

# Sea Power and the War of the Pacific

By ROBERT E. DILLON\*

**I**N 1897, Chile declared war against Peru and Bolivia. The War of the Pacific was to continue for almost five years. It was a conflict waged with intense determination, destructiveness and cruelty. Harsh peace terms, imposed by the victor, left a legacy of bitterness that lingers to this day. The United States intervened to the extent of mediation. However, as a consequence of inept diplomacy and the failure to settle on a policy, the North Americans appeared ridiculous to Latin America.<sup>1</sup>

At the time of the war, there was widespread interest in the role of sea power. From a geographical view, the war stipulated command of the sea for either offensive or defensive operations.<sup>2</sup> Inherent to the question of sea power was the evolution of the iron-clad warship, still, in its infancy. This war was to provide naval experts with an ideal setting to test their theories.<sup>3</sup>

The act that precipitated the clash was a violation, by Bolivia, of a treaty between that nation and Chile. However, the roots of the war were older, more complex and require some explanation. Several factors contributed to a situation that deteriorated into war. Vague boundaries, enormous mineral wealth and the aggressiveness of the Chileans must be carefully considered.<sup>4</sup>

The boundaries of the disputed region, that is the desert provinces of Atacama and Tarapacá, had never been clearly defined or accepted as final. In 1842, Chile claimed sovereignty as far north as 23° south latitude. Bolivia, on the other hand, had outposts located throughout the region that was claimed and they protested.<sup>5</sup> Boundary arguments almost led to war, but the appearance of the Spanish fleet off the Pacific coast united Chile, Peru and Bolivia against the common enemy.<sup>6</sup> A treaty was signed, in 1866, establishing the boundary between Chile and Bolivia as 24°, and each nation was to share equally in the revenues earned from mineral exports from 25° to 23°. This treaty proved to be impractical and was a source of friction. One solution to the problem, proposed by Chile, was that in return for Atacama and part of Tarapacá, Chilean military forces would assist Bolivia in taking Arica away from Peru

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as its natural outlet to the Pacific. Bolivia declined the "generous" offer.<sup>8</sup> Finally a new treaty was negotiated in 1874, that kept the same boundary but restricted the division of revenue to the zone between 24° and 23°. In addition, Bolivia agreed not to increase duties on exports of Chilean commercial concerns, in this zone, for twenty-five years.<sup>9</sup>

The Franco-Prussian War focused attention on the necessity of nitrates for the manufacture of munitions.<sup>10</sup> The Atacama and Tarapacá deserts were literally covered with this mineral. Also, great deposits of guano were found along the coast.<sup>11</sup> As though this was not wealth enough, the fabulous region contained rich lodes of silver and copper. From the beginning, Chile backed by foreign investors, predominated in exploiting this bonanza. By 1873, over seventy percent of Chile's national capital was invested in the desert area.<sup>12</sup> Few Bolivians or Peruvians dwelled in the region, much less developed the resources.<sup>13</sup>

During the decade of the seventies, Peru was in financial distress and urgently needed additional funds.<sup>14</sup> Peru passed three laws, between 1873 and 1875, converting the nitrate industry into a state monopoly as a means to increase its income.<sup>15</sup> Thus Peru created a hostile faction, that of dissatisfied bondholders who tended to favor Chilean control over the nitrate fields.<sup>16</sup>

The character of the typical Chilean differs from that of the Peruvian or Bolivian. The Chilean, ambitious and hard working, was more nationalistic. His attitude toward his neighbors to the north, whom he considered lazy and indolent, was contemptuous. Contrary to his neighbors, the Chilean was proud of his Araucanian Indian ancestors.<sup>17</sup> This spirit engendered the term "Yankees of South America" in reference to Chile. Their aggressive drive found an outlet in the northern desert. So much of Chile's capital and people poured into this land that annexationist societies called "carbineros" were founded.<sup>18</sup>

