

**IS THE INTERNATIONAL BOUNDARY BETWEEN THE UNITED STATES AND MEXICO WRONGLY DEMARCATED? AN ACADEMIC INQUIRY INTO CERTAIN DIPLOMATIC, LEGAL, AND TECHNICAL CONSIDERATIONS REGARDING THE BOUNDARY IN THE SAN DIEGO-TIJUANA REGION**

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INTRODUCTION

International boundaries are among the most important questions—generally surrounded by sensitive diplomatic policies, emotional political issues and no less difficult technical considerations—in the bilateral relations between states. In the international legal arena, boundaries serve a fundamental purpose inherent to the very existence of the state: They clearly define the territory under the exclusive control and authority of the state.<sup>1</sup>

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1. See Myres S. McDougal & W.M. Reisman, *Claims Relating to Boundaries*, in *INTERNATIONAL LAW IN CONTEMPORARY PERSPECTIVE* 678 (1981); see also César Sepúlveda, *El Territorio y Anexiones*, in *DERECHO INTERNACIONAL* 175-78 (1991); César Sepúlveda *His-*

Few countries in the world are endowed with the richness and complexity that characterize international boundary relations as are those which exist today between the United States and Mexico. Without hyperbole, the limits between these two neighbors may be singled out as an example of their ability to tackle transboundary problems in harmonious manner, reaching solutions which are always based upon the sound principle of mutual agreement despite their contrasting differences. The U.S.-Mexico boundaries have been, and will continue to be, a source of incisive and fascinating questions. Some of these questions have been directed at the censurable origin of the very existence of these boundaries, imposed as a result of the tragic war of 1846-1848.<sup>2</sup> In recent years, however, authors have begun to examine a multitude of intriguing issues regarding the delimitation, the demarcation, and the administration of these boundaries from legal, economic, environmental, and other viewpoints.

The Treaty of Guadalupe Hidalgo<sup>3</sup>—whose sesquicentennial was quietly celebrated in both countries on February 2, 1998,<sup>4</sup>—put an end to the unjust war of 1846-48 between the United States and Mexico, as a result of which Mexico lost more than half of its territory.

Article V of this treaty established the land boundary between these two countries, commencing in the Gulf of Mexico “three leagues from land, opposite the mouth of the Rio Grande, otherwise called Río Bravo del Norte,” and ending in the Pacific Ocean, “following the division between Upper and Lower California.”<sup>5</sup> One of the most difficult questions confronted by the U.S. and Mexican Commissioners while negotiating the Treaty, was to determine the precise location of the limit separating Upper from Lower Cali-

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*toria, Conflictos, in LA FRONTERA NORTE DE MEXICO 1762-1975 (1976).*

2. WARD MCAFEE & J. CORDELL ROBINSON, ORIGINS OF THE MEXICAN WAR: A DOCUMENTARY SOURCE BOOK (1982). *See generally* JOSÉ MARÍA ROA BÁRCENA, RECUERDOS DE LA INVASIÓN NORTEAMERICANA 1846-1848 (1947).

3. Treaty of Peace, Friendship, Limits, and Settlement (Treaty of Guadalupe Hidalgo), February 2, 1848, T.S. No. 207, 9 Stat. 922-943 [hereinafter Treaty of Guadalupe Hidalgo]. The Treaty was ratified by the United States on March 16, 1848, and by Mexico on May 30, 1848. Ratifications were exchanged at Querétaro, Mexico, May 30, 1848, and it was proclaimed July 4, 1848. *See* TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA 207-428 (Hunter Miller ed., 1937); *see also* Tratado Paz, Amistad y Límites de 1848, *in* TRATADOS Y CONVENCIONES SOBRE LÍMITES Y AGUAS ENTRE MÉXICO Y LOS ESTADOS UNIDOS, Secretaría de Relaciones Exteriores (SRE), *Comisión Internacional de Límites y Aguas entre México y los Estados Unidos*, at 9 (1957) [hereinafter TRATADOS Y CONVENCIONES].

4. A number of events were organized in the United States and Mexico to commemorate the Treaty's 150th anniversary, including: *Symposium: Understanding the Treaty of Guadalupe Hidalgo on Its 150th Anniversary*, 1 SOUTHWESTERN J. OF LAW & TRADE IN THE AMERICAS 3 (1998); JOSÉ LUIS SOBERANES FERNÁNDEZ & J.M. VEGA GÓMEZ, EL TRATADO DE GUADALUPE HIDALGO EN SU SESQUICENTENARIO (Centro de Estudios Constitucionales México-Centroamérica, Instituto de Investigaciones Jurídicas, UNAM. Cuaderno No. 28) (1998).

5. Treaty of Guadalupe Hidalgo, *supra* note 3, art. 5; TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 207-428.

ifornia. This difficulty was principally due to the remoteness and inclemencies of that area, where few explorers had ventured prior to 1848, as well as the lack of well-recognized maps depicting this limit accurately. To solve this problem, the Treaty provided:

[I]n order to preclude all difficulty in tracing upon the ground the limit separating Upper from Lower California, it is agreed that the said limit shall consist of a straight line, drawn from the middle of the Rio Gila, where it united from the Colorado, to a point of the Pacific Ocean, distant one marine league due south of the southernmost point of the Port of San Diego, according to the plan of said port, made in the year 1782 by Don Juan Pantoja, second sailing master of the Spanish fleet, and published at Madrid in the year 1802, in the Atlas to the voyage of the schooners *Sutil* and *Mexicana*: of which plan a copy is hereunto added, signed and sealed by the respective plenipotentiaries.

From time to time, sporadic Mexican voices have been heard claiming that that portion of the international boundary which separates California from the State of Baja California, Mexico, is wrongly demarcated.<sup>7</sup> In general, it is alleged that the boundary is located a farther south than it should be, thus depriving Mexico of a considerable amount of territory. Territory which, they assert, is illegally possessed by the United States.

Basically, two arguments have been advanced to support this allegation: First, when the U.S. and Mexican Commissioners demarcated the boundary for the first time in 1850, rather than using the "port" of San Diego to measure the corresponding marine league due south to establish the limit between both Californias, as mandated by the Treaty, they used instead the lowest coastline of the "bay" of San Diego. It seems that the U.S. Commissioner at the time was able to persuade his Mexican counterpart that there was no terminological distinction between "port" and "bay."

However, in reality the geographical discrepancy between these two terms literally "moved" the boundary some 5.3 nautical miles due south. A Mexican author has stated that in 1848, when the Guadalupe Hidalgo Treaty was signed, the "port" of San Diego was then located in the place known today as "Ballast Point," marked as "Punta Guijarros" in the Pantoja Map. Today, Ballast Point is located in the inland area of Point Loma, slightly northeast from the Cabrillo National Monument and across from the North Island Naval Air Station in Coronado. Ballast Point and the top of Coronado configure the mouth of the channel used by vessels to enter into the Bay of San Diego from the Pacific Ocean today.<sup>8</sup>

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6. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 214-15 (emphasis added).

7. See GUILLERMO CORTÉS ZAMORA, THE TRUE BORDER BETWEEN THE CALIFORNIAS. NORTH OR SOUTH? PORT OR BAY? (1987).

8. Cortés Zamora writes: "In those days, as proved by Don Juan Pantoja's map . . . there was no formal Port of San Diego (which was established in the year 1867) but a site named Ballast Point, which was used as a port . . . . The existing port or what it was used as a port was Ballast Point, in the year when the Guadalupe Treaty was signed and that was 1848." *Id.*

In other words, if the true “port” of San Diego, namely, Ballast Point, had been used in 1850 by the International Joint Commission to establish the limit between California and Baja California, Mexico, the international boundary between both countries would have been traced some 6.5 nautical miles due north of where it is today. Therefore, this boundary would have been found at the northern edge of the City of Chula Vista, at the south end of the Sweetwater National Wildlife Refuge, approximately 7.5 statutory miles north from the U.S. port of entry at San Ysidro.

This would have left the lower part of the Bay of San Diego, jointly with Coronado Cays, the City of Chula Vista, the City of Imperial Beach, the Imperial Beach Naval Air Station, the Tijuana River National Estuarine Research Reserve, Nestor, Otay, the City of San Ysidro, Castle Park, Rancho del Rey, Otay Ranch, Otay Mesa, Brown Field and the Lower Otay Reservoir, and Tecate, Potrero, Campo, Jacumba and Calexico, on the Mexican side.

The limit that separates Upper from Lower California consists of a straight line drawn from the confluence of the Gila and Colorado, “to a point of the Pacific Ocean, distant one marine league due south . . . of the Port of San Diego,” as depicted in the Pantoja Map, pursuant to Article V of the Guadalupe Hidalgo Treaty. For purposes of discussion, when one traces a straight line separating Alta from Baja California commencing one marine league further south of “Ballast Point” (where the “true” Port of San Diego was located in 1848) and ending at the confluence of the Gila and Colorado, on the one hand, and the international boundary line as it exists today, with its length of some 148 miles, on the other, the resulting triangular territory has an area of approximately 543,000 square miles.<sup>9</sup>

The second argument advanced to support the allegation that the current international boundary between California and Baja California, Mexico, is located in the wrong place claims that the point of the confluence of the rivers Gila and Colorado, which marks the eastern terminal point of that boundary and was first demarcated by the International Joint Commission in 1850, has been unilaterally moved south by the United States, placing it in violation of Article V of the Guadalupe Hidalgo Treaty.

In his conclusions, Señor Cortés Zamora asserts that “in the California boundary line there were several major mistakes detrimental to Mexico,”<sup>10</sup> among them:

1) To substitute the word “port,” as expressly written in the Treaty of Guadalupe Hidalgo, for the term “bay,” as it was done by the [U.S. and Mexican] Commissioners, “is an outrageous mistake;”<sup>11</sup>

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at 73-74.

9. Cortés Zamora refers to this land area, whose total he calculated, as “The lost triangle.” He added: “What this [International Joint] Commission did was to invent a new boundary.” *Id.* at 73.

10. *Id.* at 111.

11. *Id.*

2) "This 'terminological mistake' made Mexico lose 1,358,163 square meters [sic] of land, plus a good portion of the San Diego Bay;"<sup>12</sup>

3) "The islands in the Pacific and the islands in the Gulf of Mexico, not having been mentioned in any treaty, still belong to Mexico."<sup>13</sup>

As of today, 151 years have elapsed since the Treaty of Guadalupe Hidalgo was signed by both countries. However, the reactions this treaty arouses in the hearts and minds of the nationals from the United States and Mexico are drastically different. Whereas relatively very few Americans would identify this legal instrument as the treaty that ended the 1846-48 war with Mexico, or as the legal instrument that provided the United States with the immense and rich territories of Arizona, California, Colorado, New Mexico, Nevada, and Utah, for most Mexicans this treaty generates very intense and painful emotions, even today. For them, it inspires anger, frustration, shame, and dishonor.<sup>14</sup> Above all, this treaty typifies a violent act of injustice committed by the United States to take away by brute force and political maneuvering vast territories belonging to a neighboring nation in the midst of political and economic chaos. Therefore, with all this emotional and nationalistic baggage, it is not unexpected that the Treaty of Guadalupe Hidalgo, since its inception, has played a central and decisive role in shaping Mexico's foreign policy towards the United States.

This article attempts to provide a systematic and objective account of the technical work conducted by the International Joint Commission set up by the Treaty to establish the international boundary between the United States and Mexico, with particular reference to the San Diego-Tijuana region. Accordingly, this work may be characterized as a simple research effort directed at identifying, studying, and evaluating the prolific but highly technical documentary sources associated with this delicate and sensitive chapter of the early bilateral relations between both countries.

This article is divided into five parts. Part I analyzes the negotiations between the U.S. and Mexico, quite prolonged and full of suspense, to establish that segment of the international boundary between California and Baja California, Mexico. Part II discusses the demarcation of the boundary between Upper and Lower California. Part III addresses an intriguing but delicate international law question: What would be the legal consequences, if any, in the event that the International Joint Commission, in the process of physically demarcating the international boundary upon the ground, deviated from the tenor of the provisions mandated by Article V of the Treaty of the Guadalupe Hidalgo? In light of the preceding discussion, Part IV evaluates the arguments advanced by Mexican nationals alleging that the international

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12. *Id.*

13. *Id.* Regarding the California Channel Islands see *infra* Part V of this article.

14. In the opening paragraph of a recent study by UNAM's prestigious Institute of Legal Research (IIL) on the 1848 Treaty, the authors initiate it with this opening paragraph: "1998 marks the 150<sup>th</sup> anniversary of the signing and entering into force of the Treaty of Guadalupe Hidalgo, shame and dishonor of all Mexicans . . ." FERNÁNDEZ & GÓMEZ, *supra* note 4, at 9.

boundary in the San Diego-Tijuana region is wrongly demarcated. Part V briefly discusses the legal status of the California Channel Islands (known in Mexico as the *Archipiélago del Norte*) in relation with the 1848 Treaty and international law. Finally, this Article concludes by discussing the final outcome of this research and presents the corresponding conclusions.

## I. THE PANTOJA AND DISTURNELL MAPS

The Treaty of Guadalupe Hidalgo, as signed, was comprised of four papers: 1) the text of the treaty itself; 2) the additional and secret article which was not ratified by the U.S. Senate and never entered into force; 3) the authenticated "Disturnell Map;" and 4) the authenticated "Plano del Puerto de San Diego,"<sup>15</sup> both of these maps being mentioned in Article V of the Treaty of Guadalupe Hidalgo.

### A. *The Pantoja Map*

The Pantoja Map was the first map made of the Bay of San Diego, California (*See* MAP NO. 1).<sup>16</sup> It was drawn on September 10, 1782 by Juan Pantoja y Arriaga, Second Pilot of the Spanish Armada, and published at Madrid, Spain, in 1802 in the Atlas accompanying the book reporting the voyage of the Schooners *Sutil* and *Mexicana* to the Strait of Fuca.<sup>17</sup>

Although San Diego was first visited by the Spanish explorer Juan Rodríguez Cabrillo<sup>18</sup> on September 28, 1542, who named it *Puerto de San Miguel*, no maps of the region were ever published until 1782, 240 years after its discovery. In those days there was little or no interest on the part of the Spanish Crown to disseminate maps or cartographic charts of the

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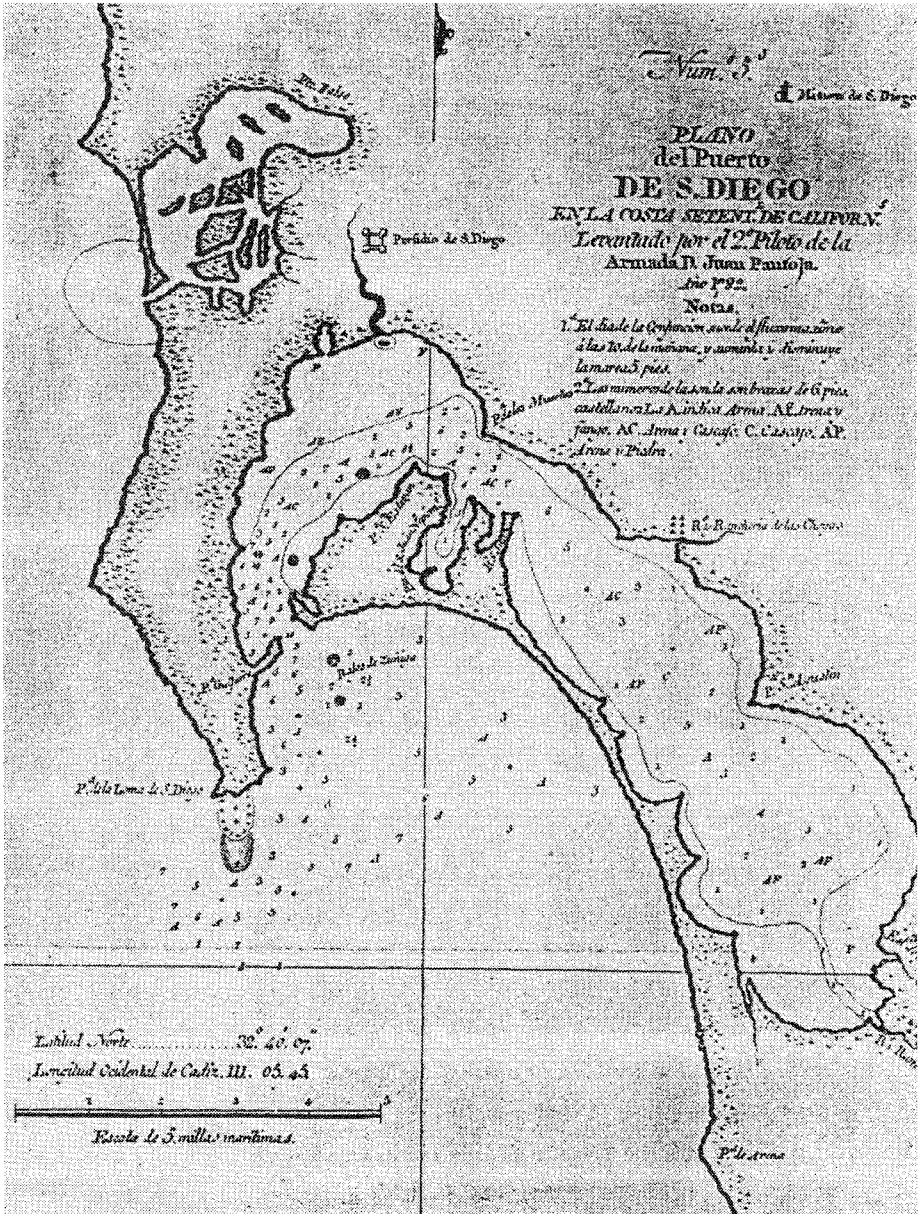
15. *See* TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 236.

