2 The Pacific's Civil War Inheritance

The conclusion of the US Civil War left many loose ends. For a start, it put the CSN out of work. Consider John Randolph Tucker, the erstwhile commander of the CSN at Charleston, SC. He had spent years deterring the Union's amphibious assaults, only to be outflanked by William T. Sherman's overland army. Understandably, he and his colleagues found a chilly reception in the re-United States.[1] Likewise, a rapidly demobilizing USN imperiled the careers of Union officers, particularly those with skill sets at odds with the demands of the professional, bluewater force. John Lay, for example – the Union's most successful torpedo engineer – faced limited career opportunities as the USN returned to its prewar cruising stations or else drifted into a more general "naval slumber."[2] A small flotilla of ships, too, entered limbo. Union steam-powered monitors built to penetrate the riverine interior of North America rusted at their berths. Confederacy-bound cruisers and ironclads waited, unclaimed, in European shipyards and sundry ports around the world.

Luckily for Tucker et al. (if no one else), just as the US Civil War concluded, a rash of wars broke out in the Pacific creating demand for weapons and personnel. The template of Confederate self-strengthening looked useful to other "navies to construct" – especially if that technical template came supported by hard-won practical experience. Tucker took a position as a flag officer in the Peruvian Navy. Hunter Davidson outfitted a torpedo ship for Chile. The would-be Confederate ironclad CSS *Stonewall* wended its way from Bordeaux to Yokohama. These were not isolated cases. Indeed, after 1865 officers, *materiel*, and tactics from the US Civil War proliferated widely around the Pacific World as self-strengtheners confronted wars of national consolidation and the predations of North Atlantic imperialists.

This chapter traces the transnationally entangled afterlives of Civil War veterans, tactics, and equipment in the Pacific. Exploring Confederate naval innovations in transwar context – a comparative perspective that escapes the conventional temporal (1861–1865) and geographic (continental US) boundaries of the Civil War – it links the CSN to

three conflicts: (1) the Peru/Chile-led War against Spain (1864–1866) and the latter's imperial designs on the Pacific slope; (2) the Boshin War (1868–1869), fought between political factions in Japan during the Meiji Restoration; and finally (3) an early phase of Qing industrial military development, stimulated by the Japanese invasion of Taiwan (1874). As the Confederate war effort collapsed and the USN demobilized, the Pacific's "navies to construct" picked up (often literally) where the CSN had left off.

Like the concept of Confederate "self-strengthening," the proliferation of ex-Civil War expertise and *materiel* to the Pacific has attracted mostly parenthetical attention. The raw trauma of the US Civil War tends to focus historians on events inside the US logomap.[3] What interest in the postwar CSN that does exist is generally directed at its "European inheritance."[4] The *Times* of London had a sense of this as early as 1865 when it reassured readers, "we have lost our cotton, but we are getting wise in military science."[5] What a consolation prize!

European militaries did, of course, refine doctrine and tactics using lessons from the US Civil War, but foreign interest was hardly limited to the industrializing North Atlantic. The historian David Werlich demonstrated as much by chronicling the postwar service of the CSN officer John Tucker as a naval officer and hydrographer in Peru.[6] Tucker, in fact, was representative of a wider phenomenon: the spread of ex-Civil War expertise and equipment as a catalyst for regional naval development.[7] A transwar perspective suggests that the CSN's template for self-strengthening and the Union's response to it were not merely subplots in an internal rebellion but rather strategic and tactical experiments with international resonance. After 1865, comparative similarities between Confederate and Pacific self-strengthening programs became an increasingly thick web of transnational connections. The CSN offered a model (technical surprise via asymmetric advantages) for Pacific navy builders while Confederate defeat provided *materiel* and expertise to accelerate self-strengthening. Many seized that opportunity, finding in Confederate defeat a chance to build newly made navies and defend against North Atlantic power.

2.1 Peru and Chile Profit from Confederate Failure (1862–1866)

Nowhere was the effect of Civil War technology and expertise more apparent (or urgently sought) than along the Pacific slope of South America. In 1863, Spain dispatched a naval squadron to South America under orders to enforce long-standing territorial and financial claims against Peru and Chile.[8] With the US Civil War in the balance and

French forces entrenched in Mexico, the United States seemed unlikely (or unable) to enforce the Monroe Doctrine against European gunboats. In April the following year, Spanish forces occupied the guano-rich Chincha Islands (Peru) as collateral, precipitating a crisis and eventually an allied "War against Spain" or *Guerra Hispano-Sudamericana*.[9]

As relations between Peru, Chile, and these "Last Conquistadores" deteriorated in 1864, leaders in Lima and Santiago looked abroad for munitions and experienced personnel.[10] Animated by the same logic that motivated Mallory in 1861 – namely using weapons which compensated "by their offensive and defensive power for the inequality of numbers" – Chile and Peru dispatched agents to Great Britain, France, and the United States with instructions to purchase or commission modern naval weapons capable of upsetting the numerical advantages of the Spanish fleet.[11] The ironclad warships *Huáscar* and *Independencia* contracted in 1864 (detailed in Chapter 1) were the clearest examples: attempts to buy advanced technologies which could overmatch legacy Spanish investments. The end of the US Civil War supercharged the process. In 1866, the allies' "Confidential Agent" in New York, Benjamin Vicuña Mackenna, reported optimistically that the US Civil War had "introduced considerable alterations in the military arts, principally by the invention of armored ships, torpedoes, heavy cannons and sea-rams," which could be appropriated by the allied Chilean-Peruvian fleet.[12] Aurelio Garcia y Garcia, while contracting for the ironclad *Independencia* in Britain, agreed, stressing the "necessity of equipping our nascent navy only with ships at the height of the most recent innovations."[13] At the outset of their respective conflicts, the maritime forces of Chile, Peru, and the CSA were all "navies to construct" facing a "constructed navy."[14] As a result, a strategy of self-strengthening through novel technologies appealed to all three.

For these Pacific navy builders, the CSA's frustrations in Europe's shipyards came at an opportune moment. The Peruvian wooden corvettes *Unión* and *America*, for example, were originally commissioned by the CSA in France, but, in 1864, Peru purchased both after pressure from the US interrupted sale to the Confederacy.[15] The Peruvian Navy also took advantage of US Civil War's conclusion to buy the ironclad river monitors *Oneota* and *Catawba* (renamed *Manco Capac* and *Atahualpa*) surplus from the United States, skirting neutrality concerns via the aid of a private US firm.[16] Delivered to the USN in June 1865, too late for the Civil War, the ironclads were sold on the cheap. Chilean agents, too, worked with less spectacular success to acquire ex-Confederate blockade runners, recommissioning them as armed transports and cruisers.[17] In the wake of the Civil War, it was a buyers' market.

