fairly full of Union casualties.

55. Letterman, *Medical Recollections*, 44; George A. Otis, *A Report on a Plan for the Transporting of Wounded Soldiers by Railway in Time of War* (Washington, DC: War Department, Surgeon General's Office, 1875), 7-11.
56. Prior to the Battle of Antietam, Letterman instructed the medical purveyor in Baltimore to have certain supplies packed and ready for rail shipment. Before Fredericksburg, he had depots positioned on Aquia Creek. Letterman, *Medical Recollections*, 34, 52-56, 65-66, 71; Letterman, "Extracts from a Report," 99-100.
57. Letterman, *Medical Recollections*, 93-99.
58. Letterman, *Medical Recollections*, quote 100.
59. Letterman, *Medical Recollections*, quote 112.
60. Hammond was later exonerated of all charges. Blustein, *Preserve Your Love of Science*, 86-93.
61. James M. Phalen, "Joseph K. Barnes," *Army Medical Bulletin* 52 (April 1940):47-51.
62. Ibid, 50; Mary C. Gillett, *The Army Medical Department, 1865-1917* (Washington, DC: Center of Military History, 1995), 7.
63. Gillett, *The Army Medical Department, 1865-1917*, 25-31; Robert S. Henry, *The Armed Forces Institute of Pathology, Its First Century 1862-1962* (Washington, DC: Office of the Surgeon General, 1964), 51-71.
64. Postwar reductions in force left the Medical Department with 210 medical officers in the rank of major and below and over 280 posts that required routine garrison medical services and support on campaign. Brown, *Medical Department*, 244; Gillett, *Army Medical Department, 1865-1917*, 12; Percy M. Ashburn, *A History of the Medical Department of the United States Army* (New York: Houghton Mifflin, 1929), 89.
65. Gillett, *Army Medical Department, 1865-1917*, 11-17.
66. James M. Phalen published short biographies of all five of these surgeons general in the *Army Medical Bulletin* 52 (April 1940), "Charles H. Crane," 52-54, "Robert Murray," 55-57, "John Moore," 58-61, "Jedediah H. Baxter," 62-65, and "Charles Sutherland," 66-69.
67. Phalen, "Robert Murray," quote 56.
68. Allen Nevins, *Grover Cleveland: A Study in Courage*, 2 vols, (New York: Dodd, Meade, 1932) remains the classic biographical work on Cleveland.
69. Louis H. Roddis, "James Rufus Tryon—Surgeon General of the Navy (1893-1897)," *Military Surgeon* 91 (November 1942):588-590; Howard Kelly and Walter Burrage, *Dictionary of American Medical Biography* (New York: Appleton, 1928), 1228.
70. Unless otherwise noted, this section is based on material in Stephen C. Craig, *In the Interest of Truth: The Life and Science of Surgeon General George Miller Sternberg* (Ft. Detrick, MD: Borden Institute, 2013).
71. Tryon was elevated over 14 officers and Sternberg over 10. The editor of the *Journal of the American Medical Association* lamented that the passed-over officers had been "practically court-martialled and reduced in rank without the semblance of cause or justification." J.C. Culbertson, "Surgeon General of the United States Navy," *Journal of the American Medical Association* 20 (27 May 1893): quote 594, and "Surgeon General of the Army," *Journal of the American Medical Association* 20 (3 June 1893):617. Careful observers of Cleveland would not have found these actions surprising because he had selected John Moore over six officers during his first term.

72. By 1893, improvements in anesthesia administration, the establishment of the germ theory of infectious disease causation, and aseptic surgical techniques had revolutionized surgery and medicine in large urban areas. Both the Army and Navy were eager to adapt these methods to field and sea environments.
73. Colonel Charles H. Alden was president of the faculty and lectured on the duties of the medical officer; Lieutenant Colonel William H. Forwood was professor of military surgery; Major John Shaw Billings was professor of military hygiene; Major Charles Smart was professor of military medicine and director of the chemical laboratory; Captain Julian M. Cabell was assistant to Forwood and instructor in Hospital Corps drill; and Captain Walter Reed was professor of clinical and sanitary microscopy and director of the pathological laboratory.
74. *Annual Report of the Army Surgeon General, 1893* (Washington, DC: Government Printing Office, 1894), 15.
75. Although a short (15 weeks from beginning to end of hostilities in Cuba) and at first glance unremarkable conflict, the Spanish-American War was a multi-faceted affair with tremendous significance throughout the 20th century. David F. Trask, *The War with Spain in 1898* (New York: Macmillan, 1981) remains a superb interpretation of the war. See also Graham A. Cosmas, *Army for Empire*, 2nd ed. (Shippenburg, PA: White Mane, 1994), and Ivan Musicant, *Empire by Default: The Spanish-American War and the Dawn of the American Century* (New York: Henry Holt, 1998). For an account of American postwar involvement with the Philippines, see H.W. Brands, *Bound to Empire: The United States and the Philippines* (New York: Oxford, 1992).
76. Admirals George Dewey and William T. Sampson virtually destroyed the Spanish Navy at the battles of Manila Bay (1 May 1898) and Santiago Bay (3 July 1898), respectively, thereby cutting off the Spanish army's lifeline to Spain.
77. See Brian McAllister Linn, *The Philippine War, 1899-1902* (Lawrence: University of Kansas, 2000), and Stephen D. Coats, *Gathering at the Golden Gate: Mobilizing for War in the Philippines, 1898* (Fort Leavenworth: Combat Studies Institute, 2006).
78. John Morgan Gates, *Schoolbooks and Krags: The United States Army in the Philippines, 1898-1902* (Westport, CT: Greenwood, 1973); William T. Sexton, *Soldiers in the Sun* (Harrisburg, PA: Military Service Publishing Co., 1939); Brian McAllister Linn, *The US Army and Counterinsurrgency in the Philippine War, 1899-1902* (Chapel Hill: University of North Carolina, 1989); and Stuart Creighton Miller, *Benevolent Assimilation: The American Conquest of the Philippines, 1899-1903* (New Haven: Yale University, 1982) provide insight into the political and social difficulties of counterinsurgency operations.
79. Retired General Grenville M. Dodge chaired the commission. *Report of the Commission Appointed by the President to Investigate the Conduct of the War Department in the War with Spain*. 8 vols (Washington, DC: Government Printing Office, 1900).
80. See Sarnecky, *History of the US Army Nurse Corps*, 29-58.
81. A complete history of the enlisted medical soldier—from hospital steward to combat medic—has not been compiled. The best chronological account is found in Gillett's comprehensive history of the Army Medical Department.
82. See John M. Hyson, Joseph W. A. Whitehorne, and John T. Greenwood, *A History of Dentistry in the US Army to World War II* (Washington, DC: Borden Institute, 2006).

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