16. Its complete Spanish title reads: "*Plano del Puerto de San Diego en la Costa Setentrional de California Levantado por el Segundo Piloto de la Armada D. Juan Pantoja. Año 1782.*" A copy of this map is kept at the Hill Collection, Special Documents, Central Library, University of California, San Diego (La Jolla); *see also* THE VOYAGE OF THE FRIGATE PRINCESA TO SOUTHERN CALIFORNIA IN 1782 AS RECORDED IN THE LOGS OF JUAN PANTOJA Y ARRIAGA AND ESTEBAN JOSÉ MARTÍNEZ 137, 139 (Geraldine V. Sahyun trans., 1982) (found at Santa Barbara Mission-Archive Library, Santa Barbara, California) [hereinafter VOYAGE OF THE FRIGATE PRINCESA].

17. *See* JOSÉ ESPINOZA Y TELLO, RELACIÓN DEL VIAGE HECHO POR LAS GOLETAS SUTIL Y MEXICANA EN EL AÑO DE 1792 PARA RECONOCER EL ESTRECHO DE FUCA: CON UNA INTRODUCCIÓN EN QUE SE DA NOTICIA DE LAS EXPEDICIONES EJECUTADAS ANTERIORMENTE POR LOS ESPAÑOLES EN BUSCA DEL PASO DEL NOROESTE DE LA AMÉRICA. (1802) (a Spanish Voyage to Vancouver and the northwest coast of America: being the narrative of the voyage made in the year 1792 by the Schooners *Sutil* and *Mexicana* to explore the Strait of Fuca) (Cecil Jane trans., 1930).

18. *See* AN ACCOUNT OF THE VOYAGE OF JUAN RODRIGUEZ CABRILLO (Cabrillo National Foundation 1999); *see also* CABRILLO'S LOG, 1542-1543 (James R. Moriarty & Mary Keistman trans.). THE WESTERN EXPLORER Nos. 2-3 (Cabrillo Historical Association, San Diego, California 1968).

MAP NO. 1: PANTOJA MAP OF 1782



California region. The Spanish Crown was likely afraid that such geographical information might have been used by the navigators of other countries—Great Britain, France, Portugal, and the Netherlands, in particular—who were then determined to find the mythical “Strait of Anián.”<sup>19</sup> This strait is said to be described by García Ordoñez de Montalvo in his beautiful romance titled *Las Sergas de Esplandián* in Rome in 1519.<sup>20</sup> It was the era of “California’s imaginary geography,” as Bancroft<sup>21</sup> aptly described it.

Three major activities contributed to rescue California’s geography from the realm of the imaginary: first, the conduct of important maritime expeditions, including those of Gali in 1584; Rodríguez de Cermeño in 1595; and Sebastián Vizcaíno in 1602.<sup>22</sup> Second, the establishment of the intrepid and long journeys of the Manila Galleons<sup>23</sup> which developed a regular path of trade and communication between New Spain (present day Mexico) and Asia. At the same time, this maritime route fostered the socioeconomic development of certain ports along the Pacific Ocean, such as San Blas, Zihuatanejo, and Acapulco, all of them located in New Spain. Finally, a clear and strong Spanish policy designed to populate recently discovered places played a key role, complemented by the permanent endeavor to convert aboriginal populations into the Catholic faith.<sup>24</sup>

Certainly, it was the combination of these activities that led to the emergence of *presidios* and *misiones* at San Francisco in 1794, Monterey in 1770, Santa Barbara in 1782, and San Diego in 1769.<sup>25</sup> In order to survive, these

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19. The Strait of Anián, also known as The Northern Strait (*Estrecho del Norte*), was an imaginary passage connecting the Atlantic with the Pacific Ocean. Given its perceived strategic importance, major maritime powers unsuccessfully sent their explorers for many years to find this passage. See generally MICHAEL W. MATHES, VIZCAÍNO AND THE SPANISH EXPANSION IN THE PACIFIC OCEAN 1580-1630 (1968).

20. García Ordoñez de Montalvo in 1510 wrote a famous work which was read by many of the Spanish conquistadors entitled “*Amadis De Gaula*.” See ALVAR DEL PORTILLO Y DIÉZ DE SOLLANO, DESCUBRIMIENTOS Y EXPLORACIONES EN LAS COSTAS DE CALIFORNIA 123-28 (1997).

21. HUBER HOWE BANCROFT, HISTORY OF CALIFORNIA, 1542-1800, at 66-70 (1884).

22. Regarding these explorers, see the splendid book MIGUEL LEÓN-PORTILLA, CARTOGRAFÍA Y CRÓNICAS DE LA ANTIGUA CALIFORNIA, 74, 81, 84-89 (UNAM y Fundación de Investigaciones Sociales, México 1989); see also PORTILLO Y SOLLANO, *supra* note 20, at 161-204.

23. For a fascinating work on this specific topic see WILLIAM LYTLE SCHURZ, THE MANILLA GALLEON (1959). For information of the construction, crew training, shipboard life, and navigational aspects of these vessels, see CARLA RAHN PHILLIPS, SIX GALLEONS FOR THE KING OF SPAIN (1986).

24. See FRAY JUAN DE TORQUEMADA, MONARQUÍA INDIANA (*de los Veinte y Un Libros Rituales y Monarquía Indiana, con el Origen y Guerras de los Indios Occidentales, de sus Poblaciones, Descubrimiento, Conquista, Conversión y Otras Cosas Maravillosas de la Mesma Tierra*) (Primera edición 1615) reprinted in Universidad Nacional Autónoma de México (UNAM), Instituto de Investigaciones Históricas, México (1975).

25. Z. ENGELHARDT, THE MISSIONS AND MISSIONARIES OF CALIFORNIA (2d ed., 1929); see also ALEXANDER FORBES, CALIFORNIA: A HISTORY OF UPPER AND LOWER CALIFORNIA FROM THEIR FIRST DISCOVERY TO THE PRESENT TIME (1919) (Reprinted from a London, 1839 original edition).



settlements required the periodic and regular arrival of supply ships loaded with food, soldiers, and friars. Every year, supply ships left the ports of New Spain and sailed along the then remote and unexplored areas of California and other northern lands along the Pacific Ocean.<sup>26</sup>

Silveira de Braganza<sup>27</sup> is of the opinion that, by 1775, it became obvious that larger ships were needed to protect Alta California and the Manila Galleons, to explore the northwest coast of North America, and to deliver supplies and materials to the new settlements. With these objectives in mind, Antonio María de Bucareli y Ursúa, then Viceroy of New Spain, ordered the construction of two armed frigates: one to be built in San Blas, Mexico, and the other in Guayaquil, Ecuador.<sup>28</sup> Although the vessel made in New Spain was named *Nuestra Señora del Rosario*, it was better known as *La Princesa*. In the spring of 1779, this vessel made her maiden voyage to the remote waters of Alaska to be assigned later as a supply ship to serve the ports of Alta California.<sup>29</sup>

Due to the fact that the voyages of supply ships were considered routine activities—especially when compared to the risks and dangers faced by maritime explorers in uncharted waters or with the adventurous journeys of daring pirates, corsairs, and buccaneers—very few navigation diaries from those ships have been saved. However, one exception is the *Diario de Navegación* of the first exploration of the Santa Barbara Channel by the Spanish frigates *Princesa* and *Favorita* in August and September of 1782.<sup>30</sup> Indeed, the map of the Port of San Diego forms a part of one of those navigation diaries. In March of 1782, the *Princesa* and the *Favorita* sailed north from the Mexican port of San Blas. The *Princesa* was the flagship, commanded by Esteban José Martínez and having Juan Pantoja y Arriaga as his pilot, and the *Favorita* by Juan Agustín Echeverría and José Tovar, respectively. Their instructions were “to deliver the annual supplies for the help of the *presidios* and *misiones* of San Francisco, Monterey, Santa Barbara Channel and San Diego, and equally assigned to search an anchoring place next to Santa Barbara, established in April of this year, since we ignore its location.”<sup>31</sup>

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26. See MATHES, *supra* note 19, at 123-45.

27. See RONALD LOUIS SILVEIRA DE BRAGANZA, *THE PANTOJA MAP OF SAN DIEGO* (1979) (Keepsake of the Friends of the UCSD Library).

28. See BERNARD E. BOBB, *THE VICEREGENCY OF ANTONIO MARIA BUCARELI IN NEW SPAIN, 1771-1779*, at 156-171 (1962). See generally LEWIS HANKE, *SPANISH VICEROYS IN AMERICA* (1972).

29. See *VOYAGE OF THE FRIGATE PRINCESA*, *supra* 16, at 4; see also CHARLES E. CHAPMAN, *A HISTORY OF CALIFORNIA: THE SPANISH PERIOD* 344 (1921).

30. See Henry R. Wagner, *An Exploration of the Coast of Southern California in 1782*, in *HISTORICAL SOCIETY OF SOUTHERN CALIFORNIA* 135 (Vol. XVII, No. 14, 1935).

31. This text is taken from a small map by Juan de Pantoja, titled: *Pequeña Carta* (Little Chart) which extends from the Point of Santa Marta (*Purísima Point*) to Todos Santos (*Ensenada*), drawn from data obtained on the 1782 voyage of the *Princesa*, reprinted in Wagner, *supra* note 30.

After unloading their cargo in San Francisco and staying for a few days in Monterey (July 6-24), the two frigates continued their route to the south passing *Punta de Pedernales* (present day Point Argüello) and *Punta de la Concepción*, to then reach the Santa Barbara Channel by August 1, where they conducted a detailed survey of the islands. On August 21, the *Princesa* and the *Favorita* anchored in the port of San Diego, near *Punta de los Muertos* (Dead Man's Point). In this place, some of the crew were put to work on the church at the *misión*, which was almost finished.<sup>32</sup>

Regarding the map of the Port of San Diego, Pantoja traced it based on his personal exploration and survey, conducted on September 10, 1782. His original intention had been to examine *Bahía de Todos Santos* in Baja California. However, a heavy kelp bed concentration prevented him from doing so.<sup>33</sup> Upon his return, therefore, he decided to survey the bay of San Diego, which later resulted in the now famous map.<sup>34</sup> According to the navigation diaries of Martínez and Pantoja,<sup>35</sup> these navigators gave names to several points along the California coastline between Punta Concepción and Santa Barbara, although the names were not retained with the passing of time.<sup>36</sup>

Juan Pantoja received professional training in Spain at the Seminary of San Telmo in Seville, completing his studies in 1770. After his graduation, he was assigned to the Naval Department in El Callao, in Lima, Perú, where he served six years. In 1777, Pantoja received the title of *Pilotín* (Little Pilot or Coastal Pilot), and, jointly with José Tovar y Tamariz, was assigned to the Naval Department at San Blas in New Spain. Both Spaniards accompanied Lt. Bodega y Cuadra in the *Favorita*. Pantoja served as navigator and cartographer of the supply vessels to Alta California. Promoted to second pilot in 1779, Pantoja sailed as pilot on the flagship *Princesa*, under the command of Ignacio Arteaga in an expedition to Alaskan waters. In 1781, Juan Pantoja

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32. See Wagner, *supra* note 30, at 137.

33. The waters off the southern California coast are filled with kelp. Kelp, a large broad-leaved seaweed is a member of the brown's algae phylum (*Pheophyta*). Kelp are rich in iodine, potash, potassium, and vitamins. *Macrosystis* is a large kelp that usually grows in underwater forests. See GROLIER DANBURY, THE ENCYCLOPEDIA AMERICANA 353 (1996).

34.

Still another copy [of the Pantoja Map] seems to have been the basis of the versions of this map published at London in 1789 in English, at Paris in 1797 in French, at London in 1799, in English, at Madrid in 1802 in Spanish, at Mexico City in 1825 in Spanish, and at Paris in 1844 in French.

TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 371.

35. VOYAGE OF THE FRIGATE PRINCESA, *supra* 16. The diaries are kept at the *Archivo General de la Nación* in Mexico City.

36. A schematic version of these diaries was published by the eminent "Californiologist" Henry R. Wagner in December of 1935. The *Instituto de Investigaciones Históricas* (Historic Research Institute) of the Autonomous University of Baja California (UABC) has photocopied numerous materials on Alta and Baja California, including navigation diaries, from Mexico's *Archivo General de la Nación* (GENERAL NATIONAL ARCHIVES). These valuable materials form a special collection (*Fondo*) available at this UABC's Institute.

was given command of the first voyage of the newly outfitted frigate *Favorita*. Later on, he commanded the *Aranzazú* in a supply trip along the California coast. He also participated in mapping and exploratory voyages in Nicaragua. Juan Pantoja was still in San Blas, Mexico, in 1803.<sup>37</sup>

In California, the map of the Port of San Diego was not the only map traced with initiative and cartographic skill by Pantoja. There are several maps and charts accompanying his diary. One of the most intriguing maps, both from a geographic and historic viewpoint, is the so-called *Pequeña Carta* (Little Chart) of the California coast from Punta de Santa Marta to Bahía de Todos Santos. In this chart, all the islands along that portion of the littoral are shown, with the exception of San Nicolás.<sup>38</sup>

In early 1848, when the U.S. and Mexican Commissioners were negotiating the location of the limit separating Alta from Baja California, this burning question received considerable attention: Was the Port of San Diego a part of Upper or Lower California? The answer to this question became increasingly complicated when one considers that, at that time, no final and definite answer was able to be given on this point. On the contrary, the information on this question provided by international explorers who had visited that region at different times, prior to 1848, was not only factually unsupported, but highly questionable and inaccurate. For example, according to the French explorer Dufflot de Moffras, the town of San Diego, situated a few miles south of the port of the same name, "has always formed part of Lower California, always been embraced within the jurisdiction of its [Mexican] government."<sup>39</sup> However, U.S. Commissioner Trist was openly reluctant to accept these assertions, especially when his instructions mandated him to include the port of San Diego as a part of Upper California, in the intelligence that this port should be considered as a *sine qua non* condition of the territories to be gained by the United States.<sup>40</sup>

The more they discussed this question, the more both parties had severe reservations and expressed confusion as to where to place the Port of San Diego. Interestingly, in his proposal of January 5, 1848, U.S. Commissioner Trist abandoned the thirty-second parallel for any part of the boundary and "perhaps convinced of the time being, or perhaps merely assuming, that San Diego was in Lower California, he ran the line from the mouth of the Gila to

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37. Information condensed from VOYAGE OF THE FRIGATE PRINCESA, *supra* note 16, at 4, 5.

38. A reproduction of this *Pequeña Carta* (Small map) from the Point of Santa Marta (*Purísima Point*) to Todos Santos (*Ensenada*) is reproduced in VOYAGE OF THE FRIGATE PRINCESA, *supra* note 16, at 145; see also Henry R. Wagner, *The Exploration of the Santa Barbara Channel Coast, in THE CARTOGRAPHY OF THE NORTHWEST COAST OF AMERICA TO THE YEAR 1800*, at 197 (1937).

39. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 319, 324.

40. *Id.* at 321.

a point on the Pacific one league *north* of the Bay of San Diego.”<sup>41</sup> The pertinent portion of his proposal read:

and of the said river Gila, until it empties into the Rio Colorado; thence, across the said Rio Colorado to the Pacific Ocean, following the established division line between Upper and Lower California; and, lest any difficulty should hereafter occur in tracing the said division line upon the ground, *it is agreed that it shall consist of a straight line drawn from the middle of the ground of the river Gila to a point on the shore of the Pacific one geographical league due north of the northernmost point of the Bay of San Diego.*<sup>42</sup>

Two days later, on January 7, Trist changed his mind and he now concluded that “San Diego was in Upper California.”<sup>43</sup> This new proposal

was to divide the port between the United States and Mexico so that the northern portion thereof, including the entrance, should be American and the southern portion Mexican; and in return the United States was to acquire a square league of territory on the western band of the Colorado, below the mouth of the Gila.<sup>44</sup>

The draft presented by Trist read:

thence, across the said Rio Colorado, to the Pacific Ocean, following a straight line drawn to the point of the shore of the Port of San Diego, on the southern bank or the creek or inlet, on the north bank of which creek is the settlement called *Ranchería de las Choyas*, which point is about equidistant from the northern and southern extremities of said Port; thence, due Southwest, across the said port, and across its outer shore, to the Pacific Ocean.<sup>45</sup>

In his discussions with the Mexican negotiators on January 7, Trist withdrew his proposal of January 5. At that time, his rationale was that after a careful examination as to whether the Port of San Diego formed a part of Alta or Baja California, “he had found that Baron Von Humboldt, Moffras, and other geographers assigned San Diego to Upper California and therefore he could not agree that it should be without the limits of the United States.”<sup>46</sup>

Regarding his proposal of January 7, the Mexican Commissioners declined to accept it, stating that they were “wholly unwilling to give up a square league of territory on the western or right bank of the Colorado.”<sup>47</sup> In

41. *Id.* at 322 (emphasis added).

42. *Id.* at 323 (emphasis added).

43. *Id.*

44. *Id.*

45. *Id.*

46. *Id.* at 324.

47. In the formal document explaining the reasons which moved the Mexican Commissioners to accept the Treaty (*Exposición de Motivos presentada por los Comisionados de México*), recently made public in its entirety by the Secretariat of Foreign Affairs (*Secretaría de Relaciones Exteriores*), it is stated that Trist wanted to share the Bay of San Diego with

hindsight, one can perceive how fortunate the United States was that Mexico declined to accept this Salomonic proposal. Had Mexico responded in the affirmative, the Bay of San Diego would have been equitably shared between both countries, thus dramatically changing the international boundary between the United States and Mexico in this region.