All told, the material composition of the Peruvian Navy in the late 1860s was largely a transwar by-product of the US Civil War. Just count the hulls. By 1867, Peru had managed to acquire a small armada of six warships. Four – the *Unión*, *America*, *Manco Capac*, and *Atahualpa* – were commissioned by either the Union or the CSA. One – the *Huáscar* – was built by a firm which had profited through CSA contracts and which employed a turreted design featured on a pair of CSN-commissioned ironclad rams. Another, *Independencia*, followed on speculative experiments for the Confederate agents. Given these connections, one could forgive the USN officer who in 1866 sighted *Huáscar* and *Independencia* and erroneously assumed they were, in fact, the very same rams "built by Messrs. Laird of Liverpool for the Confederate Navy."[18] By leveraging insights from the CSN and availability of surplus weapons, the Peruvian "navy to construct" became a fully realized newly made navy in a matter of months. Connections between the allied Republics and the US Civil War veterans ran deeper still as the War against Spain entered a more violent phase. In terms of personnel as well as warships, the CSN's loss was Lima's gain.

2.2 The Bombardment of Valparaiso and the Limits of International Law

While Peruvian and Chilean agents worked to acquire naval arms, Spanish frustrations with their Pacific campaign stoked new bellicosity.[19] On November 26, 1865, Chilean forces captured the Spanish schooner *Covadonga*; a small tactical reversal with deep psychological and political ramifications. Humiliated by the loss – and the halting pace of the war more broadly – the commander of the Spanish fleet, Vice Admiral José Manuel Pareja, committed suicide.[20] His death opened the way for a change in strategy. Pareja's successor, Casto Méndez-Núñez wasted little time in demanding concessions from the Chilean government and threatening to bombard Valparaiso in retaliation for the *Covadonga*. He had the spirit of the moment. In Madrid, even the "most moderate of journals" advocated for reducing Valparaiso and Callao "into a heap of ashes."[21]

Facing Méndez-Núñez's threats – and as agents abroad still scrambled to find naval weapons – Chile's diplomatic representatives appealed to the nascent structure of international law for protection. Legal historians have detected a growing (if limited) ability in the nineteenth century of "semi-peripheral" diplomats to resist industrial violence through the appropriation of European legal customs and ideals.[22] Valparaiso in 1866 offers a test case of that proposition, as well as a sharp contrast to the decidedly "hard-power" self-strengthening at port cities such as

Charleston (1862–1865) and later (as will soon be seen) Callao (1866). Where Chilean diplomats turned to the law, soldiers in Carolina and Peru preferred guns and torpedoes.

What, then, was Chile's theory of the case? According to the consensus at the time, an unfortified port was legally immune to bombardment because it offered no military utility. Citing Andres Bello's *Principles of International Law* (1832), the Chilean Foreign Minister Alvaro Covarrubias contended that shelling an unfortified city such as Valparaiso "constitutes a recourse to hostilities contrary to civilization, to human rights and to the most weighty duties of humanity."[23] It was an appeal befitting Chile's self-image as a satellite of the European community *and* (more tangibly) its military inferiority to Spain. Without a symmetrical answer to the Spanish squadron, options were limited. If Chile could not beat Spain with weapons, perhaps it could stave off an attack with words? As the Chilean Legation in Paris noted, Chile was the world's only state without a navy and yet possessing "all the signs of those countries ranked as civilized and advanced."[24] Covarrubias' argument gained considerable sympathy, not least from the British commander on scene who "threatened to blow every Spanish vessel out of the water if [Méndez-Núñez] fired one shot on the city."[25]

Chile's legal position, however, was eroded almost immediately by (false) rumors that its military had mined Valparaiso with torpedoes and other "insidious engines of this nature."[26] In essence, Spanish officers accused the Chileans of having it both ways: Diplomats claimed Valparaiso was unfortified while the Chilean military hedged its bets with hidden weapons. Fears that US-made torpedoes and other arms had been shipped to Valparaiso exacerbated matters, particularly after the Chilean President José Joaquín Pérez studiously refused to deny their existence.[27] Amid the confusion, in February 1866 a concerned British representative in Santiago took pains to "impress upon [President Pérez] the evils to which the fortified towns on the coast of Chile … would be subjected" if the Chilean military deployed torpedoes against the Spanish fleet.[28] For his part, Méndez-Núñez threatened to fire on the city without notice if his forces were attacked by torpedo-mines.[29] Less than a year after the Confederate defeat, Civil War tactics were a potent menace – if only in the minds of Spanish commanders.

But unlike at Charleston, the threat of new naval technologies at Valparaiso amounted to a self-defeating bluff. Valparaiso's harbor had not been mined but failure to clarify that fact allowed Spanish commanders to claim the city had military defenses and was therefore a legitimate target. On March 31, after a series of ultimatums, the Spanish fleet opened fire on Valparaiso. Casualties were light, owing to the

city's partial evacuation, but damage to property was reckoned in the millions of dollars.[30]

Confronted in London, the Spanish minister in Britain "declined all moral responsibility" and defended the legality of the squadron's actions as a proportional response to "reprobate means of warfare," that is, torpedoes and privateering.[31] The Confederate defenders of port cities such as Charleston had put those means to good effect. The Chileans had not, and the results told the tale.

If the limits of the "Law of Nations" were apparent in the embers of Valparaiso, so too were the empty pretensions of the Monroe Doctrine.[32] In a circular, the Chilean Foreign Ministry attacked the passivity of the United States and Britain in the face of this "unprecedented international crime."[33] "The protection of the United States," the Chilean *Mercurio del Vapor* observed acerbically, "is nowhere to be seen."[34] Subsequent offers by the United States to mediate the dispute, the Peruvian Foreign Ministry concluded, "cannot truly be taken seriously."[35] Royal Navy ships, too, had watched idly as Spain shelled "the opulent and elegant emporium of the commerce and navigation of the Pacific."[36] Public outrage in Britain to the thought of its ships cowering before a Spanish ironclad became a powerful argument for British naval construction.[37] After the attack, Covarrubias excoriated the British ambassador in Santiago for depriving Chile of a means of defense by making the "unequivocal insinuation" that if Chile did not mine the port, the foreign powers would defend its neutrality.[38] Even as British agents held up Chilean arms purchasing in Europe, no help came from the British fleet in the Pacific.

The lessons of Valparaiso were manifest: International law was an insufficient check to North Atlantic gunboats and a more concrete means of resistance was necessary. Chile's Foreign Ministry declared, "if this cowardly abuse of force" was tolerated by "the great powers of Europe and America, the weaker states will have to completely change their attitude and views in their international relations."[39] Chile did just that. Shortly after the Spanish attack, engineers began installing fortifications along the Chilean coast, replacing the supposed power of European legalism with that of North Atlantic armaments.[40] Peru's military took the same lesson years earlier, leveraging CSN innovations and hard-won expertise as a means of defense.

2.3 The Charleston Template in Callao (1866)

As the Spanish fleet menaced Valparaiso, military preparations in Lima's seaport Callao assumed a fevered pitch. On land, the hills above the port sprouted an assortment of artillery, including Armstrong and Blakely

cannon capable of hurling artillery shells nine miles.[41] At sea, naval technologies and expertise deployed in the US Civil War found immediate application. As agents such as Salcedo and Garcia y Garcia hurried along their warships to completion in Britain, the local acquisition of ironclads, torpedoes, and even the ex-commander of the CSN forces at Charleston transplanted a form of the CSN's technical-strategic template to the Pacific slope.