The Chilean historian, Vicuña Mackenna, wrote that "war with Peru and Bolivia was just a question of time after silver and nitrates were found. . . ."<sup>19</sup> Bolivia, already suspicious of Chilean intentions, signed a secret treaty of mutual security with Peru. Although the treaty was patently non-aggressive and not too secret, its existence was later cited by Chile to justify its conduct.<sup>20</sup> Commercial interests also played a leading role. Subsequent Chilean action had approval of the disgruntled nitrate bondholders. It has been alleged that individuals important and influential in the Chilean government were large shareholders in the nitrate concerns located in the disputed area.<sup>21</sup>

The final incident disclosed a further possibility of collusion between the nitrate industry and Chile. In February of 1878, the Municipal Council of Antofagasta requested that a tax be levied on the exports of the Antofagasta Nitrate and Railroad Company, a Chilean corporation. The purpose of the tax was to provide funds for municipal public works. The Council was aware, as well as the Bolivian government, that such a tax violated the treaty of 1874. What is of interest is that not a single member of the Council was a Bolivian. All members were either Chilean or others connected with the nitrate industry.<sup>22</sup> Bolivia's president, Hilarión Daza, perhaps too cocksure because of the secret treaty with Peru, approved the tax request. However, the nitrate company refused to pay, and Chile cautioned Bolivia that this was a violation of the treaty. Nevertheless, on the first of February, 1879, President Daza advised the Antofagasta Company that their property would be sold, on the fifteenth of the month, to satisfy the tax lien. The sale never took place; on the fourteenth, Chilean military forces occupied Antofagasta and the Bolivian authorities fled. On February 27, 1879, Bolivia declared war and requested Peru to honor its treaty obligations.<sup>23</sup>

Peru, recovering from a recent civil war, was neither a united nation nor prepared for war.<sup>24</sup> Peru made an eleventh hour effort to restore relations between Chile and Bolivia or at least gain time for its own military preparations. Antonio Lavalle, a top diplomat, was sent to Santiago to negotiate. His mission was hopeless. Chile was determined to go to war. Lavalle was presented with an ultimatum that required Peru to abrogate the secret treaty, to cease all war preparations and to remain neutral in any conflict between Chile and Bolivia. The terms were unacceptable, and Lavalle was handed his passport.<sup>25</sup> On April 5, 1879, Chile declared war against Peru and Bolivia.

Few wars in history have ever been waged with such one-sided results. Chile, always on the offensive, never suffered a serious reverse. The allies fought a defensive war and at best managed to delay the Chilean schedule. Even their victories were Pyrrhic in nature. Yet, at the outbreak of hostilities, world opinion favored the forces of Bolivia and Peru. After all, they had a navy with four ironclads to Chile's two, and their combined armies were triple those of Chile.<sup>26</sup>

Both sides were equal in the total number of warships. But there was a significant difference in the quality of the ships and in the caliber of personnel who manned them. Chilean naval officers had been sent abroad to study and serve in European navies. Chile's

merchant marine provided experienced officers to augment the naval officer corps. The other ranks were filled with trained sailors.<sup>27</sup> Most important, Chile had purchased two English built ironclads of the newest seagoing type. These sister ships, the *Almirante Cochrane* and the *Blanco Encalada*, were equal to or superior to any warship afloat. Their main battery was six 9-inch guns. Each ship displaced 3,500 tons and was protected by armor plate nine inches thick. When in proper condition, their maximum speed was 12 knots.<sup>28</sup> The fleet also included several lesser warships; these were wooden hulled, lightly armed and of little value except for blockade duty. Some of these older ships played an important role in the war, particularly the *Esmeralda* and the *Covadonga*.