It appears that during this period, and observing these developments, Trist was finally convinced of these transcendental premises: that San Diego was within Upper California, that the proposed division of the port was unacceptable and that "the necessary and only alternative" in drawing the limit between Upper and Lower Californias was to place said limit south of San Diego. This was the position Trist doggedly adhered to during the last days of the negotiations and which ultimately resulted in a final agreement reached with Mexico regarding the limits of the Californias; a position which was later incorporated into the text of Article 5 of the Treaty of Guadalupe Hidalgo.

However, prior to reaching this agreement on the limit between the Californias, the Mexican Commissioners prepared their *projet* of a treaty which was delivered to Trist on January 9, 1848. This Mexican draft acquires special legal significance for the following reasons: (1) The international boundary between both countries is almost identical to that in Article 5 of the Treaty; (2) To dissipate difficulties in establishing the limit separating Upper from Lower California, the Plan of the Port of San Diego is specifically mentioned, as drawn by Juan Pantoja and first published in Mexico in 1825; (3) To demarcate the international boundary established by the treaty, "each of the two governments shall name a commissioner and a geometer who shall . . . mark the said boundary along its entire course;"<sup>48</sup> (4) "They shall keep journals and make plans of their operations, and the result agreed upon by them shall be held as a part of this treaty and shall have the same force as if it were inserted in it . . . ;"<sup>49</sup> and, (5)

The two Republics promise . . . that the dividing line established by this article shall be religiously respected by each of them and *that no variation shall in the future be made in the said dividing line, except by the express and free consent of both nations* lawfully given by the supreme Government of each of them in conformity with their own Constitutions.<sup>50</sup>

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Mexico subject to a dual condition: First, that the entry to the port be preserved exclusively by the United States; and, second, that the U.S. be compensated with a square league of territory in the right bank of the Colorado to establish there an American settlement. See JOSEFINA ZORAIDA VÁZQUEZ, *LA INTERVENCIÓN NORTEAMERICANA, 1846-1848*, at 158 (Secretaría de Relaciones Exteriores 1998).

48. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 325.

49. *Id.* (emphasis added).

50. *Id.* (emphasis added).

It has been reported that the Mexican *projet* contains the first specific mention of the *Plan of the Port of San Diego* drawn by Pantoja, in the following terms:

ARTICLE 5. The dividing line between the two Republics shall commence in the Gulf of Mexico three leagues from land in front of the mouth of the Río Bravo del Norte. . . it shall then follow along the same southern boundary [of New Mexico] and along the western boundary of New Mexico until it strikes on this last the first branch of the River Gila; it shall then continue along the middle of this river to the confluence with the Colorado; and from the point of confluence of the two rivers the dividing line shall run straight to the westward to three leagues from land opposite the Punta de Arena on the coast of the Pacific Ocean to the south of the Bay of San Diego, as the said Punta de Arena is marked in the Plan of the Port of San Diego which was published in Mexico in the year 1825 and of which copy is annexed to this treaty, signed and sealed by the Plenipotentiaries who have celebrated it.<sup>51</sup>

Finally, it should be pointed out that the authenticated copy of the Map of Pantoja annexed to the Treaty of Guadalupe Hidalgo appears to have been “either made or directed the making of the tracing” by Cap. Robert E. Lee,<sup>52</sup> from item No. 5 of the Atlas of the Voyage of the frigates *Sutil* and *Mexicana*,<sup>53</sup> published in 1802, rather than the 1825 Mexico City edition in Spanish cited by the Mexican Commissioners in their *projet*.

The so-called “authentication” of this map<sup>54</sup> consisted in the agreement reached by both parties that the map in question, with the original signatures of all of the Plenipotentiaries involved, and the corresponding official seal, accurately depicted the international boundary between both countries “distant one marine league due south of the southernmost point of the Port of San Diego,” as mandated by Article V of the Treaty.<sup>55</sup> In their report to their government (*Exposición de Motivos*), the Mexican Commissioners, referring to the limit in the San Diego-Tijuana region, wrote:

Describing the agreed boundary from west to east, Your Excellency will note that its initial point in the Pacific coast has been established, not south of San Miguel. . . but at one marine league, or three [nautical] miles from San Diego. In the annexed map, traced from the one drawn in 1782 by the

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51. *Id.* (emphasis added).

52. *Id.* at 371. A note written by Cap. Lee to Trist, dated at Mexico City on January 15, 1848, reads: “I return the volume from which the map was copied I handed you some days since.” *Id.* (Trist Papers, 28:61138).

53. See DONALD C. CUTTER, CALIFORNIA IN 1792: A SPANISH NAVAL VISIT (1990). Part II of this volume contains an English translation and annotation of the voyage of the Spanish Schooners *Sutil* and *Mexicana* in 1792.

54. For a more detailed discussion on this map, see *infra* text accompanying notes 193-206.

55. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 325.

Spanish pilot Don Juan Pantoja, the limit in that portion has been marked in red ink.<sup>56</sup>

### B. The Disturnell Map

The Disturnell Map, whose title was: “*Map of the United Mexican States, as organized and defined by various acts of the Congress of said Republic, and constructed according to the best Authorities. Revised Edition. Published in New York in 1847 by J. Disturnell,*” (See MAP NO. 2),<sup>57</sup> created serious confusions between the plenipotentiaries of both countries.

Confusion arose about this map because it is a reprint of an earlier map of Mexico by White, Gallaher & White, which has been characterized by Col. Lawrence Martin, Chief of the Division of Maps at the Library of Congress, as an act of “bold plagiarism” of a map of Mexico by H.S. Tanner.<sup>58</sup> This map was reprinted at least for twenty-three editions (seven of them in 1847). In turn, Tanner’s map was a reproduction of a southwest part of North America of a previous map that he produced. It has been said by Col. Martin that “confusion might have arisen” if the negotiating parties had not decided to add the Disturnell Map to the Guadalupe Hidalgo treaty.<sup>59</sup> This may have been particularly true when one considers, first, that it was impossible to differentiate between the numerous (English) editions of this map and, second, that the same map had already appeared in Paris in a Spanish edition in 1847, although the “acts of the Mexican Congress” utilized to construct the map at that time were those enacted by the government of that country ten years earlier.<sup>60</sup>

According to an official publication of the U.S. government,<sup>61</sup> during the negotiations of the Treaty of Guadalupe Hidalgo three different editions of the Disturnell Map were used: (1) The seventh edition, dated 1847, with the originals of the Treaty in the archives of the Department of State at Washington, D.C.; (2) The twelfth edition, also dated in 1847, annexed to the original Treaty currently in the archives of the Secretariat of Foreign Affairs (*Secretaría de Relaciones Exteriores*) in Mexico City; and, (3) an edition published in 1846, used by Robert E. Lee in January of 1848 “when he was assisting Trist in determining whether San Diego was in Upper California or

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56. VÁZQUEZ, *supra* note 47, at 157.

57. See TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 340.

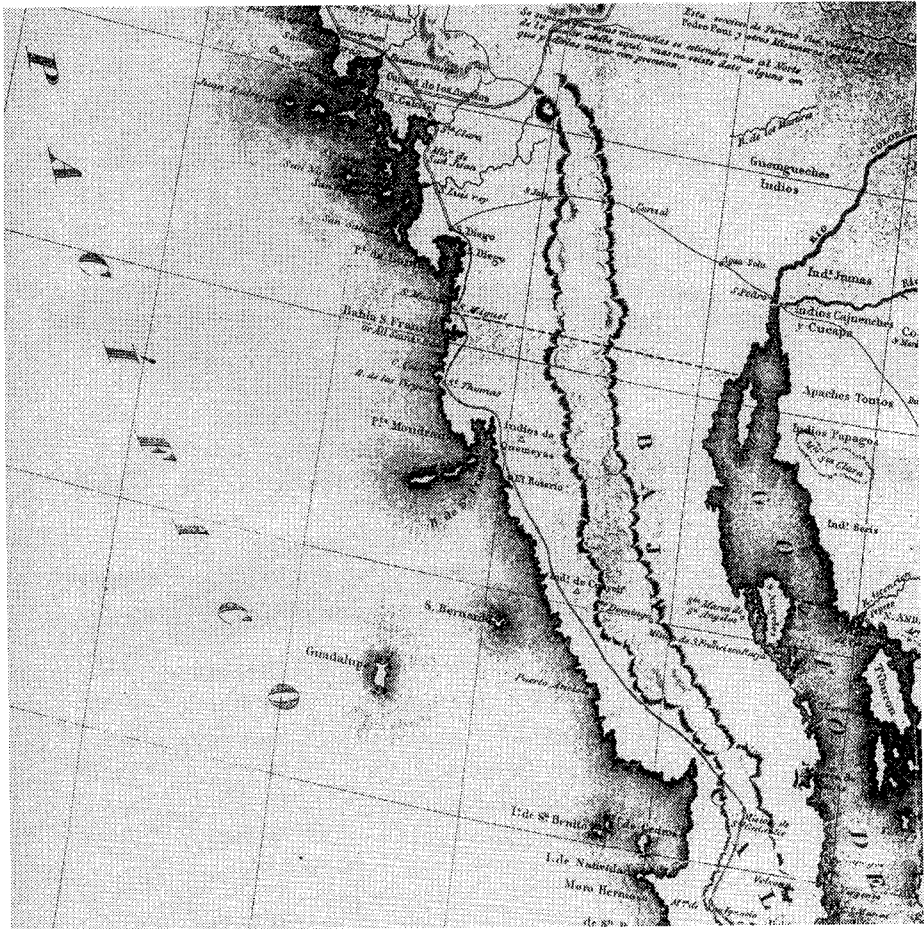
58. *Id.* at 341.

59. *Id.*

60. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA includes a lengthy discussion exclusively devoted to addressing the various technicalities associated with the different editions of the Disturnell Map. See *id.* at 340-70.

61. See *id.* at 362 (“Three Significant Editions of the Disturnell Map”).

MAP NO. 2: THE BOUNDARY BETWEEN UPPER AND LOWER CALIFORNIA AS DEPICTED IN THE DSITURNELL MAP





in Lower California.”<sup>62</sup> It is not known “which of the 1846 editions he [Lee] was using.”<sup>63</sup>

### *C. Major Differences Between the Seventh and the Twelfth Editions of the Disturnell Map*

It merits highlighting that the second map, currently at the *Secretaría de Relaciones Exteriores* (Secretariat of Foreign Affairs) archives in Mexico City, was authenticated and then placed with the Treaty originals by the U.S. and Mexican Commissioners with no evidence that

they knew that they authenticated and placed with the treaty originals two different editions of Disturnell's Map or, indeed, that they suspected there were at least seven editions all dated 1847 and all designated “Revised Edition.” As a matter of fact, although the differences between the seventh edition and the twelfth are numerous, none of these differences caused complications, so far as we know, in the boundary marking by Weller, Bartlett, and their Mexican colleagues.<sup>64</sup>

According to the same source, the seventh edition of this map<sup>65</sup> was published by John Disturnell in the early months of 1847. On April 15 of that year, the U.S. Secretary of State, James Buchanan, appointed Nicholas P. Trist,<sup>66</sup> Chief Clerk of the Department of State, “Commissioner of the United States to the Mexican Republic,” delivering to him on the same date a full power, a letter of credence, his instructions (with a draft of the proposed treaty), and a copy of the seventh edition of the Disturnell Map, which Trist carried with him from Washington to Mexico.<sup>67</sup>

From the documents and correspondence generated by Trist, it can be deduced that this map was used to discuss the placement of the international boundary between both countries, in particular the boundary of Texas and the limit between the two Californias, as discussed by the U.S. and Mexican

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62. *Id.*

63. *Id.*

64. *Id.*

65. In his Memorandum of January 4, 1848, Trist writes: “The map referred to by the Secretary of State as the one I brought with me, is the ‘Revised Edition’ of the one published at New York, in 1847 by J. Disturnell, 102 Broadway, and bearing, in Spanish, the following title: “*Map of the United States of Mexico, as organized & defined by various acts of the Congress of said Republic, and constructed according to the best authorities.*” *Id.* (emphasis added).

66. See ALEJANDRO SOBARZO, *DEBER Y CONCIENCIA: NICHOLÁS TRIST, EL NEGOCIADOR NORTEAMERICANO EN LA GUERRA DEL 47* (sic) (Fondo de Cultura Económica, México, 2a. ed., 1996). See generally WALLACE OHRT, *DEFIANT PEACEMAKER: NICOLAS TRIST IN THE MEXICAN WAR* (1997); ROBERT W. DREXLER, *GUILTY OF MAKING PEACE: A BIOGRAPHY OF NICHOLAS P. TRIST* (1991).

67. See TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 262, 350. The “Instructions” appear at 262-72.

Commissioners at their conference on September 2, 1847. However, it is important to underline that this specific map, according to Trist, was "a [new] map . . . as the mere speculation of an engraver or bookseller, to meet the demand in our country for Maps of Mexico. And this is the character of the one I brought with me."<sup>68</sup> In other words, the map which was used in negotiating a new, long, and complicated international boundary between the United States and Mexico (including the limit between both Californias) happened to be not only a spurious map, but one which most probably had been drawn by some artist in New York City. Furthermore, it did not rely on hard geographical data obtained from surveys, astronomical observations and topographical works conducted by a team of engineers, topographers, or other specialists working *in situ* in those remote, inhospitable, and dangerous regions.

The twelfth edition was also used as an annex to the Treaty of Guadalupe Hidalgo. It is preserved in the archives of the Secretariat of Foreign Affairs in Mexico City and is certified in Spanish and in English. The English certificate, signed by Trist, reads:

This is the Map, referred to in the Fifth Article of the Treaty of Peace, Friendship, Limits and Settlement, between the United States of America and the Mexican Republic, signed this day. Witness our hands and seals, at Guadalupe Hidalgo, this second day of February, one thousand eight hundred and forty-eight.<sup>69</sup>

Although the geographical changes appearing in this map principally made revisions of places in Texas, subsequent editions of the Disturnell Map included numerous geographical changes affecting areas where the new 1848 international boundary was to be established, thus changing, adding or deleting information on toponymical names and places, and even adding information of certain locations where relatively recent military operations of the U.S.-Mexico War had occurred. This and other subsequent editions also included data of coordinates of longitude and latitude whose technical source was not indicated.<sup>70</sup>

The end result of this unsystematic proliferation of the Disturnell Map editions (to be followed later by a series of numerous facsimiles) created doubts, confusion, and concern for those individuals relying on the maps, in

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68. Trist's Memoranda of January 4 and January 7, 1848, TRIST PAPERS, 28:61025-29 and 61068, respectively, *reprinted* in TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note, 3 at 318, 327.

69. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 353. A hand-drawn facsimile of a portion of this map was reproduced in 1878. There are original colored copies of this map in the Mexican archives, in the library of the U.S. Geological Survey, in the Huntington Library (California), in the library of the New York Historical Society, and in the Library of Congress.

70. For extended comments on the gross inaccuracies of the Disturnell and the Pantoja maps, see Alberto MARÍA CARREÑO, MÉXICO Y LOS ESTADOS UNIDOS DE AMÉRICA 214-40 (1962).

particular Mexican government officials. Unlike the government of the United States, who had the ability to rely on the U.S. Army Corps of Engineers or other federal agencies, to verify *in situ* the accuracy of a given location when this was needed, Mexican officials lacked this ability and their only alternative was to turn to ancient maps and older reports written by explorers such as Humboldt, Clavijero, de Moffras, etc. Another problematic scenario for the Mexicans, when those maps or reports were simply non-existent, was to rely on U.S. sources, including the Disturnell Map. In any event, after 150 years have passed since these negotiations took place, it is difficult to ascertain today whether the geographical inaccuracies of the seventh and twelfth editions of the Disturnell Map had a significant impact upon the formulation of the international boundary as it was finally written in Article 5 of the Guadalupe Hidalgo Treaty.

## II. THE DEMARCATION OF THE BOUNDARY BETWEEN UPPER AND LOWER CALIFORNIA

Prior to entering into the study of the technical and legal intricacies associated with the scientific task of defining the almost invisible limit that separated Alta from Baja California, a discussion of the work done by the Joint Commission<sup>71</sup> to demarcate this long and complicated boundary is necessary.

Basically, since 1948, the international boundary between the United States and Mexico has consisted of two types of limits: (1) An natural boundary, formed by several rivers,<sup>72</sup> including the Rio Bravo del Norte (later known in the U.S. as the Rio Grande) which runs 1254 miles from El Paso, Texas to the Gulf of Mexico; and, (2) An artificial boundary established by straight lines which unite specific points defined by their coordinates of latitude and longitude. These artificial lines measure 179.96 miles in New Mexico, 376.98 miles (including today's twenty-four miles of the Colorado River) in Arizona, and 140.73 miles in California.<sup>73</sup>

Although today the U.S.-Mexico boundary seems to be not only well-defined but also well-studied, in early 1850, when the Joint Commission initiated its technical work, the entire length of these confines was virtually un-

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71. The 1848 Treaty did not give a specific name to this technical binational body. Generally, in the official documentation of the time it was referred to as the "Joint Commission" or the "Commission for Running and Marking the Boundary between the United States and Mexico." REPORT OF THE SECRETARY OF INTERIOR, Senate Executive Doc. No. 34, 31st Congress, 1st Sess. (Part II) (1859).