Ironically enough, the first steps in this effort were taken not by CSN personnel but by the ex-USN engineer and torpedo expert John Lay – one of the earliest converts to the CSN's strategy of industrial, asymmetric war.[42] At Valparaiso, the Spanish fleet faced mere rumors of torpedo-mines, but John Lay brought real expertise to Callao. This, too, was largely a product of Confederate innovation. Lay gained that experience through observation of Confederate advances in the Civil War and some aggressive self-promotion to his USN superiors. In 1863, responding to Confederate torpedo boat attacks against Union blockade ships, Lay was singled out by Union officers to present his "plan of a torpedo" as a means of defending against a Confederate ironclad on the Roanoke River.[43] A year later, he helped convert discarded boiler tubes into a spar torpedo used to sink one of the few seaworthy CSN armored warships – CSS *Albemarle*. It was a feat that earned Lay's partner in the scheme (William Cushing) a global reputation, he claimed, as a "new Nelson" and Lay a lifetime of work as a torpedo engineer.[44]

Despite these precocious steps, in the summer of 1865, Lay found himself in a similar predicament to his adversaries in the CSN: underemployed and attractive to foreign militaries. Demand for asymmetric weapons dried up as the USN demobilized.[45] Lay resigned in May 1865. Months later, while traveling in Peru in search of work, he came to the attention of the Chilean Consul in Paita who offered him an "advantageous position in Chile" as a torpedo expert.[46] As was obvious to one British official, Lay's reputation as the inventor of an "efficient class of torpedo" carried considerable weight with the allied Republics.[47] Lay jumped at the chance. In 1866, he traveled to Callao where the Peruvian government contracted him to defend that port with torpedo-mines.[48] Lay's experience, as Chile's agent in the United States put it, as a "truly intelligent engineer in the construction of this article of war" made him immediately valuable to an alliance facing a materially superior Spain.[49]

In Callao, as he had during the US Civil War, Lay set about modifying metal tubes from steamship engines for use as naval mines. The need for this fundamental but scarce material brought him into almost immediate conflict with the Peruvian staff. On February 27, 1866 (a month before the Spanish attack on Valparaiso) Lay wrote the Peruvian Naval

Command that he had discovered 325 boiler tubes in storage and hoped to convert them into torpedo-mines.[50] It was an expensive proposition. While the Peruvian construction commissions in Britain worked to acquire steamship engines, Lay proposed to cannibalize the literal engine of nineteenth-century industrial power in order to build asymmetric weapons.[51] The arsenal in Callao rejected the notion as an affront, insisting that the tubes were "of great necessity for the ships of our squadron."[52] Lay, the arsenal, and the Peruvian staff traded notes for several days, before reaching an agreement to provide "the inventor Juan Lay" with the necessary materials for his efforts.[53] Having made his mark transforming boilers into torpedoes for the USN, John Lay picked up in Callao where he left off, ruffling feathers.

Along with torpedoes, Peruvian authorities hastily attempted to produce what the CSN's Bulloch would have called "improvised armored vessels" modeled on those tested during the US Civil War.[54] While the *Huáscar* and *Independencia* received their finishing touches in Britain, Peruvian military officials in Callao turned to organic improvisation. In 1864, engineers worked to modify two hulls, the *Loa* and *Victoria*: an ironclad monitor and ram suitable for coastal defense.[55] Foreign military officials in the region instantly recognized the "Peruvian Iron-Clad" as derivative of Civil War technology.[56] They were, the British naval historian Herbert Wilson wrote in 1896, using the names for the warships at Hampton Roads, "a small monitor," and a "diminutive Merrimac."[57] Also using the vocabulary of the Civil War, Commodore John Rodgers, of USS *Vanderbilt*, reported that "the Peruvians have two armored ships": one, the *Loa*, was a monitor "and the other, the *Victoria*, [was] constructed in the style of the Confederate monitors, covered with rails from the railway."[58] In the same way Lay had repurposed the steamship engines to build torpedoes, so too did constructors in both Peru and the Confederacy use railroad tracks and steam engines to build crude ironclads.[59] Together, these torpedoes and locally produced ironclads meant that Peru's naval defenses at Callao were much closer in inspiration and appearance to the CSN's strategy at Charleston than the legalistic defense at Valparaiso.

When put to the test, Callao's defenses – like those at Charleston before it – proved remarkably effective. On May 2, 1866, the Spanish squadron attacked Callao where, in contrast to Valparaiso, it met stiff Peruvian resistance. Under fire from coastal defense batteries, Méndez-Núñez's forces were repulsed with heavy casualties.[60] No ships were sunk, but Peruvian shellfire did considerable damage. For several days thereafter, timbers shot away from Spanish warships washed ashore in Callao.[61] Méndez-Núñez attempted to save face, claiming to have

"chastised Peru," but his argument evoked mostly "pity" from foreign observers.[62] The Spanish fleet had been beaten back. Méndez-Núñez died not long after in 1869, at least in part as a result of wounds he received in the battle.[63]

The political implications were substantial. May 2 (*El Dos de Mayo*) remains the namesake of Peruvian plazas and provinces – with good reason. Not only did the battle check Spanish war aims, it also upset the conventional wisdom about power in the Pacific. Armed resistance to European maritime imperialism through the local adaptation of industrial technologies was suddenly possible. The US South Pacific Squadron commander George Pearson assessed that "the Peruvians in this conflict have proved to the South American Republics that with energy and bravery and heavy guns they can not only protect themselves, but the foreign residents who conduce so much to their welfare, against wooden ships at least."[64] Ecuadorian officials were so impressed that they proposed a "confederation of the Southern American Republics on the Pacific" or "Confederation of the Andes" as a long-term security pact.[65] The Chilean *Mercurio del Vapor* reported that Callao proved the republics of South America were not dependent on Britain or the Monroe Doctrine for protection: "Spain has been humbled without such aid."[66] At Valparaiso, diplomats and politicians had appealed to international law, without result. At Callao, Peru demonstrated the possibility of mobilizing the Confederate template against North Atlantic militaries for local defense.

All that said, the value of the naval technology at Callao was likely less important than land-based coastal defense batteries. Spanish and Peruvian accounts stressed as much.[67] "The feats of the [ironclad *Loa*] and its first test of arms" were remembered mostly by vendors, inflating the ship's importance while soliciting remuneration from the Peruvian government.[68] John Lay's most significant contribution to the defense of Peru was his reputation for "villainous torpedoes."[69] Though it was true, as Vicuña Mackenna noted in his memoir, "none of [Lay's torpedoes] managed to bring to the bottom any of the Spanish ships on the 2nd of May, it is no less evident that the idea of their danger did much to impede" the Spanish fleet.[70] Lay's 1899 obituary counted his "distinguished" service in Callao among his chief achievements.[71] His example at Callao certainly strengthened Peruvian aims to acquire and deploy modern, submersible weapons. On May 5, 1866, the Spanish flagship *Numancia* captured a Peruvian spar torpedo launch outside of Callao; a near mirror image of the tactics and technology used by Lay and his Confederate colleagues (and similarity acknowledged by Spanish officials).[72] In the following months, Lima's naval commission in the United States attempted to purchase not only "floating batteries"

(armored warships) but also asymmetric weapons such as the "torpedo" and a "submarine boat."[73] A decade later, Lay would win repeat business from Peruvian leaders for his torpedoes, this time for use in the War of the Pacific (1879–1884).