The Chilean army was compact, well organized and thoroughly professional. Its peacetime strength was approximately 4,000. At the outbreak of the war the National Guard was integrated into the army, and the total force expanded to 55,000 men. The army was equipped with first class material and was highly trained by the time they saw action. It was an army complete with all components, to include ambulance, supply and commissary trains. Its artillery featured the latest Krupp cannons, and German officers were employed to direct the artillery.<sup>29</sup>

Popular opinion favoring Peru as the stronger power was based on Peru's possession of four ironclads. However, an examination of their construction and capabilities discloses that Peru's fleet had little chance of success. Two vessels really comprised the fleet. One, the *Huascar*, a turret ship built in 1865, displaced 1,100 tons. Her armor was just over five inches thick and was backed by ten inches of teakwood. The *Huascar's* principal armament was two 9-inch Armstrong muzzle-loading rifles, mounted parallel in the turret.<sup>30</sup> The other ship, the *Independencia*, like the *Huascar*, was built in England in 1864. While larger, the armor was as weak and her armament was lighter than the *Huascar's*.<sup>31</sup> The other two ironclads were ex-Confederate warships that had been purchased in the United States. Neither ship was seaworthy; the trip to Peru had taken fourteen months. Peru's fleet also contained several older ships.

Serious faults were to be found in the naval personnel. The Peruvians were not a seagoing people; most shipping was carried in foreign bottoms. It was necessary to augment the officer corps with foreigners. Crews were assembled by accepting cast off merchant seamen and by converting soldiers into sailors. Discipline was lax and crews were lacking in gun drill and other naval skills. While

a naval school had been organized, practical exercises were omitted from the course.<sup>33</sup>

The army was much larger than Chile's, but it was an army that had been recruited by force.<sup>34</sup> Its ranks were filled with Indians, Negroes and mestizos. Not until Lima was threatened were white Peruvians to enter the ranks in large numbers. The army was expanded from 9,000 to 40,000 men, but units were not formed above regimental level.<sup>35</sup> No provisions were made for the usual supporting elements. Peruvian equipment was inferior, non-standard and poorly maintained. Their artillery was cast in Lima and was not comparable to the Chilean artillery.<sup>36</sup>

This unruly nation, willing to provoke Chile, did not have a single ship to guard its coastline.<sup>37</sup> Two separate groups comprised the military establishment; the presidential bodyguard, 1,500 strong, armed with modern repeating rifles, and the rest of the army, about 2,500 men carrying flintlock muskets.<sup>38</sup> The common soldier of Bolivia was brave, persevering and able to endure great hardship, but lack of competent leadership and obsolete equipment reduced his potential contribution.<sup>39</sup> The records are vague as to the exact size of the army, but it probably never exceeded 9,000 men at any time during the war.

Coinciding with the declaration of war, the Chilean fleet had been ordered to Callao, Lima's seaport, where the *Huascar* was known to be in dry-dock, and the *Independencia* was immobilized with her engines removed.<sup>40</sup> Admiral Williams Rebolledo, the Chilean naval leader, changed the plan at the last minute, and blockaded the port of Iquique instead. Admiral Williams never offered an explanation of why he changed the plan, but an obvious opportunity was lost in not proceeding with the original plan.<sup>41</sup> Peru's ironclads were to be ready for sea, in a few weeks, with speed superior to any Chilean warship. The hulls of the Chilean warships were foul with marine growth, and, as a result, their top speed was not more than 7 knots.<sup>42</sup> The naval yards in Chile were not large enough to handle these ships, and it was necessary to send them to England to be dry-docked and cleaned. One ship, the *Cochrane*, had been cleaned the year before, while the other had never made the trip.<sup>43</sup>

Besides the blockade of Iquique, Chile commenced a long-range program that was to affect the Peruvian economy. Part of the fleet began a systematic destruction of nitrate processing facilities along the coast of Peru. It caused a vigorous protest by neutrals with interests in the area, but Chile was able to placate them while cutting Peruvian exports down.<sup>44</sup> To the south, off Cape Horn, an efficient

sea patrol was organized that blocked the main sea approach to Peru. Now, war supplies bound for Peru were required to be transshipped across the Isthmus of Panama.<sup>45</sup>