72. The other international rivers serving as natural or "arcifinious" boundaries are the Colorado and the Tijuana.

73. Information provided by the U.S. Section of the International Boundary and Water Commission (IBWC). Metz reports that the "official" length of this boundary totals 1,951.36 miles divided this way: 1,253.69 miles of the Rio Grande; 697.67 miles from El Paso, Texas to the Pacific and 23.72 miles of the brief stretch of Colorado River. See generally LEON C. METZ, BORDER (2d ed. 1990).

known. Although during the sixteenth and seventeenth centuries there had been a few daring Spanish explorers who ventured into those remote lands searching for wealth and power, most of them had little or no interest in accurately recording, either in writings or in maps, their physical location or their ephemeral presence in those vast and inhospitable territories. The names of Alvar Núñez Cabeza de Vaca, Antonio de Espejo, Gaspar Castaño de Sosa, Juan de Oñate and Diego de Vargas,<sup>74</sup> joined those of later explorers like Alexander Von Humboldt and Dufflot de Moffras, whose lucid narratives laid down the foundations to provide the very first objective descriptions of those confines.<sup>75</sup> A century later, the search for souls was in the hands of Fray García de San Francisco, and especially the priests Francisco Javier Clavijero, Eusebio Francisco Kino, and Junípero Serra, whose works not only contributed to acquire a more precise geographical knowledge of the true geography of the Californias but also provided valuable data regarding some of its flora and fauna.<sup>76</sup>

Most of the work of this Commission along the limit of the Californias was conducted traversing unexplored territories, deserts, and other inhospitable places with scarce or no water, exposed to the inclemencies of the weather, and the constant and fierce attacks of different types of indians. The Commission was also exposed to the problems and convulsions generated when the news of the discovery of gold in California spread throughout the globe. Among other predicaments, this news exponentially increased the salaries of gold workers and, more importantly, served as a powerful magnet which pulled workers and soldiers of the military escort which accompanied the Commission away from this technical body, forcing such workers and soldiers of the military escort to desert in search of new horizons. At the U.S. level, the American section was riddled with politics since its very inception, curtailing its funds and impairing its activities.<sup>77</sup>

It was not until the Joint Commission initiated its monumental work when a professional and scientific survey of the international boundary, and its contiguous lands, was finally accomplished. Indeed, for those familiar with the work of this binational body, the search for enlightenment came as a result of the extraordinary scientific accomplishments of this Commission.

Recently, it has been asserted that the final report written by W. H. Emory, titled: *Report of the United States and Mexican Boundary Survey*,<sup>78</sup>

74. See ARMANDO B. CHÁVEZ M, HISTORIA DE CIUDAD JUÁREZ 6, 7 (1991).

75. See ALEXANDER VON HUMBOLDT, ATLAS DE MÉXICO (*preparado por Hanno Beck y Wilhelm Bonackes*, Fondo de Cultura Económica, México, 1971).

76. See FRANCISCO XAVIER CLAVIJERO, HISTORIA DE LA ANTIGUA O BAJA CALIFORNIA *preparada por Miguel Leó-Portilla*, Editorial Porrúa, México, 1970); EUSEBIO FRANCISCO KINO, LAS MISIONES DE SONORA Y ARIZONA (Archivo General de la Nación, México 1913-1922); JUNÍPERO SERRA, WRITINGS OF JUNIPERO SERRA (Antonine Tibesar ed., Academy of American Franciscan History, Washington, 1955-1966).

77. See METZ, *supra* note 73, at 11.

78. REPORT OF THE UNITED STATES AND MEXICAN BOUNDARY SURVEY (*made under the Direction of the Secretary of the Interior, by William H. Emory, Major First Cavalry and*

has long been recognized "as one of the classics of Texas and Western history."<sup>79</sup> The report, which was lavishly produced and contained more than 350 exacting lithographs and engravings, became a "publishing phenomenon" when it appeared 142 years ago.<sup>80</sup> In the words of William H. Goetzman,

Emory's Report was perhaps the most complete scientific description ever made of the lands, the people, and the border country, including vast stretches of the West Texas and the Big Bend of the Rio Grande. J. Frank Dobie called it "a veritable encyclopedia, wonderfully illustrated, on western flora and fauna."<sup>81</sup>

### A. *The Boundary Commission*

In conformity with Article 5 of the Treaty of Guadalupe Hidalgo,<sup>82</sup> the Boundary (or Joint) Commission met for the first time in San Diego, California, at the office of the U.S. Commissioner on July 6, 1849.<sup>83</sup> Originally, the Treaty provided that the U.S. and Mexican Commissioners and Surveyors should meet at the Port of San Diego "before the expiration of one year from the date of the exchange of ratifications of this treaty," which was effected at the City of Querétaro on May 30, 1848.<sup>84</sup> However, neither party

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*United States Commissioner*), House of Representatives, 34th Congress, 1st Sess., Executive Document No. 135 (3 vols. 1859) [Hereinafter EMORY REPORT]. Vol. I describes the demarcation of the international Boundary between the United States and Mexico; Vols. II and III are an extraordinary scientific description of the "Botany of the Boundary" including plants in general and cactaceae in particular, and the "Zoology of the Boundary," covers reptiles and fishes.

79. Recently, the Texas State Historical Association in cooperation with the Center for Studies in Texas History at the University of Texas at Austin produced a facsimile reproduction of the EMORY REPORT (1987).

80. EMORY REPORT, *supra* note 78, at ix.

81. *Id.*

82. In this regard, Article 5 read:

In order to designate the Boundary line with due precision, upon authoritative maps, and to establish upon the ground landmarks which shall show the limits of both Republics . . . the two Governments shall each appoint a Commissioner and a Surveyor, who, before the expiration of one year from the date of exchange of ratifications of this treaty, shall meet at the Port of San Diego, and proceed to run and mark the said boundary in its whole course, to the Mouth of the Rio Bravo del Norte. They shall keep journals and make plans of their operations; and the result, agreed upon them, shall be deemed a part of this Treaty, and shall have the same force as if it were inserted therein.

Treaty of Guadalupe Hidalgo, art. 5; *see also* TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3.

83. REPORT OF THE SECRETARY OF THE INTERIOR (*made in compliance with A Resolution of the Senate calling for Information in relation to the Commission appointed to Run and Mark the Boundary between the United States and Mexico*), Senate Executive Document No. 119, 32nd Congress, 1st Sess. (Serial 626) at 56 [hereinafter EMORY JOURNAL].

84. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 207.

was able to comply with this deadline because of a series of incidents that prevented them from constituting the Commission on time.<sup>85</sup>

The U.S. government appointed John B. Weller as Commissioner, and Andrew B. Gray as Surveyor;<sup>86</sup> the Mexican government named Pedro García Conde and José Salazar Illarregui,<sup>87</sup> respectively. After the Joint Commission was formally constituted, once both parties were satisfied with the validity of their respective credentials, H.H. Robinson was named Secretary, and D. Gahagan as translator and interpreter, by the United States; and F.M. Chavero, and Felipe de T. Iturbide, respectively, on the part of Mexico.

Directly appointed by President Polk, Weller was a politician who, after returning from the Mexican War, failed to become governor of Ohio.<sup>88</sup> He accepted his appointment on January 16, 1849, and received his instructions from the Secretary of State James Buchanan on January 24 and February 13, 1849. Secretary Buchanan was emphatic to point out that the Treaty placed the Commissioner "in a highly responsible position because . . . the boundary line . . . marked by the Joint Commission shall be deemed a part of the treaty . . . ."<sup>89</sup>

Gray already had accumulated experience on boundary questions: he helped to establish the boundaries between the United States and the Republic of Texas, and had assisted in the Mississippi River Delta survey and the Keweenaw Peninsula of Michigan survey. For a time, he had joined the Texas Rangers and it was evident that he had strong interests in the establishment of a transcontinental railroad across the southwest of the United States.<sup>90</sup> Leon Metz indicates that "he would be remembered as a controversial member of a very contentious group of boundary men."<sup>91</sup>

General Pedro García Conde, the Mexican Commissioner, was a native of Arizpe, Sonora, and a graduate of Mexico's Mining School (*Colegio de Minería*).<sup>92</sup> In 1833, he was the head of a group of engineers who formulated

85. For a narrative of these incidents and obstacles, see Lewis B. Lesley, *The International Boundary Survey from San Diego to the Gila River, 1849-1850*, in *QUARTERLY OF THE CALIFORNIA HISTORICAL SOCIETY* 1-6 (Vol. IX, No. 1, 1930). The U.S. Commissioner and his party arrived at San Diego on June 1, 1849, and the Mexican party not until July 3.

86. See *TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA*, *supra* note 3, at 414.

87. See CARREÑO, *supra* note 70, at 214-15; Sepúlveda, *supra* note 1, at 71-72.

88. METZ, *supra* note 73, at 11. Actually, the first boundary commissioner was A.H. Sevier, of Arkansas, who died after shortly after his appointment.

89. Lesley, *supra* note 85, at 4. With his instructions, Weller received a copy of the 1848 Treaty and a certified copy of the Pantoja Map which "appears to fix precisely what is the southern limit of the Port of San Diego . . . . The middle of the Rio Gila . . . being a natural object, there can be but little difficulty in ascertaining this point." *Id.*

90. In 1856, Gray published a pamphlet describing his explorations "across the continent, for the purpose of determining the practicability of constructing a railroad to connect the valley of the Mississippi with California and the ports of the Pacific." *SURVEY OF A ROUTE FOR THE SOUTHERN PACIFIC R.R. ON THE 82ND PARALLEL, SOUTHERN PACIFIC RAILROAD ("Railroad Record")* (1856).

91. METZ, *supra* note 73, at 13.

92. The appointments of the Mexican Commission were based upon a federal statute

the first map of the State of Chihuahua. President Herrera appointed him Secretary of War and Navy (*Secretario de Guerra y Marina*), and from 1838 to 1844, he directed the Military College (*Colegio Militar*). In 1840, he had the distinction of reconstructing the National Palace. He was serving in the Senate before he was appointed Commissioner by the President.<sup>93</sup>

Comandante Salazar Illarregui was also from Sonora and also a graduate from the Mining School (*Colegio de Minería*). He was considered to be an accomplished engineer. Under Maximilian's empire, he served as Undersecretary for Development and interim Secretary of State.<sup>94</sup> Weller and his party set up their camp near *Punta de los Muertos* (Dead Man's Point) or what was later known as New Town. Lt. William H. Emory, who was attached to the Commission as Chief Astronomer and Commander of the escort of the U.S. troops, established his observatory at the Punta, near the southeast end of the San Diego Bay, and called it Camp Riley, "after the general then commanding in California to whom we were much indebted for affording many facilities in conducting the survey."<sup>95</sup> He was accompanied by two other topographical engineers, Lt. Amiel Weeks Whipple and Lt. E.L.F. Hardcastle.<sup>96</sup>

### B. The Commission's Working Plan

At the session of July 9, 1849, the Joint Commission<sup>97</sup> agreed to the following:

- (a) To conduct surveys to define on the ground (i) the southernmost point of the Port of San Diego, as well as (ii) the two extreme points of the straight line between the Pacific and the junction of the rivers Gila and Colorado, including their respective latitude and longitude; (b) Each party shall pursue its own method to arrive at the required result; (c) When both parties have mutually satisfied themselves of the accuracy of their surveys and the resulting data, then the demarcation of these points shall take place by the placement of monuments (or any other system mutually agreed

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dated November 2, 1848, which *inter alia* allocated \$10,000 pesos to provide the Commission with the necessary scientific instruments. See ING. SALAZAR ILLARREGUI, *DATOS DE LOS TRABAJOS ASTRONÓMICOS Y TOPOGRÁFICOS DISPUESTOS EN FORMA DE DIARIO, PRACTICADOS DURANTE EL AÑO DE 1849 Y PRINCIPIOS DE 1850 POR LA COMISIÓN DE LÍMITES EN LA LÍNEA QUE DIVIDE ESTA REPÚBLICA DE LA DE LOS ESTADOS UNIDOS 9-10 (1850)* [hereinafter *DATOS*].

93. See *ENCICLOPEDIA DE MÉXICO* 363 (1977); see also CARREÑO, *supra* note 70, at 214-15.

94. See *ENCICLOPEDIA DE MÉXICO*, *supra* note 93, at 467 (Vol. XI). Ing. Salazar Illarregui published the book: *Datos de los Trabajos Astronómicos y Topográficos dispuestos en forma de Diario, practicados durante el año de 1849 y principios de 1850 por la Comisión de Límites en la Línea que divide esta República de la de los Estados Unidos* (1850). Carreño points out that Salazar Illarregui was Professor of Geodesy at the Military College. See CARREÑO, *supra* note 70, at 215.

95. EMORY REPORT, *supra* note 78, at 4.

96. See EMORY JOURNAL, *supra* note 83, at 57-58 (Document No. 119).

97. See *DATOS*, *supra* note 92, at 12-13. At this time, Ing. Salazar Illarregui was deeply concerned with the technical deficiency of their scientific instruments.

upon the parties); and (d) Both parties shall exchange technical information from time to time, or as the work progresses, in order to determine which individual party will conduct the topography or the marking of the boundary.<sup>98</sup>

Ascertaining the precise location of the initial point of the international boundary with Mexico, near the Pacific Ocean and south of the Port of San Diego, was probably the most crucial and strategic determination to be made by the U.S. Commissioner. In his written instructions to Trist, Secretary Buchanan wrote:

The extension of our boundaries over New Mexico and Upper California for a sum not exceeding twenty millions of dollars, is to be considered a sine qua non of any Treaty. You may modify, change or omit the other terms of the Projet, if needful, but not so as to interfere with this ultimatum.<sup>99</sup>

Even before the formal declaration of war against Mexico, it appears that the United States was interested in deposing Mexico of New Mexico, Upper California, and Lower California in order to secure a favorable railroad route to the Pacific. However, a boundary treaty with Mexico giving the United States the certainty of acquiring these territories after what was expected to be a successful military campaign was not going to be easily accomplished unless the United States was able to technically ascertain the precise geographical location of a number of strategic points along the new contemplated boundary, such as the location of San Diego and its port, the limit between Upper and Lower California, the confluence of the rivers Colorado and Gila, the configuration of the Valley of the Gila and La Mesilla, the southern boundary of New Mexico, and the location of Paso del Norte.

As seen earlier, both the maps and the narratives regarding these territories were rather controversial and inaccurate, and as a consequence unreliable, including the Disturnell Map. Furthermore, negotiating with Mexico a new boundary treaty based on inaccurate geographical information involving key points would have been counterproductive because, as proven a few years later with La Mesilla, this would have led to boundary controversies and increasing border problems. To avoid this problem, the United States commissioned William Hemsley Emory of the Topographical Engineers, and later the Major General of Volunteers, to conduct a military reconnaissance from Missouri to San Diego, California, in 1846-47, with the advanced

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98. EMORY JOURNAL, *supra* note 83, at 57-58.

99. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 263-64. Under Article 11 of the Treaty of Guadalupe Hidalgo, the United States paid Mexico, "in consideration of the extension acquired by the boundaries of the United States, as defined in the fifth article of the present Treaty . . . the sum of fifteen millions of dollars." *Id.* at 222; see also *supra* note 82 and accompanying text.



guard of the "Army of the West."<sup>100</sup> In his descriptive and technical notes, Maj. Emory provided "numerous, careful and well-digested astronomical observations," jointly with a number of maps, and annexes with geographical positions, astronomical observations and scientific data.<sup>101</sup>

In his notes, Emory provides sound technical information regarding each of the key places in New Mexico and Upper California mentioned above. Critical importance is the fact that Emory paid special attention to ascertain the precise locations of San Diego, the mouth of the Gila River, and the Colorado River, in late November and early December of 1846.<sup>102</sup> Commenting on the then modest town of San Diego, Emory wrote:

The town consists of a few adobe houses, two or three of which only have plank floors. It is situated at the foot of a high hill on a sand flat, two miles wide, reaching from the head of San Diego bay to False Bay. A high promontory of nearly the same width, runs into the sea four or five miles and is connected by the flat with the main land. The road to the hide houses leads eastward to this promontory, and abreast of them the frigate Congress and the sloop Portsmouth are at anchor. The hide houses are a collection of store houses where the hides of cattle are packed before being shipped; this article forming the only trade of the little town.<sup>103</sup>

The Bay of San Diego is described in these terms:

The bay is a narrow arm of the sea indenting the land some four or five miles, easily defended, and having twenty feet of water at the lowest tide. The rise is said to be five feet, making the greatest water twenty five feet . . . At present San Diego is, all things considered, perhaps one of the best harbors on the coast from Callao to Puget's Sound, with a single exception, that of San Francisco. In the opinion of some intelligent navy officers, it is preferable even to this. The harbor of San Francisco has more water, but that of San Diego has a more uniform climate, better anchorage, and perfect security from winds in any direction. However, the commercial metropolis must be at San Francisco . . . unless indeed it should be made the terminus of a railroad leading by the rout of the Gila to the Del Norte, and thence to the Mississippi and the Atlantic.<sup>104</sup>

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100. WILLIAM H. EMORY, NOTES OF A MILITARY RECONNOISSANCE, FROM FORT LEAVENWORTH, IN MISSOURI, TO SAN DIEGO, CALIFORNIA, INCLUDING PARTS OF ARKANSAS, DEL NORTE, AND GILA RIVERS, Senate Executive Doc. No. 7, 30th Congress, 1st Sess. (1848) [hereinafter NOTES]. Recently, a reprinting of these Notes was published under the title: LIEUTENANT EMORY REPORTS with an Introduction by Ross Calvin.