That, though, is a later story. In May 1866, officials in Santiago and Lima had more pressing concerns: namely what to do with success? After Callao, military officers pondered their next steps amid uncertainty about Spanish intentions. Contradictory reports swirled: Méndez-Núñez would retire from the Pacific; he would regroup in Manila; or perhaps reinforcements would arrive from the Atlantic.[74] Not content to wait, the Peruvian leader Mariano Ignacio Prado nurtured an ambition to seize the initiative after Callao and launch an offensive war against Spain. As the ironclads *Huáscar* and *Independencia* arrived in the Pacific, this looked like a real possibility. Right on time, a small cohort of ex-CSN advisers reached in Callao ready to counterattack the Spanish Empire in the Pacific, armed now with a Peruvian newly made navy that to them looked eerily familiar.

2.4 Tucker and Peru on the Offensive against Spain (1866)

As with other self-strengthening movements, Peru's demand for European-built armored warships was matched by a drive to acquire the technical expertise needed to employ them. For obvious reasons, the United States looked like a promising place to start. CSN officers there had, after all, just spent four years resisting a materially superior USN and laying out a basic template for resistance. That, moreover, as the diplomat Benjamín Vicuña Mackenna reported, Confederate defeat had left "some of the most notable leaders" of the CSN without prospects was an opportunity too good to pass up. In January 1866, Vicuña Mackenna notified his superiors that "some of the most eminent officials of the Confederate Navy" had offered services to Chile, including Glassell, "who was the first to use torpedoes," and "Commodore Tucker, who commanded the Southern squadron."[75] Though Glassell eventually demurred, he vouched for Tucker as a man who "would take advantage with *gusto* the opportunity … to abandon forever this country and look for his fortune in Chile."[76] The USN certainly wasn't hiring.

Given the conditions on the Pacific slope, Tucker's credentials were almost certain to attract attention. During the Civil War he achieved familiarity with the full suite of CSN innovations: ironclads, torpedoes, and semi-submersible boats.[77] After Appomattox, Tucker spent several months in a fruitless search for employment in the United States and the

merchant marine.[78] Unsatisfied with civilian life, he eagerly accepted a Peruvian offer of a military command. Hired by Peru, Tucker set about recruiting other CSN officers with experience employing modern industrial weapons.[79] David Porter McCorkel – who served with Tucker on CSS *Patrick Henry* – took a position as "captain of the fleet," while Walter Raleigh Butts – an officer from CSS *Virginia* – proffered his services as a "commander and aide."[80] They brought with them their expertise from the CSN and even key doctrinal publications from the conflict, such as Foxhall Parker's *Squadron Tactics under Steam*, which would live on in Chile and Peru long after the ex-Confederates had left.[81]

Once in South America, Tucker's ambitions were proportionate to the extraordinary concentration of naval power entrusted to him.[82] He arrived on the Pacific slope to find the *Huáscar* and *Independencia* along with several ships originally built for the Confederacy or the Union. For him, the possibilities seemed almost incredible, since as early as 1864, Tucker had conserved newspaper articles about British-built ironclad warships, fantasizing about the power they would afford him.[83] The Peruvian fleet – most of it a holdover from or derivative of the Civil War – offered a chance to translate CSN rhetoric into reality. Reaching Peru shortly after the Battle of Callao, he installed his command aboard *Independencia* and began preparing, the Peruvian government hurriedly cabled its consulates, "for offensive war."[84] By 1866, a curious derivation of the Confederate "navy to construct" appeared – through transnational exchange and coincidence – in Peru as a newly made navy. Tucker was ready to use this small industrial force, not merely for defense against North Atlantic imperialists but to strike back at the empire.

As a holdover from the Civil War, Tucker's plans continued to emphasize the use of novel weapons to upset North Atlantic power. Adding another layer to the Civil War's afterlife in Peru, Tucker planned to augment this fleet with offensive torpedo weapons – a logical outgrowth of the technologies he had overseen at Charleston.[85] Details are sketchy, but the ex-CSN officers fitted some combatants with torpedo launches that could be deployed at sea. Other warships had torpedo spars attached directly to their hulls.[86] The senior British official in the South American Pacific reported that Tucker and the Peruvians placed "considerable reliance on their torpedoes and have three steam launches fitted for them in *Independencia*."[87] Requisitions for the ironclad *Independencia* in 1866 suggested exactly these sorts of modifications.[88] The adaptation of Peruvian warships was a testament to the lasting influence of the CSN's asymmetric war against the Union transplanted (on a larger scale) to the Pacific.

How Tucker would use this ironclad and torpedo-armed newly made navy was hotly debated. Nervous reports about his intentions passed

between consulates. One suggested an expedition against Cuba.[89] Another warned of an attack against unspecified "Spanish Colonies."[90] Still another predicted the *Huáscar* and *Independencia* would be employed in the Atlantic as "corsairs, in order that [Peru and Chile] may reap some of the pecuniary advantages."[91] In fact, Tucker and his Peruvian employers hatched something altogether more extraordinary: a plan to destroy Spanish morale by steaming the allied armored force across the Pacific and attacking (like a proto-Dewey) Spanish Manila.[92] There was a logic to it, noted Powell, "the Philippine islands being farthest from Spain and most convenient for [Tucker]."[93] The very same Lima–Manila connections which had long made the Pacific a "Spanish Lake" now rendered it vulnerable to industrial weapons proliferating in the region.[94] With any luck, the allied fleet would then deploy additional vessels to attack Spanish colonies in the Caribbean and, perhaps, even bombard the Iberian Peninsula.[95]

It was a moment of possibility – one envisioned by men such as Mallory and Bulloch but fully realized only after the war in Peru. With the CSN template in hand and enabled by Civil War-era expertise, Tucker seized on an ephemeral inversion of conventional power relations between the Pacific and industrial North Atlantic. The British representative in Rio de Janeiro believed that "there is not one of the Spanish vessels of war in the Pacific, not even the ironclad *Numancia*, which is a match individually either in offensive or defensive armament or in speed for either of the above mentioned Peruvian ironclads."[96] The senior US officer on the Brazilian Station was more equivocal but admitted that "by appearance [the Peruvian ships] are very formidable."[97] One US officer wondered how "Peru and Chili would crow if they should happen to get the second great Spanish Armada under."[98] Confederate dreams of bombarding New York with the Laird Rams looked tame by comparison but they followed the same logic.

Tucker's plans, as his biographer and colleague recorded, were "favorably considered by the Governments of the allied Republics," but ultimately abandoned.[99] Internal political disagreements between Chile, Peru, and Tucker's "*Yanquis del Sur*" (as they were incongruously known) played a role.[100] Staffing disagreements had bedeviled discipline for months. Tucker and his colleagues had offered their letters of resignation three times before they were finally – and according to President Prado "painfully" – accepted.[101] *El Comercio* (Lima) concluded that it was simply "incompatible with the decorum of Peru … that the naval operations of the republic, in the moment of a foreign war, were entrusted to a foreign chief."[102] Nationalism cut the transwar ties which had been forged by military exigency between the Allied Republics and

the CSN. In any case, military operations were soon overcome by diplomacy. Shocked by the growing expense of its expedition and bloodied by Peruvian coastal defenses, Madrid began to extricate itself from the conflict, just as Tucker's preparations got underway.[103]

Regardless of its (in)feasibility, Tucker's audacity makes for a curious and underdocumented subcurrent against the tide of nineteenth-century European maritime hegemony. While imperial powers relied on industrial naval weapons to subdue colonial dependencies, Tucker and his transnational forces plotted to counterattack the Spanish Empire with a modern, ironclad, and torpedo-armed fleet. Uncertainty created by technological change and the international circulation of industrial weapons made competition between a postcolonial state and a European power a realistic possibility. As with the Confederate "navy to construct," technical advances stoked strategic aims. By appropriating CSN technology, tactics, and even personnel, Pacific self-strengtheners believed they could strike back. That belief was not an unreasonable one. In November 1866, the senior British naval commander in South America reported that, whatever its aim, this CSN-led Peruvian squadron was capable of doing "considerable mischief to the enemy."[104] It was a prescient assessment. A decade later, the *Huáscar* would, in fact, do mischief to none other than the Royal Navy at the Battle of Pacocha (1877) discussed in Chapter 3.