In May 1879, the *Huascar* and the *Independencia* went to sea, convoying troops and supplies to the Army of the South that was forming at Arica. Captain Miguel Grau, commander of the *Huascar*, was informed at Arica that Iquique was blockaded by only the *Esmeralda* and the *Covadonga*. Grau set sail at once for Iquique in company with the *Independencia*. The small Chilean warships were completely surprised and cut off from open water. On shore, Peruvian artillery was brought up and began to fire at the enemy. With everything in their favor, the Peruvians should have secured an easy victory. The *Huascar* singled out the *Esmeralda* while the *Independencia* chased the *Covadonga*. The absence of trained gun crews, on the *Huascar*, was soon apparent. For four hours, at close range, the *Huascar* did not hit the *Esmeralda*. In desperation, the *Huascar* tried to ram and after three attempts, succeeded in sinking her foe.

Meanwhile, the *Independencia*, following the *Covadonga*, moved out of sight behind a point of land. Here, the action was similar to the other fight; the *Independencia* could not score a hit with her guns. Like the *Huascar*, the ship tried to ram, but while engaging in this manoeuvre, the ironclad ran aground. The Chilean warship took advantage of the new situation and moving astern of the hapless ironclad, commenced to fire at point-blank range.<sup>46</sup> Some sources claim the Peruvian ship had just surrendered when the *Huascar* appeared on the scene and forced the *Covadonga* to flee.<sup>47</sup> The *Independencia* was so severely damaged that she was abandoned. Ironically, all Peru hailed the battle as a victory, and in appreciation, Grau was promoted to admiral.

From June until October of 1879, the *Huascar* terrorized Chile. Admiral Grau made successful forays against Chilean shipping. Coastal raids destroyed and captured valuable property. More important, the Chilean army was not able to move until the *Huascar* was brought to bay.<sup>48</sup> The failure of the Chilean navy to stop the *Huascar* resulted in replacing Admiral Williams with a new naval chief. One of his first acts was to call in the Chilean ironclads for an overhaul in order to improve their speed.<sup>49</sup>

Peru, at last realizing the importance of sea communications, instructed Grau not to risk the *Huascar* and to avoid a fight unless the odds were in his favor. Endeavoring to compensate for the loss of the other ironclad, Grau experimented with new weapons. He is credited with launching the first self-propelled torpedo at a warship

in combat. Again, luck was against the Peruvians. Midway to its target the torpedo turned about and came back toward the *Huascar*. A near catastrophe was averted by an officer who jumped into the water and deflected the torpedo.<sup>50</sup>

Chile sent her fleet to sea again with a new plan. Dividing into two groups, the fleet began a sweep of the coast. Their plan worked, and on the eighth of October, below Point Angamos, the *Blanco* flushed the *Huascar* and forced her into the path of the *Cochrane*. Escape was impossible and Grau prepared his ship for action. In an hour and a half it was all over; the *Cochrane* had proven superior to the *Huascar*. One third of the Peruvian ironclad's crew were killed or wounded.<sup>51</sup> The *Cochrane* had been hit twice with little damage while the *Huascar* disclosed flaws that were fatal in a fighting ship. Her armor, backed by timbers, was easily penetrated, and the flying splinters added to the effect of the bursting shells. The rudder controls were unprotected, and on three occasions they were shot away, and the ship went out of control. The Chilean warships with twin screws had no problem avoiding the *Huascar's* attempts to ram. Often, during the fight, the single turret with its restricted field of fire was out of action.<sup>52</sup> Not only Grau, but three successive commanders were killed in the partially exposed conning post. Theodore Roosevelt, then Assistant Secretary of the Navy, gave credit, for the victory, to "the *Cochrane's* well-trained crew serving fast firing guns."<sup>53</sup>

When news of the disaster reached Lima, a fund was raised to purchase a new ironclad.<sup>54</sup> By this date Peru should have perceived that a warship was not to be purchased anywhere at any price. This closed market was the work of bondholders applying pressure throughout the business world.<sup>55</sup> Credit must also be granted to the efficiency of the Chilean diplomats who insured that neutrality laws were honored.<sup>56</sup> Chile was always cognizant of the bondholders, and they developed a method for keeping them content. As soon as it was able, Chile began to pay dividends to the bondholders from the proceeds of captured nitrate mines.<sup>57</sup>