101. *Id.*

102. See *infra* Appendix No. 5. Between December 15-21, 1846, the mean observations of the determination of latitude of San Diego were: 32° 45' 34"; 32° 44' 12"; 32° 43' 34"; 32° 45' 38"; 32° 44' 24"; and 32° 44' 39"

103. NOTES, *supra* note 100, at 113.

104. *Id.* Emory added that his work

as topographical engineer may be considered to end at this place; and that portion of the map embraced between San Diego and the Pueblo or Ciudad de Los Angeles is compiled from existing maps, with slight alterations made by myself from a view of the ground, without the aid of instruments. The coast is taken from old

Thanks to the technical data gathered as a result of Emory's military expedition, the U.S. government had access to invaluable, accurate and timely geographical information far superior to any other available at that time. Therefore, it is not unexpected that this wealth of technical data was immediately utilized to feed the policy makers in Washington, D.C., including those at the State Department, to design a sound and technically backed new boundary with Mexico. The influence that Maj. Emory's work exercised on the White House, and especially on the State Department, becomes quite evident when one reads the "important modifications" to the suggested international boundary Secretary Buchanan made based on Emory's observations.<sup>105</sup> Thus, in Instruction No. 4 Buchanan indicated that while Emory was in California, he

accurately ascertained the latitude of two important points in that country [Mexico]. The latitude of the town of San Diego is 32°, 44', 59." The harbor is some miles south of the town. The latitude of the mouth of the Gila where it empties into the Colorado, is 32°, 43'.<sup>106</sup>

### C. *The Commission Officially Ascertains the Initial Point on October 10, 1849*

Three months after the Boundary Commission "agreed to define on the ground the southernmost point of the Port of San Diego," as part of its Working Plan, the brief and laconic minute dated October 10, 1849 simply states that the Joint Commission met on that day<sup>107</sup> and, "after a careful examination of the ground and the surveys made by the respective parties, the initial point of the boundary was finally fixed and determined."<sup>108</sup> Notwithstanding that this initial point represented such an important landmark for the entire structure and delineation of the international boundary, few technical details regarding the topographical aspects of the survey have been published. Based on U.S. printed records, what is known, though, is that

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Spanish charts, published in Madrid in 1825 . . . . The harbor of San Diego has been surveyed by Captain, Sir Edward Belcher, of the royal navy, whose determination of the longitude of the spit to the south of Point Loma, published in his "voyage round the world," has been adopted, in the absence of time or instruments to enable me to make the requisite observations.

*Id.* at 114.

105. See *Instruction No. 3* of July 13, 1847 and *Instruction No. 4*, of July 19, 1847, reprinted in TREATIES, *supra* note 3 at 269-70.

106. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 270; see *supra* text accompanying note 3.

107. EMORY JOURNAL, *supra* note 83, at 58-59. On October 8, 1849 the Joint Commission for the first time met near the furthest southernmost point of the Port of San Diego, for the purpose of determining the initial point in the boundary in the Pacific Ocean. After examining the surveys made by the Surveyors, and hearing the explanations thereof, agreed to adjourn to meet the next day.

108. *Id.* at 59; see also DATOS, *supra* note 92, at 21.

most of the technical work was virtually left in the hands of Surveyor Andrew B. Gray, of the U.S. Section.<sup>109</sup>

Most U.S. historians and other specialists who have expressed their learned opinions on this intriguing but delicate question generally omit any technical discussion regarding the details as to how "the initial point of the boundary near the Pacific Ocean" was finally agreed upon between the U.S. and Mexican parties.<sup>110</sup> Unfortunately, it seems that no Mexican experts have written on this specific topic save, of course, for the technical report produced by the Mexican Surveyor, Ing. Salazar Illarregui.<sup>111</sup>

As indicated earlier, official documents attest to the fact that on October 10, 1849, the Joint Commission finally fixed and determined the initial point of the boundary. A written statement in English and Spanish "was placed in a bottle hermetically sealed and deposited in the ground, upon which a temporary monument to mark the spot was placed, in the presence of many witnesses."<sup>112</sup> This declaration, subscribed by the Commissioners and Surveyors in the presence of two witnesses, stated:

Be it remembered that, the 10<sup>th</sup> day of October, A.D., 1849, the undersigned, Commissioners and Surveyors, duly appointed and commissioned by their respective governments, being satisfied with the results of the survey made, did agree that the demarcation [sic] of boundary between the United States and the Mexican Republic shall commence at this point; all in conformity with the 5th article of the Treaty signed at the City of Guadalupe Hidalgo, on the 2d of February, 1848, the ratifications of which were exchanged on the 30<sup>th</sup> day of May, 1848, at Querétaro, by the respective representatives of each government. This point, according to the article referred to, is situated on the Pacific coast, 'one marine league due south of the southernmost point of the Port of San Diego,' the geographi-

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109. The U.S. Section formulated and printed a map whose title read:

Topographical Sketch of the Southernmost Point of the Port of San Diego, and Measurement of the Marine League for Determining Initial Point of the Boundary between the United States and Mexican Republic [sic] as Surveyed by the United States Commission, John B. Weller, U.S. Commissioner, Andrew B. Gray, U.S. Surveyor. Agreeably to the decision of the Joint Commission of July 9<sup>th</sup> 1849, and in conformity with the 5<sup>th</sup> Article of the Treaty dated at the City of Guadalupe Hidalgo, February 2<sup>nd</sup> 1848. Projected and Drawn by Andrew B. Gray, Civil Engineer, U.S. Surveyor.

See REPORT OF THE SECRETARY OF THE INTERIOR (*with Additional Correspondence relative to the Operations of the Commission for Running and Marking the Boundary between the United States and Mexico*), Senate Executive Document No. 34 (Part II), 31st Congress.

110. See Lesley, *supra* note 85, at 6; see also W.H. Goetzmann, *The United States-Mexican Boundary Survey, 1848-1853*, in SOUTHERN HISTORICAL QUARTERLY 170-71.

111. Salazar Illarregui produced a topographical map paralleling the sketch made by the U.S. Surveyor. See *Plano de la Parte Austral del Puerto de San Diego, y del Terreno comprendido entre dicha parte, el Punto Inicial en la Costa del Pacífico y la Sesta [sic] Estación hecha en la Dirección de la Línea que divide las Repúblicas de México y de los Estados Unidos, 1850*, in DATOS, *supra* note 92, at 123.

112. EMORY REPORT, *supra* note 78, at 59.

cal position of which shall be entered upon the journal of the Joint Commission.<sup>113</sup>

As a result of these technical surveys, it was also ascertained that the initial point of the boundary thus solemnly agreed upon was in North latitude 32° 31' 59". 58 and the longitude thereof 7 h. 48 min. 21.10 west of Greenwich,<sup>114</sup> as determined by Maj. Emory, on the part of the United States, and Ing. Salazar Illarregui, on the part of Mexico. In his technical report, Ing. Salazar Illarregui indicates that the technical work associated with the initial point of the boundary on the Pacific Ocean was initiated on August 28, and completed by October 13, 1849.<sup>115</sup> In his note, Gray described the location of the Initial point in these terms:

The initial point . . . falls upon the sand beach within a hundred meters of a plain triangularly shaped and elevated by a bluff bank about 50 feet above the level of the sea. It is also backed by a mountainous spur which puts out from the great chain reaching from Upper to Lower California, and is an excellent natural position for a monument to fix the limit of the two countries.<sup>116</sup>

*1. An Apparent Technical Difference of 3500 feet Between the U.S. and the Mexican Surveyors Regarding the Location of the "Southernmost Point of the Port of San Diego"*

In the explanatory notes that Gray wrote to Commissioner Weller regarding the demarcation of the boundary's "initial point,"<sup>117</sup> the U.S. Surveyor refers to a discrepancy that arose with the Mexican Surveyor, Ing. Salazar Illarregui, concerning the marking of "the southernmost point of the Port of San Diego," according to the Pantoja Map. As may be recalled, the precise location of this point was of the utmost importance for the United States and Mexico because, as mandated by Article 5 of the Treaty of Guadalupe Hidalgo, as soon as this point was to be technically "fixed," i.e., mutually agreed by the Joint Commission, this "southernmost point" was to be utilized to measure the distance of one marine league due south, at the end of which the boundary between both countries had to be established. In his 1849 note, the U.S. Surveyor wrote:

113. *Id.* at 59.

114. *See id.* The respective minute, dated Wednesday, October 10, 1849, was signed by Pedro García Conde and John B. Weller. To Attest: H.H. Robinson and F.M. De Cherero (*sic*, Chavero) Secretaries. *See DATOS supra* note 92, at 22.

115. *DATOS, supra* note 92, at 23.

116. *EMORY REPORT, supra* note 78, at 30.

117. This note was dated at San Diego, California on October 4, 1849. *See REPORT OF THE SECRETARY OF THE INTERIOR (in Answer to a Resolution of the Senate calling for information in relation to the Operations of the Commission appointed to run and mark the Boundary between the United States and Mexico)*, Senate Executive Document No. 34 (Part I). 31st Congress, 1st Sess., at 29-30. [hereinafter cited as *REPORT (PART I)*].

The sketch which accompanies this note will show you the position of the initial point of boundary between our country and that of the Mexican republic, as fixed by the survey of the southern part of the port of San Diego, and measurement of the marine league . . . . It will also show approximately the direction that the line will take over the ridge of highlands which come down to the Pacific . . . . I had advised the surveyor on the part of Mexico of my having completed the surveys necessary for me to determine the southernmost point of the port, as called for in the treaty; and a few days after your departure to San Francisco we exhibited to each other small plans of our triangulations, which agreed without any difference. *But the changes from local causes by time, &c., which have taken place in that portion of the port, and the peculiar features which it now presents, caused Mr. Salazar to think the southernmost point to be further to the north that I had believed was represented on the map accompanying the treaty.* A difference in the season of the year, which possibly may have been the case, in which the two surveys were made, (that of 1782 and that of our own), might also make a difference in its appearance.<sup>118</sup>

The difference between the point mutually agreed by both the U.S. and Mexican Surveyors, as reported by Gray in his note, and the point which was first noted by Salazar, was some 3500 feet (some 1,066.8 meters). This would have placed the international boundary some 3500 feet due north of its current location.

Although initially there might have been some discrepancy between Gray and Salazar, in his note, the U.S. Surveyor explains that Salazar decided “to make a few more measurements” to ascertain the proper location of that important geographical point. After these additional works were made, Salazar advised Gray “of his being induced to believe that the line of coast on the treaty map was the same very nearly with the highland or line of bluffs” mentioned by Gray in his explanatory note.<sup>119</sup> In a November 3, 1849 letter that U.S. Commissioner Weller sent to the Secretary of State Clayton from San Diego, Weller wrote:

In consequence of some changes which have evidently taken place in the southern part of the port of San Diego, since the survey of Don Juan Pantoja of 1782, it became necessary to make an accurate survey of that part of the harbor. This was executed by the Surveyors on each side since. A difference of a few feet was found to exist between the representatives of the two governments as to the precise point which ought to be regarded as “the southernmost point of the port of San Diego. This, however, was soon adjusted, in the spirit of compromise, by the commissioners on the ground, and a point selected from which “a marine league due south” was meas-

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118. *Id.* at 29 (emphasis added).

119. According to Gray, the initial point:

falls upon the sand beach within a hundred meters of a plain triangularly shaped and elevated by a bluff bank about 50 feet above the level of the sea. It is also backed by a mountainous spur which puts out from the great chain reaching from Upper to Lower California, and is an excellent natural position for a monument to fix the limit of the two countries.

*Id.* at 30.

ured. At the place thus selected as the initial point, a temporary monument has been erected, until suitable materials for the construction of a permanent one can be obtained. The monument will be placed one hundred feet from the ocean, and a point of land forty-two feet above the level of the sea. Its precise latitude, as agreed upon, is  $32^{\circ} 31' 59''$ .<sup>120</sup>58, which will make it about eighteen miles south of this town.<sup>120</sup>

Furthermore, in his technical book Ing. Salazar Illarregui recognizes that as a result of his agreement with U.S. Surveyor Gray regarding the final location of the initial point, Mexico gained an advantage of 168 meters. He wrote:

This [initial] point, whose geographical position will be included in the Commission's Diary, is situated one marine league due south. Having placed the beginning of the line on the coast of the Pacific Ocean not only at 168 meters due south from D', but 21.6 meters to the east, it results that [the initial point's] field was placed at 5731 meters to the south and 3245.56 [meters] to the west. From this it can be deduced that the southernmost point (*el punto más austral*) was determined in accordance with the Treaty of Guadalupe Hidalgo, and that under this concept the initial [point] favored Mexico in the amount of 168 meters.<sup>121</sup>

## 2. Was a Parallel Used to Measure the "Marine league" Due South to Establish the Initial Point of the Boundary?

Nowhere in Article 5 of the Treaty of Guadalupe Hidalgo a reference is made to any "parallel" to be used as the reference point to establish the initial point on the coast of the Pacific Ocean, "distant one marine league due south to the southernmost point of the Port of San Diego."<sup>122</sup> However, in his note, Gray expressly acknowledges that a parallel<sup>123</sup> was indeed used by the U.S. and Mexican Surveyors to commence the measurement of the marine league which "was that of the highest point at which indications were noticed of the overflow of salt water, or the water of the port."<sup>124</sup> As part of his topographical sketch, Gray included a map which clearly depicts a line labeled "Parallel of the Southernmost Point of Port."<sup>125</sup> From this point, the corresponding marine league was then measured running south to the "initial point," located along the coast of the Pacific Ocean. It should be noted that the placement of this parallel does not by any means coincide with the low-

120. *Id.* at 31-32.

121. DATOS, *supra* note 92, at 21-22.

122. For the text of this portion of Article 5 of the Treaty, see *supra* note 6 and accompanying text.

123. A parallel is any of the imaginary lines parallel to the equator and representing degrees of latitude on the earth's surface. See WEBSTER'S NEW TWENTIETH CENTURY DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED 1299 (2nd ed. 1983) [hereinafter WEBSTER'S DICTIONARY].

124. EMORY JOURNAL, *supra* note 83, at 29-30.

125. For the reference to the Topographical Sketch, see *supra* note 100 and accompanying text.

est point of coastline of the southern part of the Bay of San Diego, which may initially appear to be a logical or reasonable interpretation of the language of Article 5 of the Treaty. Instead, this parallel is depicted in Gray's Topographical Sketch a couple of miles due south from the bottom of the Bay of San Diego.

It must be clarified (especially to those unfamiliar with topographical surveys and works) that when measuring a given territory or a piece of land, surveyors and topographers commonly rely on the establishment of "parallels" which are drawn or marked in convenient places in order to obtain more precise or accurate measurements. This is precisely what took place in the process of measuring the marine league necessary for establishing the initial point of the boundary on the Pacific Ocean. Moreover, in his topographical work, the Mexican Surveyor not only utilized Mr. Gray's "parallel," but acknowledged the necessity of using at least "two parallels" to measure the marine league's extension.<sup>126</sup>

When the Guadalupe Hidalgo Treaty was being negotiated there were some concerns in Washington on how Mexico was going to react when deprived of the Port of San Diego. As may be recalled, Secretary Buchanan made clear in his instructions to Trist that the inclusion of Upper California—with the Port of San Diego—was a *sine qua non* condition for the signing of the treaty.<sup>127</sup> The concerns arose because by losing Upper California, Mexico was going to be deprived from the best two ports bordering the Pacific Ocean: San Francisco and San Diego.

It should also be recalled that during the Treaty negotiations, Trist vacillated several times between acknowledging the assumption that the Port of San Diego—as he finally did—formed an integral part of Upper California. These vacillations were so evident that Trist even suggested that the limit between the two Californias should be placed north of the Port of San Diego. Two days later, Trist again changed his mind and then proposed that this port should be divided between the United States and Mexico.<sup>128</sup>

It seems that in order to leave no doubts that the Port of San Diego was going to be "ceded" by Mexico to the United States, as provided by the Treaty, and that the Plenipotentiaries had finally reached a definite understanding as to the once controversial location of the limit between Upper and Lower California, Trist took the initiative to not only annex the Pantoja Map as one of the four papers which formed the Treaty, but to also draw in red ink the line which marked the international boundary that separated Upper

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126. DATOS, *supra* note 92, at 19. Ing. Salazar Illarregui writes: "[P]ues como se ve en el plano, fue preciso para completar la extensión de la legua sacar dos paralelos y seguir midiendo en la misma dirección Norte-Sur . . ." *Id.* Also relevant are Ing. Salazar's technical entries on September 13 and September 28 (*Datos de los Trabajos del Primer Campo*). *Id.* at 72, 85.

127. See *supra* notes 38 and 91 and accompanying text.

128. See *supra* notes 38-44 and accompanying text.

from Lower California.<sup>129</sup> Thus, placing this boundary approximately “one marine league due south of the southernmost point of the Port of San Diego,” i.e., some three and a half nautical miles from the lowest coastline of the San Diego Bay, and then securing the signatures of all the plenipotentiaries involved.

### 3. What is the Length of a “Marine league”?

Finally, reference should be made to the apparent dilemma that the U.S. and Mexican Surveyors had to confront when they were forced to determine what was the length of a “marine league,” as mandated by Article V of the 1848 Treaty. According to the U.S. Surveyor Gray, “every degree of accuracy was pursued in the marine league measurement.”<sup>130</sup> However, it seems that the definition of this length necessitated both Surveyors to agree that it was 5,564.6 meters, according to the authority of “Francoeur.”<sup>131</sup> Today, common dictionaries report that one marine league (*Una legua marina*) equals three nautical miles, equivalent to 3.45 statute miles or 5.556 kilometers.<sup>132</sup> In other words, the distance agreed by both Surveyors benefitted the United States with 8.60 meters.

When one multiplies this distance (8.60 meters) by 148 miles, which is the length of the straight line between the initial point of the boundary in the Pacific Ocean and the juncture of the rivers Gila and Colorado, which marks the eastern terminus of this boundary, the resulting triangular territorial difference in favor of the United States is of over one thousand square kilometers.