Little of this was lost on Rear Admiral John Dahlgren, the USN commander who had witnessed the CSN strategy firsthand during the blockade of Charleston.[105] While passing through the Pacific in 1866, he smarted at the idea of extending to his ex-enemy Tucker "customary courtesies" and worried (erroneously) that Tucker held "the rank of Vice Admiral, a good deal superior to my own."[106] His bitterness was understandable: a product of frustrations about his failure at Charleston and an incredulous sense of USN inferiority to Peruvian forces in the region. Sensing a gap, Dahlgren requested additional US warships for Pacific, noting that "the Peruvians have two, *Independencia* and the *Huáscar*, so that our flag alone will be without an ironclad."[107] Secretary of the Navy Gideon Welles denied his request, but Dahlgren's complaint and the sentiments behind it would echo in the coming decades as the demobilizing USN reckoned with the proliferation of newly made navies.[108] Having defeated the CSN in the Atlantic, the CSN's template caused fresh headaches for the USN in the Pacific.

2.5 Hunter Davidson's Torpedoes Arrive Too Late

Chilean officials made their own efforts to appropriate lessons and tactics from the US Civil War. Initially, strategists proposed a *guerre de*

course to interrupt Spanish commercial and military lines of communication. For the Chileans and Spanish alike, the potential of cruiser warfare had been vividly illustrated by the Confederate commerce raiders – CSS *Alabama* in particular. In 1865–1866, the parallels stalked the imagination of the Spanish diplomatic corps. Spain's legation in London reported that Captain Raphael Semmes, *Alabama*'s ex-commander, had outfitted a ship on behalf of Peru and Chile "for the purpose of going to the Spanish West India Islands."[109] In New York, diplomatic representatives protested that Chilean agents had been "sent to the United States for the purpose of organizing vessels of *marque* to act against the Spanish Commerce of Cuba and West Indian Islands."[110] There were even rumors that a joint-stock company had been formed in the Pacific with "the object of commissioning privateers from California to act against the Spanish commerce in the Philippine Islands."[111] For the *New York Herald*, the situation was uncannily familiar: "It appears that England, actuated by a love of Chilean copper and guano, as she was formerly by a love of Southern cotton, has consented to furnish Chile with vessels of war, as she formerly served the rebel Confederacy."[112]

Spanish protests had their desired effect. Attempts to outfit privateers and commerce raiders exposed Chilean agents to the same neutrality concerns and sanctions which had curtailed CSN shipbuilding in Europe. With Anglo–US litigation regarding *Alabama* still pending, the British government proclaimed "a strict and impartial neutrality in the contest between" Spain, Peru, and Chile.[113] Thereafter, British municipal police officers surveilled the construction of potential Chilean combatants at Victoria Docks, lest they be shipped out to a belligerent party.[114] CSN agents in Liverpool would, no doubt, have empathized with the challenges faced by the Chileans. Contemporaneously, in New York, the outfitting of the Chilean privateer *Meteor* provoked a related transatlantic legal debate that scuttled its departure.[115] The frustrated Vicuña Mackenna (with some justification) decried the "famous *neutrality* of Mr. Seward," while facing criminal indictment in the United States for illegally organizing arms shipments to Chile and Peru.[116]

After failing to arm privateers and cruisers, Chilean agents overseas turned next (like the CSN and Peru) to the torpedo. The weapon's potential in mind, Vicuña Mackenna worked unsuccessfully to organize an abortive "expedition of four Confederate officials, expert in the use of torpedoes" to South America.[117] Chilean agents in Europe made a more productive contract with Hunter Davidson, the ex-commander of the electric torpedo-mine network on the James River. As tensions with Spain festered, the Chilean representative in London, Ambrosio Rodriguez, commissioned Davidson and an associate named H. H. Dotty

to man and equip the commercial steamer *Henrietta* for torpedo warfare.[118] Davidson, like other CSA/N officers, was attractive because of his firsthand experience with the modern, asymmetric weapons "born in the South."[119] His most prominent achievement during the Civil War was his responsibility (he tirelessly pointed out) for "the *first* vessels ever *injured or destroyed in war* by electrical torpedoes."[120] Perhaps more notable to Chilean arms-buyers, Davidson's spar torpedo attack against USS *Minnesota* was, by his reckoning, the first time a torpedo boat had attacked another combatant without destroying itself.[121]

Davidson and Dotty's basic concept was to modify the *Henrietta* to carry smaller steam launches equipped with torpedoes, and then to deploy them as flotilla once at sea; a mirror of the modifications proposed by Tucker to *Independencia* in Peru.[122] In the winter of 1865–1866, Dotty and Davidson set to work, sailing from London in February 1866, under Davidson's command but with a "British certificate of captaincy" in order to evade neutrality laws.[123] The unhappy transit took four months, impeded by secrecy, weather, and several inauspicious mechanical failures (at one point Dotty was forced to work the pumps to avoid foundering). Still, on arrival in Valparaiso, Dotty, ever the salesman, hoped to satisfy the "high expectations of the government with respect to the future utility of this ship."[124]

As it happened, Dotty and Davidson's plans – like Tucker's – were overcome by events. Spanish forces retreated from the region just as *Henrietta* arrived. Without a materially superior enemy to confront, asymmetric naval war was a dubious investment for the Chileans. John Lay separated from the USN in 1865 for much the same reason. In July 1866, the Ministry of the Navy terminated the contract, informing Dotty and Davidson that their "services here were already unnecessary."[125] Davidson spent a month in Valparaiso (at $3 *per diem*) turning over the ship in order "to enable the Chilean government to prepare her for service," ideally along the lines he and Dotty had intended.[126] He was disappointed. Chilean officials converted the *Henrietta* into a dispatch ship and distributed its complement of torpedo boats across the fleet for miscellaneous tasks.[127] Davidson, whatever the promise of his inventions, found himself without a navy to serve for the second time in as many years.