Chile, free to move by sea, commenced the land stage of the war. Three distinct campaigns took place along the coast of Peru and Bolivia.<sup>58</sup> Except for the sea there was no means of transportation north to south. Not knowing where Chile was to strike and not being able to move a force to meet an attack, the allies were required to scatter their forces in defensive positions. The Chilean blockade was effective, and resupply was difficult, depending on blockade runners.<sup>59</sup> On both sides, casualties were high, attesting to the ferocity of the conflict. Chile was infamous for its treatment

of enemy wounded; not infrequently they sanctioned a bloodbath after an action. Allied casualties reached the abnormal ratio of seven killed for each soldier wounded.<sup>60</sup> On land, as on the sea, fate was unkind to Peru. Toward the close of the Tarapacá campaign, the allies executed a brilliant attack and routed the Chileans. But because their ammunition was nearly exhausted, the only alternative was to retreat.

Repeated reverses led President Prado, of Peru, to resign his post and leave the country in December, 1879. President Daza, the Bolivian leader, was overthrown a few weeks later. The allies were further weakened, by the resulting confusion, and mutinies broke out. Order was reinstated only through the use of force.<sup>61</sup> After the second campaign, with its armies scattered and internal problems, Bolivia's war contribution became negligible.

The capture of the *Huascar* allowed Chile to ravage the coastal area of Peru. Naval expeditions destroyed or ransomed much of Peru's revenue-producing agencies located on the coast.<sup>62</sup> Peru did what was possible to defend itself with the means at hand. Torpedoes and mines were employed in harbors but without success. However, their use enraged the Chileans, who considered these devices a violation of the rules of war, and cities and towns were shelled in retaliation.<sup>63</sup> Noting the Chilean affection for looting, small boats, carrying attractive cargoes, were cast adrift in the vicinity of Chilean warships. The cargo was booby trapped and designed to explode when it was unloaded. Before Chile was able to alert the fleet, the famed *Covadonga* and another warship were sunk by this method.<sup>64</sup>

In 1881, the final land campaign of the war was launched against Lima. Chile, moving by sea, successfully landed an army of 25,000 men near Lima.<sup>65</sup> The Peruvian army was, by now, an army in name only. A motley force of volunteers was raised, untrained and without proper equipment, to oppose the Chilean veterans.<sup>66</sup> In two successive battles the Peruvians were completely beaten and effective resistance ceased. During the confusion, deserters and city gangs rioted and pillaged Lima. An international force of neutrals attempted to restore order in the city. Failing to achieve this, they requested and received help from the Chilean commander. Evidence does not substantiate the charge that Chilean troops raped the city.<sup>67</sup> However, Chile did a thorough job of looting the city during its occupation. Works of art, furniture and even the animals from the zoo found their way to Chile.<sup>68</sup>

With the fall of Lima only the interior of Peru remained free of Chilean control. Guerilla-type action lingered on until



1884, but Peru was beaten and knew it. The nation desired peace but not at the price Chile demanded. The terms included all of Tarapacá, the Tacna-Arica territory and a monetary indemnity.<sup>69</sup> Intervention by the United States was Peru's sole hope for a reasonable settlement. The diplomacy of the United States seemed vacillating and contradictory and has been held to be partially responsible for Peru's reluctance to accept terms.<sup>70</sup>

Chile, not in any hurry to negotiate, prolonged the occupation by preventing the formation of a stable government.<sup>71</sup> The delay can be explained financially. Mineral exports, the monthly indemnity in support of Chilean occupation forces, and plunder enabled Chile to recover from near bankruptcy and to develop into a state of economic abundance. Figures from the Chilean budget reveal that during the latter stage of the war, receipts from the exporting of Peruvian minerals were almost double the value of other sources of income.<sup>72</sup> Chile did not make a serious effort to end the war until the latter part of 1883. This step was taken because of the Chilean fear of possible foreign intervention.<sup>73</sup>