### 4. Monument at the Initial Point on the Pacific Ocean

On January 30, 1850 the Joint Commission agreed to place a monument at the initial point on the Pacific Ocean.<sup>133</sup> This historic monument, which was made of white marble in the shape of a nine-foot obelisk, contained the following inscription on the side fronting the Pacific: “Initial point of boundary between the United States and Mexico, established by the Joint Commission, October, 10, A. D. 1849, agreeably to the treaty dated at the city of Guadalupe Hidalgo, February 2, A.D. 1848. John B. Weller, U.S. Commissioner, Andrew B. Gray, U.S. Surveyor.”<sup>134</sup> Recalling that on Octo-

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129. See *supra* notes 13 and 50 and accompanying text.

130. EMORY JOURNAL, *supra* note 83, at 30.

131. *Id.*

132. See WEBSTER'S DICTIONARY, *supra* note 123, at 1198. One nautical mile equals 1.1508 statute miles (the length of a minute of longitude at the equator). It is also equivalent to 6,076.1 feet or 1,852 meters by international agreement reached in 1954. A nautical mile is also called geographical, sea, or air mile, and, in the United Kingdom, Admiralty mile. One marine league equals 3.45 statute miles or 5.56 kilometers. Under the international agreement of 1954, a marine league equals 1852 meters by three or 5556 meters.

133. See EMORY JOURNAL, *supra* note 83, at 63-64.

134. On the same side the same inscription in Spanish, substituting the names of— Pedro



ber 10, 1849,<sup>135</sup> when the Joint Commission agreed on the determination of the initial point, a written statement in English and Spanish was placed in a bottle hermetically sealed and deposited in the ground and signed by the Commissioners and Surveyors in the presence of two witnesses.<sup>136</sup>

5. *The Eastern Terminus of the California Boundary: The Confluence of the Rivers Gila and Colorado*

As provided by Article 5 of the Treaty of Guadalupe Hidalgo, the eastern limit separating Upper from Lower California "shall consist of a straight line, drawn from the middle of the Rio Gila, where it unites with the Colorado."<sup>137</sup> As soon as the Joint Commission completed its work to determine the initial point of the boundary on the Pacific Ocean it moved immediately, according to its Working Plan, "to define on the ground . . . the two extreme points of the straight line between the Pacific and the junction of the rivers Gila and Colorado, including their respective latitude and longitude."<sup>138</sup>

On October 12, 1849, U.S. Commissioner Weller ordered Surveyor Gray to go to the Gila River "to examine the point at which that river empties into the Colorado."<sup>139</sup> Lt. A. W. Whipple, of the Corps of Topographical Engineers, assisted by Messrs. Parry and Ingham, were assigned to this task.<sup>140</sup> According to Lt. Emory—who was attached to the Commission as Chief astronomer and Commander of the escort of the U.S. troops—the whole distance of this straight line, some 148 miles in length and presenting obstacles almost insurmountable, could be divided into two equal parts "differing in character, but both unfavorable to geodetic operations":<sup>141</sup>

The first, rising in steppes from the sea, devoid of water, and covered with spinous vegetation, attains in abrupt ascents the height of five or six thousand feet above the sea in the short distance of thirty miles. From this point, for about thirty miles more, the country is occupied by a succession of parallel ridges, striking the boundary nearly at right-angles, and separated by deep and sometimes impassable chasms. The remainder of the line stretches across the desert of shifting sand at the head of the Gulf of

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García Conde, *Mexican Commissioner*, José Salazar Ilarequi (*sic*), *Mexican Surveyor*. *Id.* at 63.

135. See *supra* note 108 and accompanying text.

136. For Ing. Salazar's narrative of this ceremony, see DATOS, *supra* note 92, at 21.

137. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 214; see also TRATADOS Y CONVENCIONES, *supra* note 3, at 9 ("Y para evitar toda dificultad al trazar sobre la tierra el límite que separa la Alta de la Baja California, queda convenido que dicho límite consistirá en una línea recta, tirada desde la mitad del Río Gila en el punto donde se une con el Colorado . . .").

138. See *supra* note 97 and accompanying text.

139. REPORT (PART I), *supra* note 117, at 32; see also Lesley, *supra* note 85, at 10.

140. See EMORY REPORT, *supra* note 78, at 4 (Personal Account).

141. *Id.*

California, destitute for the most part of water and vegetation, rendering it impossible to mark the boundary in the usual manner on the ground.<sup>142</sup>

When the Treaty was being negotiated, the Plenipotentiaries assumed that once the Gila joined the Colorado, the Colorado would run south to empty its waters into the Gulf of California. In other words, they had little or no idea that the Colorado, at that time, had a very pronounced winding course. As a result of his topographical work, U.S. Surveyor Gray—based on the notes and technical work conducted by his assistant, Mr. Forster, aided by Lt. Whipple—encountered two unanticipated peculiarities with these two rivers: (1) That the Colorado River, after the Gila empties its waters into it, first flows in a northwesterly direction for several miles and then proceeds to move due south. Accordingly, if a straight line is drawn in exact compliance with the language of Article 5 of the Guadalupe Hidalgo Treaty, this line would not strike the Colorado until several miles from the confluence of the two rivers. The end consequence of this peculiarity was that the United States was able to gain some “three leagues of land” on the left bank of the Colorado River. In other words, along these three leagues, both banks of the Colorado River run north of the international boundary, thus placing the entire river within the territory of the United States; and, (2) Given the peculiar manner in which the Gila joins the Colorado, uniting the Colorado from the south and thus pushing the Colorado waters forcing them to flow into a northwesterly direction, it becomes quite difficult even for a trained observer to technically determine with accuracy the exact point marking “the middle of the Gila River where it unites with the Colorado.”<sup>143</sup>

The technical problems associated with the confluence of these two rivers, the Colorado and the Gila, which were gradually shifting their physical point of interaction given their peculiar juncture, motivated the U.S. Surveyor to send Commissioner Weller “a sketch or plan of the junction of the Rio Gila, where it unites the Colorado.”<sup>144</sup> (See MAP NO. 3: Plan of the Junction of the Colorado and Gila Rivers). This sketch was based on the technical surveys and other field observations conducted by Lt. Whipple, who had already produced a map,<sup>145</sup> which actually served as the basis for the official sketch later drawn by Gray.

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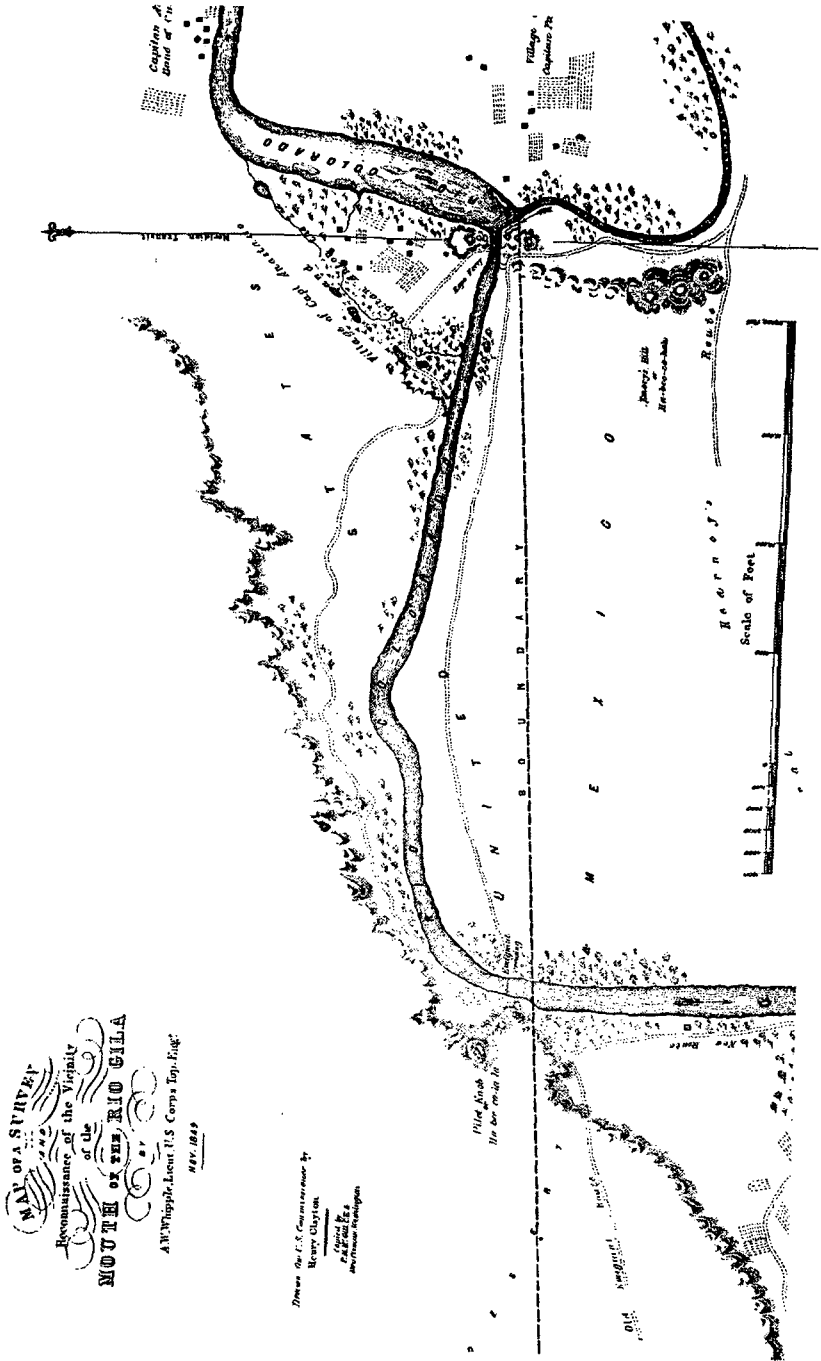
142. *Id.*

143. EMORY REPORT, *supra* note 78, at 6.

144. REPORT (PART I), *supra* note 117, at 32-33.

145. The plan compiled by Lt. Whipple to illustrate agreement with Ing. Salazar appears as an Annex to REPORT (PART I), *supra* note 117.

MAP NO. 3: THE GILA MAP



In his observations, U.S. Surveyor Gray explained:

The land on the west side of the Gila at B is constantly wearing away by the action of the currents, being low and soft; consequently, the position of that point changes, as also the configuration of the mouth of the Gila; and that the point D may very shortly be (if not now considered) the end of the southern bank of that river. The middle, therefore, today, may not be the same yesterday. The waters, after mingling, converge and break through a dyke of feltzspatic rock about 700 feet across; and if it is decided that the point of the middle of the river Gila unites with the Colorado is at A, the line of boundary in its course from the Pacific will probably fall to the southward of the bluffs, and thus include in our territory both sides of the Colorado, at the present emigrating crossing. These elevated heights may be considered important, not only in a civil but military point of view.<sup>146</sup>

To resolve these matters, Lt. Emory, who at that time was in charge of the U.S. Commission because Weller was ill, wrote a letter to Lt. Whipple, suggesting to him that the U.S. Commissioner would be "glad if Whipple would agree with Mr. Salazar on the point where the Gila empties the Colorado, and make an accurate survey of the same, and also of the boundary line from that point to where it crosses the Colorado."<sup>147</sup> Ing. Salazar Illarregui gave his immediate consent and started his joint work with Lt. Whipple on November 30, 1849. Lt. Whipple reports:

We examined the junction of the two rivers, and the plot I had made, and he [Ing. Salazar Illarregui] agreed with me that the point I had selected was that defined by the treaty. It was also decided that the stone pillar I had erected upon which to measure the azimuth should be considered a monument upon the boundary line. This agreement was written, examined by General Conde, the Mexican Commissioner, translated into Spanish by Mr. Iturbide, the Mexican interpreter, and signed by Mr. Salazar and myself.<sup>148</sup>

In his technical report, Ing. Salazar Illarregui notes that it was unnecessary for the Mexican team "to conduct any measurement or survey to determine the point where the middle of the Gila River joins the Colorado,"<sup>149</sup> because the required technical work was done by Lt. Whipple. However, the Mexican team conducted some technical work and determined that the land gained by the United States in the left bank of the Colorado River amounted to 0.533,916 square mile.<sup>150</sup>

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146. *Id.* at 32-33 (Gray's letter to Commissioner Weller dated at San Diego, November 14, 1849).

147. *Id.* at 33. The communication, which was reproduced by Lt. Whipple to Ing. Salazar, is dated at the Mouth of the Gila on November 29, 1849.

148. *Id.* at 33-34 (emphasis added) (Letter from Lt. Whipple to Maj. Emory, December 15, 1849).

149. *DATOS*, *supra* note 92, at 27.

150. *Id.* at 28. In his map, titled: *Plano de la Confluencia de los Ríos Gila y Colorado, 1850*, Ing. Salazar Illarregui asserted that "the middle of the Gila River where it unites the

The agreement between Lt. Whipple and Ing. Salazar Illarregui was dated at the Mouth of the Rio Gila on November 30, 1849, and its text is reproduced in the Report to the Secretary of the Interior (*Senate Executive Document, No. 34, Part I*).<sup>151</sup> U.S. Commissioner Weller transmitted from San Diego on January 3, 1850, the pertinent documentation, including maps, to Secretary of State John M. Clayton.<sup>152</sup>

At the next meeting of the Joint Commission, held on Monday, January 28, 1850, the Commission agreed that:

(1) The point marking "middle of the River Gila, where it unites with the Colorado," could not be fixed on the right bank of the Colorado because that river, after its junction with the Gila, "flows nearly in a northwest direction." It was then agreed that the geographical position of that precise point is that of 32° 43' 32", and 7 hours 38 minutes west of Greenwich meridian.<sup>153</sup>

(2) An agreement was also reached regarding the results of the calculations made by the respective parties for the determination of the azimuth of this point, as well as the azimuth of the line starting from the initial point on the Pacific.<sup>154</sup>

(3) It was further agreed that the international boundary line between Upper and Lower California "is now fixed and determined," and all that was necessary to complete that portion of the boundary in accordance with the Treaty of Guadalupe Hidalgo, was to place "suitable monuments at the two extremes of the line, and such intermediate monuments as may be agreed upon."<sup>155</sup>

According to Maj. Emory, the length of the azimuth boundary line between the monument at the initial point on the Pacific coast and the junction of the Gila and Colorado Rivers is 148.689 miles.<sup>156</sup>

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Colorado" is located at 32° 43' 32" 30 North latitude and 32° 38' 11" 44 West longitude of Greenwich and that the monument was placed at 32° 33' 31" 58 North latitude and 7h 38' 12" 27 West longitude of Greenwich.

151. REPORT (PART I), *supra* note 117, at 37-38. For a Mexican technical narrative on this point, see DATOS, *supra* note 92, at 27-34.

152. See REPORT (PART I), *supra* note 117, at 38-39.

153. EMORY JOURNAL, *supra* note 83, at 60.

154. *Id.*

[T]he geographical position of the point of land selected from which the azimuth of the [straight] line takes its departure, is 32° 43' 31".58 north latitude, and in longitude 7 h. 38 min. 12 sec. 21 west of the meridian of Greenwich." The results of these calculations were considered to be "fixed and definite, and will resolve any difficulty, if, through any unforeseen cause, the mounds and monuments between the two extremes of the line should be moved or displaced.

*Id.*

155. *Id.* The minute was signed by John B. Weller and Pedro García Conde.

156. See TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 415 n.1; see also Ing. Salazar Illarregui's Map of the Confluence of the Rivers (*Plano de la Confluencia de los Ríos Gila y Colorado*); DATOS, *supra* note 92, at

The meeting of the Joint Commission of January 30, 1850 was principally devoted to agreeing on the number, location, and type of monuments to be placed on the international line in order to mark the boundaries between the two countries.<sup>157</sup> On February 15, 1850, it was determined that, "as nothing remains to be done except that which has already been provided for," the Joint Commission adjourned to meet at El Paso,<sup>158</sup> in the state of Chihuahua, on the first Monday of November of 1850. The future technical work of the Joint Commission was to establish and monument the international boundary from Ciudad Juárez, Chihuahua, to the mouth of the Rio Grande, in the Gulf of Mexico.<sup>159</sup>

### III. POWERS GIVEN TO THE BOUNDARY COMMISSIONERS BY THE TREATY OF GUADALUPE HIDALGO

Undoubtedly, Article 5 of the Treaty of Guadalupe Hidalgo was the Treaty's central and most important article. First, it enunciated the newly established territorial boundaries between the United States and the Republic of Mexico, as the result of the tragic and unfair war between these two countries.<sup>160</sup> In his message to Congress to report on the end of the war of conquest against Mexico, President Polk estimated that the newly acquired territories totaled over 851,598 square miles,<sup>161</sup> more than half of the Republic of

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56-57. The U.S. and Geodetic Survey "recomputed" the distance in 1936, according to the North American datum of 1927, to be 146.994 miles.

157. The Joint Commission decided to erect seven monuments at these places: (1) At the initial point on the Pacific; (2) On the spot of land agreed upon near the mouth of the Gila River; (3) On the left bank of the Colorado, where the line crosses that river; (4) In the desert, as near as practicable where the line crosses the New River (*Río Nuevo*); and three other monuments "at such point on the intervening mountains as may be most visible and of greatest interest." EMORY JOURNAL, *supra* note 83, at 62. Cap. E.L.F. Hardcastle and Francisco Jiménez were the engineers appointed to erect these monuments. *See id.* at 64.