Failure aside, Davidson's value as a naval adviser endured for some time in South America. That was true at least in part because he never missed an opportunity to defend his place in the historical record as one of the torpedo's first and most successful adopters. As late as 1906, he would write to the magazine *Confederate Veteran* vaingloriously highlighting his contributions to the making of modern war.[128] That self-promotion paid off. A decade after the Chilean disappointment,

the Argentine government hired Davidson to organize a system of torpedo defenses. In 1875, retracing his steps to Britain, Davidson placed orders for steam launches suited to torpedo warfare from the shipbuilder Yarrow and Hedley.[129] The launches in question were, as Alfred Yarrow's biographer noted, the first time "we find the torpedo and the torpedo-boat united in an indissoluble bond."[130] Having flowed out to the Pacific, technological innovations and practical experience flowed back. It would become a familiar pattern in the Pacific's wars during the following decades.

2.6 A Confederate Ironclad in Hokkaido

Beyond the Americas, the Confederate ironclad CSS *Stonewall* was likely the most notable piece of military hardware left stranded by the conclusion of the Civil War (Figure 2.1). Notable for its design, surely, but more so for its deeply ironic origin and ends. The armored ram *Stonewall*

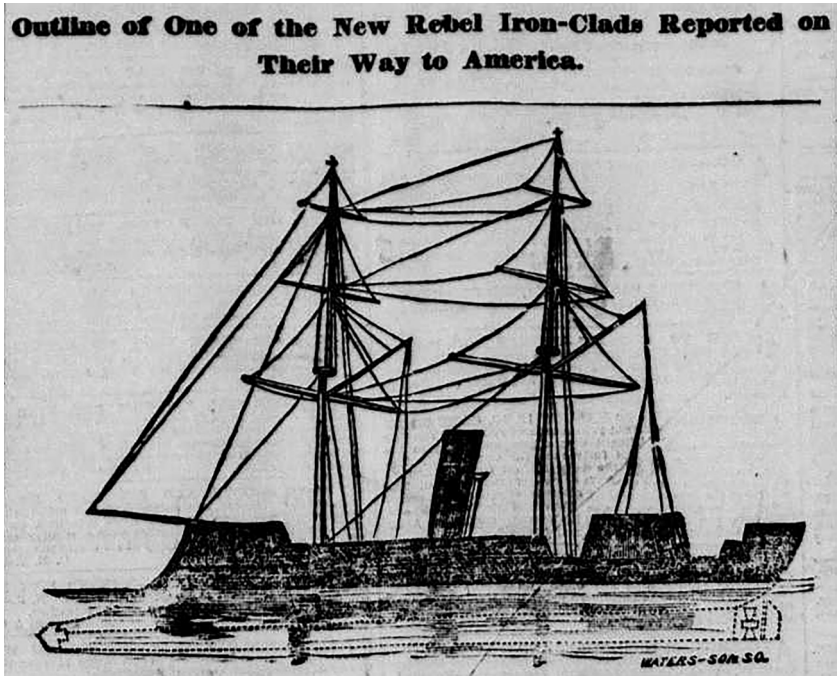

Figure 2.1 *Stonewall*
Source: "The Dano-Rebel Ram Sphynx," *New York Herald*, February 15, 1865.

was a French-built weapon, intended to undermine the United States, but which ultimately became one of the primary instruments of national consolidation during Japan's Boshin War (1868–1869): the final act of the Meiji Restoration, fought between the imperial government and the remnants of the Tokugawa on the island of Hokkaido.[131]

Built in France by the "eminent constructor" L'Arman in Bordeaux, CSS *Stonewall* was a small ship, which compensated for its lack of size and "disposition to act the part of the leviathan" with heavy armor.[132] Originally ordered by the CSA, the vessel (due to neutrality complications) was briefly purchased by Denmark (1864) before coming under Confederate control in January 1865.[133] That spring, CSA propagandists celebrated the ship as a miracle weapon; a sort of *deus ex machina* of the flagging Confederate war effort. In March 1865, as Confederate armies retreated, the *Dallas Herald* comforted readers with slim hopes, writing: "What is to prevent the Confederate iron-clads from entering the harbor of New York?"[134]

Timing, as it turned out. After crossing the Atlantic, the ram arrived in Havana in May 1865, just as the Confederacy collapsed. The cruise of CSS *Shenandoah* went on in the Pacific, but the war was over in the Atlantic. In an instant CSS *Stonewall*, as its commander Thomas J. Page recalled, "found herself a useless hulk."[135] Cuban authorities seized the vessel and later surrendered it to the United States.[136] After a period of refurbishment, the Department of the Navy concluded that because it was "liable to rapid deterioration," retaining the ship was inadvisable.[137] The USN had too many ironclad monitors as it was, selling some for scrap and others – as detailed earlier – to Peru.

Saddled with the ship, another Pacific state came to USN officials' rescue: Japan. In 1866, the Japanese Shogunate was yet another of the world's navies to construct in the market for advanced warships.[138] Just as Peruvian and Chilean agents snapped up ships left undelivered to the Confederacy, Japan's representatives in the United States saw an opportunity to capitalize on innovation and surplus capacity.[139] Japanese leaders had installed hundreds of coastal defense fortifications in the wake of Commodore Perry's visits (1853, 1854) but, as the historians David Evans and Mark Peattie noted, saw their greatest opportunity in "the rapid and revolutionary changes in naval technology" – a chance made all the more attractive by the fact that the Japanese "navy to construct" was unburdened by obsolete equipment and costs.[140] It was an opportunity for US officials as well, eager to discard surplus material after the war.[141] In that spirit, in the summer of 1867, Tokugawa agents purchased *Stonewall* for $400,000 and arranged for George Brown, a USN officer, to sail it to Japan.[142] The CSN had contracted the vessel in an

attempt to use technological novelty to compensate for its numerical inferiority. That logic appealed to the Japanese as well, and for similar structural reasons. US reports were incredulous that a weapon built "to destroy the American Navy" was now in the hands of "our Celestial friends."[143] In addition to conflating China with Japan, such coverage demonstrated a lack of imagination given the number of ex-Union and Confederate warships already in the Pacific. Indeed, Japanese interest in *Stonewall* seemed entirely reasonable to at least one other Pacific navy. US sailors nursing *Stonewall* around Cape Horn reported that Chilean authorities in Valparaiso (already coveting Peru's ironclads) "would like to have purchased the vessel, and would have given for her twice what she cost."[144]

After a mammoth transpacific crossing, *Stonewall* reached Japan in April 1868, only to again enter a state of legal limbo on account of an ongoing civil war.[145] Defeated in the Meiji Restoration (or more rightly Revolution), the residual forces of the Tokugawa Shogunate (*Stonewall*'s titular owners) retreated to the northern island of Hokkaido. There, in January 1869, Admiral Enomoto Takeaki established the Republic of Ezo as, the commander of the US Asiatic Squadron noted, "an asylum for those who had forfeited their heads in the rebellion."[146] Arriving in the main island of Honshu, it was not immediately clear to Brown whether this rump government to the north or the Meiji had a rightful claim to ex-Confederate vessel. Most of the Shogunal Navy followed Enomoto north, increasing Meiji officials' desperation to acquire ironclad warships capable of overcoming their adversary's numerical superiority at sea.[147] Unluckily for this new regime in Tokyo, the US Minister in Japan Robert Van Valkenburgh cited US neutrality (and was perhaps concerned about "the Japanese in their present irritable frame of mind against foreigners") and refused to surrender *Stonewall* to the Meiji government while it was still at war with the Shogunate.[148] The same problems that had so frustrated Confederate rebels in Liverpool had come to Tokyo.