The War of the Pacific enabled Chile to enlarge its land by one third. Bolivia was deprived of its outlet to the Pacific, and Peru lost its richest province. The final settlement of the Tacna-Arica dispute, a legacy of the war, was to plague inter-American relations into the twentieth century.<sup>74</sup>

From a naval viewpoint the war might seem of little interest because of the small forces involved, but it must be remembered that the ironclads of Chile and Peru were equal to the best of that day. These two navies exhibited professional skill and determination that won admiration and world-wide notice.<sup>75</sup> The naval operations were notable because various theories of warship construction, and naval innovations were tested and proven in combat. In a material and tactical sense the deficiencies were readily identifiable. The ability and bravery of Admiral Grau was not a substitute for ill-trained naval personnel. Professional journals recognized structural defects that had been exposed. Lessons taught by the *Huascar-Cochrane* battle were incorporated into the construction of American warships that were later used in the Spanish-American War.<sup>76</sup>

Admiral Alfred T. Mahan, naval historian and strategist, has written that, "battles are only as famous as they are made so by historians."<sup>77</sup> If this be the criteria, the War of the Pacific attracted historians and strategists alike to examine the role of sea power. Naval advocates viewed this war as a positive confirmation that sea power was essential to nations whose borders were exposed to the sea.

It was the strategic employment of the naval force that was more questionable. Lieutenant T. B. M. Mason, United States Navy, in a report to Congress, questioned the *Huascar's* orders to avoid a fight with the Chilean ironclads. Mason thought that the *Huascar* should have sought battle before the enemy ironclads joined forces as part of the new Chilean naval strategy.<sup>78</sup> Fred T. Jane, a noted naval authority, wrote that, "the conduct of the *Huascar* in avoiding battle and harrying the Chilean coast was the only possibility that offered promise to Peru." Jane also inferred that the *Huascar* challenged Mahan's theory of the "Grand Battle."\* The same author commented that Chile's reply to the problem posed by the *Huascar* was correct and that Chile could not afford to allow the enemy ship to roam free.<sup>79</sup>

There can be little doubt that sea power was the key to victory in the War of the Pacific. It is interesting to contemplate what might have been, had the *Independencia* not been forced aground or if the Peruvian sailors had been more accurate with their guns. Probably the outcome of the war would have remained the same, when the other shortcomings of the Peruvians are taken into account.

Beyond question, the saga of the *Huascar* and her gallant commander, Miguel Grau, was an appealing story. The following lines are most appropriate: "Even in defeat the *Huascar* made a name for herself not only for what she did, but for what she attempted to do and what her enemies feared she might do."<sup>80</sup>

\* Mahan believed the purpose of a warship or a fleet was to seek out the enemy naval force and destroy it. Jane infers that Mahan ignored the success of the Confederate raiders whose operations were based on avoiding battle with warships if possible.

1. Herbert Millington, *American Diplomacy and the War of the Pacific* (New York, 1948), 79.
2. T. B. M. Mason, *The War on the Pacific Coast* (Washington, 1883), 8.
3. "End of the Peruvian War", *Saturday Review of Politics, Literature, Science, and Art*, LVI (1883), 526-527.
4. Mason, *op. cit.*, 6.
5. Graham H. Stuart, "The Tacna-Arica Dispute", *World Peace Foundation*, X, no. 1 (1927), 9.
6. *British and Foreign State Papers*, vol. 56, 717.
7. *Ibid.*, vol. 71, 897.
8. Arbitration between Peru and Chile, *Case of Peru*, vol. 1, (Washington, 1923), 31-32.
9. British, *op. cit.*, 897.
10. Millington, *op. cit.*, 21.
11. *Ibid.*, 12. Guano, the name given to the dung of sea gulls, is thirty-five times more efficient than barnyard manure.
12. J. Perkins Shanks, "The Chile-Peru Dispute," *The Forum*, vol. 69 (May, 1923), 1515.
13. A. V. Hancock, *A History of Chile* (Chicago, 1893), 272.
14. Luis Galdames, *A History of Chile* (Chapel Hill, 1941), 319.
15. Millington, *op. cit.*, 21.
16. *Ibid.*, 29.
17. *Ibid.*, 10-11.
18. *Senate Executive Documents*, 47 Cong., 1 sess., no. 79 (1882), 201.
19. Stuart, *op. cit.*, 16.
20. *Ibid.*, 14. The author cites Anselm B. Holley, *Conferencia Internacional* (Santiago, 1919), 14.
21. Shanks, *loc. cit.*, 1515. Presidents Pinto, Errazurriz and Santa Maria. Defense Minister Sotomeyer and Historian Mackenna.
22. *Ibid.*, 1516.
23. Millington, *op. cit.*, 24-25.