158. Actually, today's name of this town is Ciudad Juárez, Chihuahua, Mexico. Its original name was El Paso del Río Grande del Norte (abbreviated as "Paso del Norte"), a geographical pass over the Great River of the North, discovered by the Spanish explorer Alvar Nuño Cabeza de Vaca in 1536. The village of Paso del Norte was established by Fray García de San Francisco on December 8, 1659. In memory of President Benito Juárez, who arrived in his first visit at Paso del Norte fleeing from the imperial forces of Maximilian in early August of 1865, the name of this town was changed to "Juárez," as it stands today. At that time the U.S. town across the Rio Grande was known as "Franklin," adopting the name of "El Paso," when this Mexican town changed its name to Juárez. *See* CHÁVEZ M, *supra* note 74, at 75, 247.

159. For a technical description of the establishment of this portion of the international boundary, see EMORY REPORT, *supra* note 78 (Vols. 1-2) *passim*.

160. For a lucid and well-documented account of the intrigues and political maneuvering that led President Polk to initiate a war of annexation and conquest against Mexico, see GLENN W. PRICE, *ORIGINS WITH THE WAR WITH MEXICO: THE POLK-STOCKTON INTRIGUE* (1967).

161. *See* President James K. Polk's Fourth Annual Message of December 5, 1848, in A COMPILATION OF THE MESSAGES AND PAPERS OF THE PRESIDENTS 1798-1908, at 2483, 2484 (James D. Richardson ed.).

Mexico's territory.<sup>162</sup> Luis G. Zorrilla, a diplomat and historian who has studied in detail the relations between both countries, characterizes this Treaty, "imposed to Mexico, as one of the harshest in modern history, if the World War II [treaties] are excepted, given the enormous extension of territory which was taken away from Mexico."<sup>163</sup>

As provided by Article 12 of the same Treaty, "in consideration of the extension acquired by the boundaries by the United States . . . the government of the United States engages to pay to that of the Republic of Mexico the sum of fifteen millions of dollars."<sup>164</sup> According to Zorrilla, the territories lost by Mexico totaled approximately two million hectares. Therefore, based upon the Treaty, the price of an individual hectare of Mexican land acquired by the United States was less than ten cents of a U.S. dollar. Zorrilla points out that the government of the United States, one generation prior to the Treaty of 1848, "used to sell the lands which it had obtained from the Indians at no less than \$1.25 per acre, which is close to \$3.00 U.S. dollars per hectare."<sup>165</sup> Based on this calculation, the sum that the United States should have paid Mexico was in the order of over half a billion dollars!<sup>166</sup>

Second, Article 5 incorporated in its language not only the provision that the governments of the two parties were to each appoint "a Commissioner and a Surveyor"<sup>167</sup> to run and mark the newly negotiated international boundary, but, more importantly, that these boundary officials "should keep journals and make out plans of their operations" and that "the result agreed upon by them," (i.e., any agreement concerning the establishment and demarcation of said boundary):

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162. See LUIS G. ZORRILLA, *HISTORIA DE LAS RELACIONES ENTRE MÉXICO Y LOS ESTADOS UNIDOS DE AMÉRICA, 1800-1958*, at 227 (1977).

163. *Id.* Zorrilla concludes:

Money does not change the facts and, in the best of cases, it involves a purchase imposed by force in which the buyer chooses the merchandise and imposes the price. If the arguments advanced by Washington to charge Mexico with the responsibility of what had happened had been just, [the U.S.] would not had offered any compensation, but in the form that the problem was resolved, the [U.S.] conscience felt at peace (*quedó tranquilizada su conciencia*), for if in reality (*si en el fondo*) a trampling (*un atropello*) had been committed, it was going to be repaired with the delivery of the money.

*Id.*

164. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 222.; TRATADOS Y CONVENCIONES, *supra* note 3, at 13. The Spanish text reads: "la suma de quince millones de pesos." *Id.* In early 1848, when the Treaty was signed, Mexican pesos and U.S. dollars had identical monetary value.

165. One acre equals 0.405 acre per hectare, or 2.471 acres per hectare. See Zorrilla, *supra* note 162, at 226.

166. 851,598 square miles = 545,022.720 acres to be then multiplied by \$1.25 U.S. dollars: \$681,278,400 dollars.

167. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 215; TRATADOS Y CONVENCIONES, *supra* note 3, at 9.

shall be deemed a part of this Treaty, and shall have the same force as if it were inserted therein . . . . The Boundary line established by this Article shall be religiously respected by each of the two Republics, and no change shall ever be made therein, except by the express and free consent of both nations, lawfully given by the General Government of each, in conformity with it's [sic] own Constitution.<sup>168</sup>

As it may be recalled, this language neither appear in the instructions given to Trist nor in the text of the U.S. draft treaty.<sup>169</sup> Rather, this specific paragraph was included in the Mexican draft treaty (*Projet*) which was delivered to Trist on January 9, 1848.<sup>170</sup>

According to the rationale (*Exposición de Motivos*) advanced by the Mexican Commissioners who negotiated the Treaty, this type of language—which in their opinion agreed in the establishment of a “Scientific Commission”—was considered to be “a measure which has always been stipulated upon in treaties of the same nature as the present.”<sup>171</sup> The Mexican plenipotentiaries expressly acknowledged that the substance of this paragraph was taken almost verbatim from these two treaties: (a) the Treaty of Friendship, Limits and Navigation between Spain and the United States,<sup>172</sup> signed at San Lorenzo el Real on October 27, 1795; and, (b) the Treaty of Amity, Settlement and Limits between Spain and the United States,<sup>173</sup> signed at Washington on February 22, 1819.

It seems that this kind of empowering treaty language was commonly utilized in boundary agreements in the fifteenth and sixteenth centuries when the territories to be delimited or demarcated between contending parties were not well-known, from technical or geographical viewpoints. The territories in question in those days mainly consisted of vast extensions of land virtually unexplored, with only vague or ambiguous descriptions on their to-

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168. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 215; TRATADOS Y CONVENCIONES, *supra* note 3, at 9. The Spanish text reads:

*y el resultado convenido por ellos se tendrá por parte de este Tratado, y tendrá la misma fuerza que si estuviese inserto en él; . . . . La línea divisoria que se establece por este Artículo será religiosamente respetada por cada una de las dos Repúblicas, y ninguna variación se hará jamás en ella, sino de expreso y libre consentimiento de ambas naciones, otorgado legalmente por el Gobierno General de cada una de ellas, con arreglo a su propia Constitución*

TRATADOS Y CONVENCIONES, *supra* note 3, at 9 (emphasis added).

169. See TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 260-67, 269-72.

170. *Id.* at 325. The original Mexican *Projet* proposed the appointment of a Commissioner (*Comisario*) and a Geometer (*Geómetra*). They were supposed to meet at the Punta de Arena at the Pacific coast (later on changed to San Diego) and then “proceed to notify (later changed “to run” in the final text) and to mark the said boundary along its entire course to the mouth of the Río Bravo del Norte.” *Id.*

171. VÁZQUEZ, *supra* note 47, at 161.

172. See THE CONSOLIDATED TREATY SERIES 1795-1797, at 12, 14 (arts. 2, 3) (Clive Perry ed.).

173. See *id.* at 4-6 (arts. 3, 4).



pography and resources, in most cases formulated under the influence of myths or legends. Because the true physical features of these lands were only vaguely known (and, in some instances, even completely unknown), the interested parties made use of the mechanism of appointing joint scientific, technical, or boundary commissions.

In essence, the role of these technical bodies was threefold: First, to establish the boundary line as described in the treaty. In most cases, the description of the "boundary" consisted of general guidelines or suppositions which were more the product of the national interest of the individual countries involved rather than a precise enunciation of the international boundary based upon objective and accurate data. The "Boundary Commission" had to rely not only on relative technical expertise but also on quite incisive negotiating skills. All attempts to place the boundary in the location which was to give the most benefits and advantages to each of the countries involved were valid, provided these attempts had some real or perceived relationship with the treaty language.

Second, because the territories to be delimited were relatively unknown, it was almost indispensable to provide each member of the Boundary Commission with ample powers to agree with his counterpart in a true and valid demarcation of the boundary, as dictated by the facts. It should be considered that among the principal obligations imposed on the Boundary Commission was the necessity to factually "run and mark" the boundary.<sup>174</sup> Accordingly, the members of the Commission had to physically conduct a personal survey of the territory where the "boundary" was going to be established.

The most important role each member of the Commission was to perform, working as a "national team," was to interpret the language of the treaty in such a way as to make the words match the physical environment, choosing the placement of the boundary line in the location most beneficial for each team. In other words, power was given to the Commission to actually set and establish the boundary upon the ground, based on the general guidelines contained in the Treaty language. If this language was completely divorced from the true physical environment, or if it advanced a mistaken principle, it was the ultimate duty of the commission—based on the almost absolute and unlimited powers granted upon its members—to "create" or "design" the kind of boundary which would reasonably be in symmetry with the treaty. Therefore, in unexplored or unknown areas of the territories to be demarcated, it was understood by the countries involved that an agreement of the Commission had the power to produce a boundary dictated by the physical conditions and in accordance with the language of the treaty. This tremendous power of the commission was premised upon *de jure* and *de facto* considerations. In essence, the Boundary Commission had the power to

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174. *Id.* at 14.

create any agreed boundary in order to save and guarantee the validity of the entire treaty.

Finally, the Boundary Commission was actually utilized to conduct a number of technical works (i.e., topographic, astronomic, scientific, military, etc.), which for the first time provided valid and objective data regarding the territories and lands (including their resources and inhabitants, if any) adjacent to the international boundary. The insertion of similar empowering language in Article 5 of the Treaty of Guadalupe Hidalgo was no doubt proposed by the Mexican Plenipotentiaries because they were aware, as was the U.S. side, that the territories embraced by this instrument had not been thoroughly explored. Furthermore, they were also keenly aware, as was Commissioner Trist and other policy makers in Washington, that the maps used for the boundary negotiations were grossly inaccurate.<sup>175</sup>

This empowering language becomes extremely important because it conferred upon the respective U.S. and Mexican "Commissioner" and "Surveyor," as provided by the Treaty, an almost absolute and unlimited power: the power to agree on any questions pertaining to the establishment, demarcation and monumentation of the international boundary as described in Article 5 of the Treaty. This power was granted with the understanding that this mutual agreement entered into between the U.S. Commissioner and Surveyor, on the one hand, and the Mexican Commissioner and Surveyor, on the other, was "*deemed a part of this Treaty, and shall have the same force as if it were inserted therein.*"<sup>176</sup>

Both countries clearly acknowledged the tremendous responsibility which Article 5 of the Treaty placed upon the shoulders of their respective Commissioner and Surveyor. Thus, as indicated earlier,<sup>177</sup> Secretary of State Buchanan instructed U.S. Commissioner Weller on this matter as follows:

This article [Article 5 of the Guadalupe Hidalgo Treaty] places you in a highly responsible position; because it declares that the boundary line between the two Republics which shall be run and marked by the Joint Commission shall be deemed a part of the treaty 'and shall have the same force as if it were inserted therein.' *The action of the Commission, therefore, will be final and conclusive;* and the President has full confidence that, in the discharge of your important duties, *your conduct will be characterized by prudence, firmness, and a conciliatory spirit.* As soon as the boundary has been ascertained and marked, you will cause a true and accurate map to be made of the country through which it passes, in its entire extent. A duplicate copy of said map, *certified by the Commissioners and*

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175. Alberto María Carreño reviews in great detail the negative comments made by members of the Mexican boundary team regarding the inaccuracy of the Pantoja and the Disturnell maps. As a matter of fact, Carreño advances the thesis that the gross mistakes in the Disturnell map regarding the location of El Paso (today's Ciudad Juárez, Chih.) were used as a pretext by the United States to acquire La Mesilla in 1853 through the Gadsden Purchase. See CARREÑO, *supra* note 70, at 214-28, 229-240.

176. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 215; TRATADOS Y CONVENCIONES, *supra* note 3, at 9.

177. See *supra* notes 38, 91 and accompanying text.

*Surveyors on both sides, will accompany the records of the proceedings of the Commission. The Joint Report or declaration by the Commissioners of 'the final result agreed upon them,' under the Fifth Article of the Treaty, will also be transmitted to the Department [of State], to be filed with the Journal or record of their proceedings and the map.*<sup>178</sup>

On this same matter, Señor Mariano Cuevas, Secretary of Foreign Affairs of Mexico, is reported to have instructed Gral. Pedro García Conde, the Mexican Commissioner:

It is agreed in the Treaty that for the conduct of the Commission's dual object maps must be drawn, and a diary must be kept. It was decided that the maps should be a kind of ascertaining (*comprobación*) of a map truly reflecting the way in which the [international] boundary was established . . . . With respect to the diary, the more detailed the better. Its object is to contain an officially written history of the [boundary] works (*expedición*), so in case there is in the future some lamentable doubt or dispute, [the diary] may provide the necessary data to clarify it or resolve it . . . . Lastly, *the Commissioners must have very present that there is a stipulation according to which, the result agreed [by the Mexican members of the Joint Commission] with the American Commissioners (sic), without a de novo examination, without approval of the Chambers [of Deputies and Senators], nor a ratification of the [Mexican] Government, is to be considered as part of the Treaty of Peace and is to have the same force as if it were inserted therein.* Accordingly, the national interests are today without reservation in the hands of our Commissioners (sic) and the [Mexican] Republic deposits upon them all of its confidence.<sup>179</sup>

As a result of these instructions, there is no question that the Commissioners and the Surveyors from both countries knew perfectly the delicate and heavy burden which the Treaty itself and their respective governments had imposed upon their shoulders. The empowering stipulation contained in Article 5 of the Treaty was to become their invariable *modus operandi*. As reflected in the preceding discussion, each of the important policy decisions needed to be adopted by the four key members which composed the Joint Commission—such as the determination of the initial point of the international boundary by the Pacific Ocean or the establishment of the eastern terminus of it, and the confluence of the rivers Gila and Colorado—was to be presented as a formal agreement, as a “result” which had been mutually agreed upon between the requisite members of the U.S. and Mexican parties.

By formally adopting this legal strategy (i.e., the entering of a specific individual contract regarding the adoption of each and every important technical decision to be made by the Joint Commission), the establishment of the international boundary was to be legally characterized simply as a bilateral

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178. REPORT (PART I), *supra* note 117, at 4-5 (Executive Document No. 34) (emphasis added).

179. CARREÑO, *supra* note 70, at 215 (emphasis added). According to Carreño, these instructions are kept in a manuscript at Mexico's Secretariat of Foreign Affairs (*Secretaría de Relaciones Exteriores*).

agreement *inter partes*, explicitly authorized by the Treaty. Once both the U.S. and Mexican Commissioners and Surveyors had entered into it, the resulting agreement automatically became an inherent part of a legally binding Treaty, leaving no avenue to contrary or dissenting positions, save for major vices invalidating the will of the consenting parties.

This legalistic *modus operandi* explains the fact that each and every technical decision adopted by the Joint Commission was invariably contained in a formal minute (*Acta o minuta*), available in English and Spanish, accompanied by the necessary maps and results of the technical data, surveys, and astronomical observations. This served as the technical foundation for the adoption of the agreement, always with the certified signatures of both of the Commissioners and the Surveyors, and executed and dated before several witnesses from both countries.

Evidently, this was the manner in which the Joint Commission operated in the overwhelming majority of cases. However, on rare occasions, especially in the early stages of the Joint Commission's work, some attempts were made to refer the decision of certain questions to their respective governments. For example, at the end of the meeting of the Joint Commission held in San Diego on January 28, 1850,<sup>180</sup> after both parties had already agreed on determining the location of the eastern terminus of the international boundary at the confluence of the Rivers Gila and Colorado, Mexican Commissioner García Conde brought up "a convention" with U.S. Commissioner Weller.<sup>181</sup> Gen. García Conde recalled that when the Guadalupe Hidalgo Treaty was being negotiated, U.S. Commissioner Trist

offered to cede nearly three leagues of land on the coast of the Pacific, the azimuth commencing at the *Ranchería de los Choyes*, which is to be found in the middle of the Bay of San Diego, provided that a small portion of the territory situated on the right bank of the River Colorado, immediately below its junction with the Gila, which was to be left to us [Mexico], should be ceded to him[.]<sup>182</sup>

Then the Mexican Commissioner indicated that as a result of an "unforeseen circumstance," (i.e., the unexpected northwesternly direction taken by the Colorado River after having been united with the Gila<sup>183</sup>), a larger portion of territory on the left bank of the Colorado River "was to remain as a portion of the United States."<sup>184</sup> Suggesting that this portion of land should in reality belong to Mexico, Commissioner García Conde declared

that his desire in this matter is not to make use of the right 'without appeal,' which is conferred upon the Commissioners in whatever they may

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180. See EMORY JOURNAL, *supra* note 83, at 60-61.

181. *Id.* at 61.

182. *Id.* For the discussion of this matter, see *supra* note 47 and accompanying text.