The *Stonewall* was thus left ownerless and manned by a caretaker US crew in Yokohama Bay.[149] A then very junior Alfred Thayer Mahan (no less) complained about diverting crew members to the ex-CSN vessel, "fearing that it would interfere with my exercising."[150] The comparably decrepit state of the US forces in the western Pacific deepened his aggravation. While USN engineers and firemen kept *Stonewall* in working order, the wooden ships of the US Asiatic Squadron rotted away. William Cushing, the USN hero behind a successful torpedo attack in the Civil War, worried that USS *Maumee* "might soon be too rotten to sell."[151] Mahan faced similar problems onboard USS *Aroostook*, a gunboat condemned and auctioned off in July 1869.[152]

The mutually dissatisfying situation was resolved in March 1869, when an ephemeral peace broke out between the Meiji and Tokugawa forces. With a tentative truce in hand, US authorities released *Stonewall* to the Imperial government, where it was renamed *Kōtetsu* ("ironclad"); the first of its kind in the Japanese Navy. Foreign observers were skeptical about its capabilities, noting that it was "manned and officered by Japanese exclusively."[153] One *New York Herald* correspondent assessed that "the Japs have got a sort of wild elephant in the shape of the *Stonewall*" – powerful, but unlikely to be managed toward productive ends.[154]

Contrary to such racist expectations, the Meiji government would soon put the *Kōtetsu* to decisive use in its campaign to retake Hokkaido. As intended, when engaged with enemy forces, the *Kōtetsu* proved impervious to shot and "more than a match for a score" of Enomoto's wooden ships.[155] A raid by Shogunate forces to capture the ironclad by boarding party ended in fiasco.[156] After Meiji victory at the Battle of Miyako Bay (1869), the Shogunate's surviving ships took refuge beneath the city fort.[157] As the commander of the US Asiatic Squadron, Rear Admiral (RADM) Stephen Rowan, reported, "having lost his navy and had his fort knocked down by the fire of the *Stonewall*, [Enomoto] surrendered to save useless loss of life."[158] In 1865, the *Dallas Herald* had dreamed of *Stonewall* shelling New York and Boston with "impunity."[159] It was at once incredible and yet wholly consistent with the moment that in 1869 the Meiji's newly made navy would reap the benefit of the CSN's optimism. Self-strengtheners in Peru and Chile had already led the way. *Stonewall* was built to win a war through technological novelty and – US commanders thought at least – so it had in Japan.

Like Peruvian victory at Callao in 1866, imperial success at Hokkaido demonstrated a shift in regional hierarchies. As power proliferated, perceptions changed. A generation before the Sino-Japanese War, Rowan predicted the rise of a new regional order, heralded by Meiji naval capabilities. He wrote: "Already have the Japanese outstripped the Chinese in progress towards Western Civilization … The naval ships are well armed … The coal mines are successfully worked and supply our squadron with coal."[160] By taking advantage of a variant of the CSN self-strengthening strategy to leapfrog stages of naval development, Japan began to take shape as an industrial newly made navy in its own right.[161] Just as Tucker brought Foxhall Parker's texts to the Pacific slope, by 1870, less than a year after Meiji officials assumed control of *Stonewall*, *Squadron Tactics under Steam* went into print in Japan.[162] *Kōtetsu*, which in 1874 the *North China Herald* continued to assess as "the most formidable vessel of the Japanese navy," played a critical role in that process.[163] As late as 1897, US industrialists would still claim *Stonewall*

(most often using its original Civil War-era name) as the "foundation of the Japanese Navy."[164] Thinking more symbolically in 1907, A. T. Mahan argued that what forty years later he *still* called *Stonewall* was "the beginning of [Japan's] armored navy," earning the ship "a place in history."[165] Retrospectives aside, though, the more immediate consequence of Japanese naval ascendancy would be to goad the Qing Empire into naval reforms which mirrored the CSN technical-strategic template or were themselves based on CSN innovations.

2.7 The Japanese Invasion of Taiwan (1874) and the Confederate Influence on the Qing

Qing interest in industrial maritime defense antedated the US Civil War by many years, at least to the threat of European gunboats in the Opium War.[166] Various schools of thought contended, proposing self-strengthening as the means by which to make a "prosperous and strong" (富强) country – watchwords of "the Chinese Dream" still in use today.[167] Naval power, or at least a meaningful coastal defense, was a key component of that vision. During the First Opium War, Lin Zexu (林则徐), the Qing commissioner in Guangdong, advocated for a coastal defense navy capable of resisting British steamships after his appeals to morality and an incipient international law fell on indifferent ears (officials in Valparaiso c. 1866 would have done well to study his example).[168] Beginning in the 1860s, Li Hongzhang – soon to become China's most significant reformer – agreed, proposing a network of fortifications in concert with shallow-draft coastal defense ships and torpedoes.[169] Others, such as Wei Yuan, were more ambitious, arguing for the expansion of Chinese maritime and industrial power as a means to "control the barbarians" at sea.[170] Toward that end, following the Taiping Civil War (1850–1864) and the Second Opium War (1856–1860), military officials such as Zuo Zongtang (左宗棠) founded a series of naval arsenals and academies launching the Qing "Self-Strengthening" movement in earnest.[171] Looking out into the Pacific, the Qing's officials had another "navy to construct" and ambitions to do so with the benefit of new technologies.

Halting progress in China took on a new urgency in 1874, after Japanese forces invaded the Ryukyus and Taiwan, shocking the consciousness of the Qing.[172] Launched ostensibly in retaliation for the murder of shipwrecked sailors, the Japanese invasion of Taiwan precipitated a military and political crisis in China unlike that caused by earlier (and more famous) incursions from the sea.[173] In 1867, for example, US sailors and marines from the Asiatic Squadron landed in Taiwan, investigating the murder of the crew of the US ship *Rover*. Once ashore,

the US force was harried by indigenous Taiwanese who, the officer commanding noted, "displayed a strategy and courage equal to North American Indians."[174] Taking fire and subject to heat exhaustion, the Americans withdrew, citing "the inutility of such an expedition against a savage enemy in a wild country."[175] From a US perspective, the 1867 action warranted prominent inclusion and appendices in the Secretary of the Navy's Annual Report, alongside coverage in leading journals and newspapers. But in China, Qing officialdom mostly shrugged off the US landings as just another among many such insults. This apathetic reaction stands in sharp contrast to Qing debates prompted by the Japanese 1874 expedition. European and US gunboats were one matter, but an attack by the Japanese "dwarfs" [倭奴] on Chinese territory signaled something else about the broader hierarchy of power in East Asia.[176] A livid Li Hongzhang wrote that if Taiwan had been properly fortified, "the Japanese would not have dared to have come." Looking forward, he asked: "Can the acquisition of defensive equipment be delayed for even one day!?"[177] Competing with the Europeans could wait, but the exigencies of competition with Japan demanded an immediate response.