24. William J. Dennis, *Documentary History of the Tacna-Arica Dispute* (Iowa City, 1927), 69.
25. Stuart, *op. cit.*, 15-16.
26. Millington, *op. cit.*, 31.
27. Mason, *op. cit.*, 13, 24.
28. J. W. King, *Warships and Navies of the World* (Boston, 1881), 409-412.
29. Mason, *op. cit.*, 11-25.
30. King, *op. cit.*, 410-412.
31. Clements R. Markham, *The War between Peru and Chile* (London, 1882), 95.
32. Mason, *op. cit.*, 16.
33. *Ibid.*, 21.
34. Markham, *op. cit.*, 99.
35. Hancock, *op. cit.*, 276.
36. Mason, *op. cit.*, 26-27.
37. Hancock, *op. cit.*, 276.
38. *Ibid.*, 276.
39. Mason, *op. cit.*, 27.
40. Senate, *op. cit.*, 197.
41. Dennis, *op. cit.*, 77.
42. Lord Brassey, *The Navy Annual* (Portsmouth, 1886), 34.
43. Mason, *op. cit.*, 15-16.
44. Dennis, *op. cit.*, 27-28.
45. *Ibid.*, 79.
46. Markham, *op. cit.*, 108-114.
47. Galdames, *op. cit.*, 329.
48. Markham, *op. cit.*, 115-122.
49. Galdames, *op. cit.*, 329.
50. Markham, *op. cit.*, 119.
51. *Ibid.*, 124-132.
52. Brassey, *op. cit.*, 334.
53. Theodore Roosevelt, "Fight between Ironclads," *Century Magazine*, vol. LV (1898), 935.
54. Mason, *op. cit.*, 48.
55. Senate, *op. cit.*, 104.
56. Dennis, *op. cit.*, 126.
57. *House Reports*, 47 Cong., 1 sess., no. 1790 (1882), 210.
58. Markham, *op. cit.*, vii.
59. Mason, *op. cit.*, 29-30.
60. Senate, *op. cit.*, 369, 381.
61. *Foreign Relations of the United States* (1880), 819.
62. Markham, *op. cit.*, 214-217.
63. Foreign, *op. cit.*, 130.
64. Senate, *op. cit.*, 381, 458.
65. Hancock, *op. cit.*, 307.
66. Mason, *op. cit.*, 70-71.
67. Senate, *op. cit.*, 70-71.
68. Dennis, *op. cit.*, 430-470.
69. Millington, *op. cit.*, 123.
70. *Ibid.*, 142-143.
71. Dennis, *op. cit.*, 192.
72. *Statesman's Yearbook*, (New York, 1883), 523.
73. Dennis, *op. cit.*, 217.
74. *Ibid.*, 576.
75. Edward K. Rawson, *Twenty Famous Naval Battles* (New York, 1899), 576.
76. *Ibid.*, 576.
77. *Ibid.*, xix. Letter to author from Mahan.
78. Mason, *op. cit.*, 36-44.
79. Fred T. Jane, *Heresies of Sea Power* (London, 1906), 146-153.
80. Rawson, *op. cit.*, 569.