Li's frustration spoke to a disorienting asymmetry of power vis-à-vis Japan which would have been familiar to men such as Dahlgren and others who confronted newly made navies in South America. How could it be that little Japan – beset by reactionary rebellions until 1877 – had forms of naval power that the vast Qing Empire did not? As Li Hennian (李鶴年) – an official sent to review defenses on Taiwan – noted laconically, Japan had ironclad warships "and we have none."[178] Despite the expansion of naval arsenals in the late 1860s, officials at the Zongli Yamen – the body responsible for foreign affairs – agreed that Chinese forces were unable to defend Taiwan because as of 1874 they still lacked armored warships.[179] Put another way, even with its head start, China was a "navy to construct" facing an (albeit recently) constructed Japanese newly made navy. In a fitting coincidence of global proportions, the *Kōtetsu* (ex-CSS *Stonewall*) was among the Japanese assets dedicated to the Taiwan Expedition.[180]

As it had for Peru and Chile, vulnerability to foreign ironclad warships encouraged Qing interest in the CSN's campaign of naval resistance. Chinese knowledge of the Confederate torpedo service dated at least to 1868, when the Qing delegate traveling with the Burlingame Mission to the United States, Zhi Gang noted how Confederate coastal artillery had been unable to impede the movement of ironclad warships during the US Civil War. An effective defense, he recorded, was achieved "only through the concealed emplacement of torpedoes."[181]

Still more significant was the 1874 publication of the Chinese-language version of the Prussian engineer Viktor von Scheliha's (希理哈) text *A Treatise on Coast Defense* (防海新论) – coincident with the Japanese Expedition to Taiwan.[182] Though often described as a "Prussian" manual, Scheliha's analysis derived its authority from his personal experience in the US Civil War.[183] Scheliha served with the Confederacy, helping to construct maritime defenses at Mobile, AL (the very torpedoes David Farragut supposedly damned).[184] In the process, he became one of the world's leading advocates for torpedo defenses against numerically or technically superior forces. Li Hongzhang read the Chinese version of *Coast Defense* in 1874, no doubt sympathizing with the experience of another industrially weak military striving for defensive power against steamships.[185] Thus mediated by Scheliha, the CSN technology strategy found a Chinese audience in high places. That same year, front-page articles in the vernacular Qing newspaper *Shenbao* began attributing a host of naval inventions to the US Civil War, including the ironclad warship and the torpedo-mine.[186] Both would be central to Qing self-strengthening in the next decades.

Scheliha's chief tactical insight (as interpreted by Qing reformers) was that fortifications alone were no defense against ironclad warships. After the fiascos at the Dagu Forts (1860) and Taiwan (1874), that conclusion made good sense. In 1874, Li Zongxi (李宗羲) argued that during the US Civil War, "[a]lthough [the Confederacy] had extremely good fortifications … they could only destroy one or two enemy ships, and could not prevent the easy comings and goings of the [Union] fleet. This is clear proof that cannons alone are insufficient to be too deeply relied upon."[187] Li Hongzhang agreed, writing, "when *Coast Defense* discusses the era of the US Civil War … although the forts were hardened and equipped with numerous guns, they still offered no means of resisting the great enemy."[188] Citing Scheliha, he contended that without asymmetric defenses located at key strategic points enemy ironclads would always get through coastal batteries. The solution, Li Hongzhang argued (reflecting Zhi Gan's observations in 1868), was to supplement port defenses with torpedo-mines and ironclad ships.[189] On the ground in Taiwan, Li Henian recommended that "in terms of weapons for the defense of Taiwan's ports, nothing is as good as the torpedo-mine."[190]

Of course, in 1874 such plans were mostly aspirational. They certainly came too late to be of use against the Japanese expedition. In November, Meiji forces withdrew from Taiwan having extracted minor concessions and an indemnity. Japan would later annex the Ryukyus (1879) en route to its emergence as a regional rival to the Sinocentric order in the western Pacific.[191] For Li Hongzhang and others, the crisis

began a lifelong fascination with Japan as a "hypothetical enemy" and the torpedo as a means of resistance.[192] The race was on, and technologies and knowledge from the US Civil War were relevant from start to finish. Three years after he read Scheliha, another Civil War (and Callao) veteran, John Lay, arrived in Tianjin with a proposal to sell Li Lay torpedoes.[193] He was the first of many. Naval technologies, developed through transwar connections from Mobile to Callao to Tianjin, took root in the Qing Empire.

2.8 Civil War Afterlives in the Pacific

After 1865, naval technology and expertise flowed out of the North Atlantic in response to demand from the not-so-Pacific World. Confederate defeat and USN demobilization created a surplus of *materiel* and expertise. Both were in hot demand in the Pacific by various navies to construct, providing opportunities for CSN veterans, shipyards, and even a generation of USN officers caught in a period of demobilization. Ex-US and CSN ships were foundational to the industrialization of the Peruvian and Japanese navies in the 1860s. CSN and Union personnel sold advice about engineering, strategy, and tactics in Callao, Valparaiso, and beyond. Still more enduring, doctrinal texts developed during the Civil War, such as *Coast Defense* and *Squadron Tactics Under Steam*, shaped thinking about modern naval war across the region. While nationally bound histories of the USN portray the decade after Appomattox as a "naval slumber," a transwar perspective reveals that the afterlife of the Confederacy in the Pacific's newly made navies was, in many respects, more interesting than the Civil War itself.[194]

This same proliferation of technology and expertise made for a set of developments that are at odds with most depictions of power and its distribution in the industrial era. This chapter has attempted to texture the long-standing (if deterministic) conventional wisdom by recovering the transwar history of the Civil War in the Pacific. At Charleston, the CSN leveraged paradigmatic departures in naval technology – the ironclad, torpedo, and submersible warship – to resist the asymmetries of US industrial power. When exported to the Pacific, ex-CSN expertise and *materiel* provided Peru with the means to compete against Spanish gunboats at Callao. Tellingly, the CSN commander at Charleston Harbor, John Tucker, *and* his Union antagonist, John A. Dahlgren, were physically present at both Charleston and Callao. The inversion of traditional assumptions about power was all the more glaring as Tucker and his South American colleagues planned a transoceanic assault on the Spanish Empire in 1866. Across the Pacific, in Japan,

the ex-CSS *Stonewall* became a key tool of national consolidation and a symbol of Japanese power (1868–1869). For Qing reformers confronting that power in Taiwan (1874), the Confederate experience offered – quite literally – a manual for naval resistance.

The conclusion of the US Civil War had unpredictable effects on Pacific newly made navies, but in general it accelerated investments and experiments in modern military technology and force structure. US demobilization created surpluses of expertise and weapons that then catalyzed naval development – the building of newly made navies – in Peru, Chile, Japan, and China. As Chapters 3 and 4 argue, demobilization also made the USN so weak that this same military activity could (and soon did) weigh disproportionately on the minds of US navalists. As the USN retrogressed in the late 1860s to its prewar missions in defense of commerce and expatriates, its ability to protect national "prestige" began to atrophy.[195] John Dahlgren's 1866–1867 complaints about the relative superiority of Tucker and his Peruvian ironclads are a fine example; Alfred Thayer Mahan gazing out on ex-*Stonewall* in Japan another. At least they were not alone in the coming years, being joined by dozens of US officials who were surprised, insulted, and eventually inspired by the power of Pacific states and the relative deterioration of the USN after the Civil War.[196] More proximately, in the 1870s Japanese and Peruvian military progress sparked intra-regional naval races and conflicts as officials and Chile and China did what their counterparts in the United States would not for at least a decade: catch up by building newly made navies of their own.