183. See *supra* notes 144-50 and accompanying text.

184. EMORY JOURNAL, *supra* note 83, at 61.

do with respect to the determination of the line; because, that, if on the one hand it is drawn in conformity with the tenor of the 5<sup>th</sup> article of the Treaty referred to, on the other it does not agree with the spirit of those who, with competent powers, concluded them. Consequently, that in this matter he leaves to his government the right to decide on the subject in conjunction with the government of the United States.<sup>185</sup>

U.S. Commissioner Weller replied in these terms:

*He regretted very much his inability to accede to the proposition of the Mexican Commissioner. If any doubts existed in his own mind as to the proper course to be pursued, he would cheerfully leave the question to the decision of the respective governments. But the 5<sup>th</sup> article of the Treaty of Peace provides for the organization of a Joint Commission, to run and mark the boundaries between the two governments, and the result agreed upon by them is to be considered a part of the Treaty itself, and to have the same force as if it were inserted therein. It is expected that we will execute this duty and settle the question forever. It is quite probable that the Ministers who negotiated that Treaty did not possess an exact knowledge of the country through which the line was to pass, as the maps in general use were certainly very inaccurate. This want of correct information . . . had already operated injuriously upon the interests of this government.<sup>186</sup> It is also . . . probable, from the inaccuracies of the maps then existent, that the negotiators supposed that the line, after leaving the mouth of the Gila, would at once crossed the Colorado and thus leave the territory on the left bank upon the Mexican side. He had, however, no other rule to guide him in the decision of these questions, but the plain unequivocal language of the Treaty itself. This requires a straight line from the mouth of the Gila to the Pacific Ocean, and no other could, of course, meet his approbation. The Joint Commission is invested with full power to decide definitively, and he was unwilling to leave this question open to future negotiation. If, in the exercise of our powers under the Treaty, injustice is done to either party, he had no doubt, from the high sense of honor which characterized both nations, that ample reparation would be made.<sup>187</sup>*

#### IV. ARGUMENTS ADVANCED AGAINST THE ACCURACY OF THE PLACEMENT OF THE INTERNATIONAL BOUNDARY, ACCORDING TO THE 1848 TREATY

In general, arguments which have been advanced to challenge the accuracy of the determination of the international boundary between the United States and Mexico<sup>188</sup> along the line separating the state of California from

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185. *Id.* It seems that this declaration must have been triggered after Gen. García Conde consulted on this matter with the government of Mexico (*Secretaría de Relaciones Exteriores*) and received specific instructions.

186. In this respect, U.S. Commissioner Weller suggested that the line between Upper and Lower California "runs several miles south (*sic*) of the line we have fixed as the boundary between our respective territories, and as this line is about one hundred and thirty-five (*sic*) miles in length, the United States loses a considerable amount of land . . ." *Id.* at 61-62.

187. *Id.* at 62 (emphasis added). This issue is briefly discussed by Lesley, *supra* note 85, at 13 ("Weller won his point and nothing more was said about the matter.")

188. There is no published work in Mexico which discusses in a systematic and compre-

Baja California, Mexico, may be divided into the following: (1) The Guadalupe Hidalgo Treaty expressly referred to the "Port of San Diego" and not to the Bay of San Diego; (2) The Initial Point of the boundary by the Pacific Ocean, as well as the Eastern Terminus of it, located at the confluence of the Gila and the Colorado Rivers, have both been moved to other physical locations since they were first determined by the Joint Commission in 1849; and (3) Since the 1848 Treaty did not expressly mentioned the California Channel Islands (i.e., Anacapa, Santa Cruz, Santa Rosa, San Miguel, Santa Barbara, San Nicolás, Santa Catalina, and San Clemente),<sup>189</sup> title to these islands continues to be vested in Mexico.

*A. The Treaty Expressly Referred to the "Port" of San Diego and Not to the "Bay" of San Diego*

It has been claimed that when the U.S. and Mexican Commissioners and Surveyors agreed on the precise location of the "Initial point of the boundary," mandated by the Treaty of Guadalupe Hidalgo to be "at one marine league due south of the southernmost point of the Port of San Diego,"<sup>190</sup> these officials did not used the "Port of San Diego" to measure this distance; instead—allegedly departing from the literal language of the treaty—they proceeded to measure the requisite marine league from the coastline situated at the bottom of the Bay of San Diego.

Indeed, there is a distinct and obvious difference between a "port" and a "bay." When the Treaty was being negotiated in 1848 and, a year later, when the Joint Commission proceeded to demarcate the international boundary in that region, the then existing "Port of San Diego" operated from Ballast Point, a place which was named in the Pantoja Map as "Punta Guijarros." (See MAP NO. 1). Actually, Ballast Point is a short peninsula that protrudes from the southern inland coastline of Point Loma, known as *Punta de la Loma de San Diego* in Pantoja's map, situated at the narrow entrance to the Bay of San Diego and opposite the northern portion of Coronado, where the North Island Naval Air Station is currently located.

The location of the port at the very entrance to the Bay of San Diego, circa 1850, and not inside the bay, was due to the fact that this oceanic area was very shallow, surrounded by shoals and congested with heavy kelp beds which posed serious obstacles and hazards to relatively large ships. When

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hensive manner the various arguments claiming that the boundary established according to the Treaty of Guadalupe Hidalgo by the Joint Commission was incorrectly demarcated. Different Mexican authors, at different times, have brought up a number of allegations, most of them without any technical or legal backing. The author has only chosen those claims which appear to have some semblance of validity.

189. These group of islands are also known as the Santa Barbara Islands or, simply, the Channel Islands. In Mexico, last century these islands were known as the *Archipiélago del Norte* (The Northern Archipelago).

190. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 214; TRATADOS Y CONVENCIONES, *supra* note 3, at 9.

one observes with attention Pantoja's "*Plano del Puerto de San Diego en la Costa Septentrional de California*," sketched in 1782, it becomes evident that the entire marine area was quite shallow, ranging in depth from one to ten fathoms of six Castillian feet.<sup>191</sup> The soundings indicate the presence of sand, gravel, and rock at the port, at the entrance of the bay and throughout this enclosed marine area. Although Punta Guajarros is surrounded by some of the deepest areas (10, 9 and 7 fathoms), numerous shoals located south of Coronado and almost at the entrance to the Bay (known as *Bajos de Zúñiga*), suggest that vessels had to do frequent soundings while attempting to enter the Bay.

Moreover, one has to be reminded that when the Spanish Pilot Pantoja conducted his surveys of the bay in 1782 he had to use a large boat (*Lancha larga*) to do the soundings, and survey marine areas inside and around the bay. The concentration of kelp beds were so dense in that part of the coastline that Pantoja was unable to navigate to Bahía de Todos Santos (present day Ensenada, B.C.), forcing him to get back and change his plans to survey instead the Bay of San Diego, which eventually led to the sketching of his now famous map.<sup>192</sup>

Factually, it seems that very little information, if any, was gathered by the Joint Commission regarding the precise location of the "Port of San Diego" in 1849, during its initial technical work required to demarcate the international boundary with Mexico. The reason for this was quite simple: when the Guadalupe Hidalgo Treaty was finally negotiated between both countries, U.S. Commissioner Nicholas P. Trist and the Mexican plenipotentiaries Bernardo Couto, Miguel Atristáin and Luis G. Cuevas,<sup>193</sup> annexed to the Treaty "an authenticated *Plano del Puerto de San Diego*," sketched by Pantoja in 1782.

In this map, the U.S. and Mexican plenipotentiaries not only indicated that this was the map referred to in the Article 5 of the Treaty, but in order to avoid any doubts or complications, the negotiators themselves physically drew a red line on the map in the place where they agreed that the international boundary had to be placed, writing over this red line the words: *Boundary Line - Línea Divisoria* (See MAP NO. 4). Furthermore, each of the four negotiators signed the map and then affixed the official seal to signify

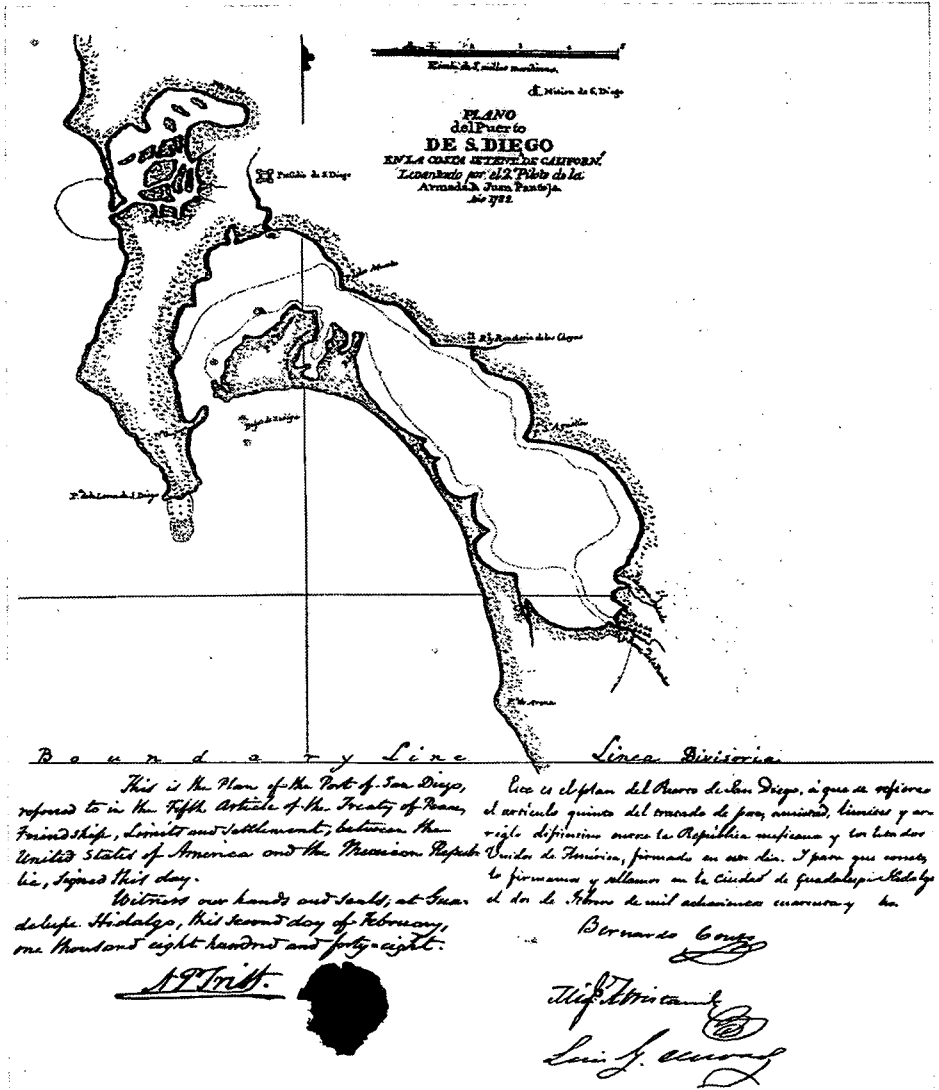
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191. See VOYAGE OF THE FRIGATE PRINCESA, *supra* note 16, at 138 (Translation of Legend in Map No. 5).

192. See *supra* notes 33 and 34, relative to *The Pantoja Map*, and accompanying text; see also Maj. Emory's description of the Bay of San Diego in NOTES, *supra* note 100 and accompanying text.

193. See Part I of this article, *The Pantoja and Disturnell Maps*, *supra* notes 15 and 53-56 and accompanying text.

MAP NO 4: THE PANTOJA MAP





their formal agreement that the international boundary, "distant one marine league due south of the southernmost point of the Port of San Diego," was to be established and demarcated by the Joint Commission where the red boundary line had been drawn.<sup>194</sup>

In their report to their government (*Exposición de Motivos*), written for publication and "as a defense and justification of the Treaty,"<sup>195</sup> the three Mexican Plenipotentiaries did not question at all the placement of the boundary, measured from the lowest coastline of the Bay of San Diego and, on the contrary, expressly recognized that this was "the agreed boundary," noting that "[i]n the annexed map [the authenticated Pantoja Map], the limit in that portion has been *marked in red ink*."<sup>196</sup> The existence of this authenticated Map of Pantoja, which was annexed to the Treaty and became a formal part of it, serves as irrefutable evidence that the boundary line, placed one marine league from the Bay of San Diego and physically measured from the lowest coastline of this bay, was indeed what the U.S. and Mexican negotiators had agreed upon to be the international boundary between the United States and Mexico, as provided by Article 5 of the Treaty of Guadalupe Hidalgo Treaty.

Thus, the work of the Joint Commission may be characterized as a technical exercise directed at merely implementing (i.e., to run and mark "upon the ground" the boundary), which resulted from the agreement already entered into by the negotiators when they signed the Treaty on February 2, 1848. Accordingly, there was no need for the Joint Commission to engage in any discussion or technical work to ascertain whether the initial point of the boundary by the Pacific Ocean had to be measured from "the port" or from "the bay" of San Diego. The drawing of the red line in the Pantoja Map turned this question into an irrelevant issue, legally and technically.

### *B. Moving the Initial Point of the International Boundary*

The Initial Point of the International Boundary on the Pacific Ocean, as well as the Eastern Terminus of this boundary, located at the confluence of the Gila and the Colorado Rivers, have both been moved to other physical locations since they were first determined by the Joint Commission in 1849. The implication in this statement is twofold: First, the change of these two key boundary points was made unilaterally by the United States, without any official involvement from Mexico. Second, these changes took place to the territorial detriment of Mexico.

It must be recognized that both of these key boundary points, as well as numerous others along the U.S.-Mexico boundary, have indeed been physi-

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194. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 336.

195. *Id.* at 337.

196. VÁZQUEZ, *supra* note 47, at 150; *see also supra* notes 52-56 and accompanying text.

cally moved or changed since they were first demarcated by the Joint Commission in 1849. For example, it is well-documented that the *initial point of the boundary* was agreed to be at 32° 31' 59.58 North latitude and in longitude 7 hrs., 48 min., 21.1 seconds (i.e., 117° 05' 16".5) West of Greenwich.<sup>197</sup> (Position A). However, this position was "re-computed" to be in the North latitude 32° 31' 59." 63 and in Longitude 117° 08' 29".7 "which is about three miles farther west of the meridian of Greenwich, on the basis of observations of the moon received by Maj. Emory, on his arrival in New York, from Professor (later Sir) George Bidell Airy, Astronomer Royal at the Greenwich Observatory in England.<sup>198</sup> (Position B). Finally, the "adjusted geographic position" on the North American 1927 datum, of this Initial Point, boundary monument No. 258, is fixed at 32° 32' 03" .817 North latitude and 117° 07' 18" .844 West longitude (letter of the Acting Director of the United States Coast and Geodetic Survey, April 13, 1936)<sup>199</sup> (Position C). This "adjusted geographic position" is the current position.

Turning now to the Eastern terminus of the California boundary at the confluence of the Rivers Gila and Colorado, the agreed geographical position of the junction is that of 32° 43' 32" North latitude and 7 hrs., 38 min. West of the Greenwich meridian (i.e., 114° 30' 00") West of Greenwich (*Confluence 1*).<sup>200</sup> The geographical position of the point of land selected from which the azimuth of the line takes its departure, is 32° 43' 31" .58 North latitude and 7 hrs., 38 min., 12 sec. 27 West of Greenwich (i.e., 114° 33' 04" .05) (*Point of Land 1*).

The "Confluence 1" position was "redetermined" by the Boundary Commission under the Gadsden Treaty of 1853 and used in the computation of the azimuth and the distance from the initial point on the Pacific Ocean, was in latitude 32° 43' 32" .3 north, longitude 114° 32' 51" .61 West<sup>201</sup> (*Confluence 2*). As "re-computed," the position was in latitude 32° 43' 32" .3 North, longitude 114° 36' 09" .9 West (*Point of Land 2*). As "recomputed" on the basis of the 1927 geodetic datum, the confluence point is in latitude 32° 43' 32" .842 North, and longitude 114° 36' 40" .155 West (derived from

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197. See EMORY JOURNAL, *supra* note 83, at 59, 64 (Minutes of the Joint Commission of October 10, 1849 and January 30, 1850). For a discussion on this matter, see TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 415 n.2. For the discussion on this question, see *supra* notes 114 and accompanying text.

198. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 415 n.2 (citing the EMORY REPORT and Map No. 54 of the Boundary Commission).

199. See *id.*

200. For the discussion on this matter, see Minute of the Joint Commission of January 28, 1850, in EMORY JOURNAL, *supra* note 83; see also TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 416 (citing *Senate Executive Document No. 119* at 60-62) (pointing out that there is "a very curious, though unapparent, inconsistency in this quoted statement.") For a technical explanation, see *id.* at 416 n.1.

201. See TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 416 (citing the Emory Report).

data in a letter of the Acting Director, U.S. Coast and Geodetic Survey, May 22, 1936).<sup>202</sup>

In addition, it has also been officially recorded that the monument near the mouth of the Gila River, originally erected by Lt. Whipple in 1849 and then agreed to by Ing. Salazar Illarregui at their meeting of November 30, 1849,<sup>203</sup> was removed after the Gadsden Treaty of 1853 entered into force. It is acknowledged that this monument was transferred to the new international boundary line, "approximately twenty miles farther south, where it was erected as Monument No. 204."<sup>204</sup>

These are but a few examples of some of the changes made along the international boundary with Mexico, either by the Joint Commission or by the Boundary Commission, which had to adjust the binational line because of the Gadsden Purchase in 1853. However, since its inception, the establishment, demarcation, and monumentation of the international boundary between the United States and Mexico was subject to unavoidable and constant changes mandated by a number of unpredictable factors: the availability of the equipment, the working condition of the scientific instruments, the prevailing weather and, above all, the availability of committed and capable individuals able to perform the required technical work. When two national teams of boundary experts are appointed at the highest governmental level to draw the new boundary lines with a neighboring country—as was the case with the Joint Commission—it is almost impossible to think that any changes to the tracing of that very important international boundary may be done in a unilateral manner and, even more inconceivable, to go unnoticed.

As the preceding pages have demonstrated, once the first and original boundary was agreed upon by both the United States and Mexico, as mandated by the Treaty, the agreed result was immediately incorporated into a formal Minute, a legally binding instrument for both parties. Any further change or modification to that already agreed portion of the boundary required a larger amount of detailed technical, legal, and diplomatic work. For any proposed change or modification to succeed it was indispensable to produce a considerable amount of sound and objective evidence, as well as valid reasons clearly demanding the proposed change or modification. Thus, any formal proposal to change the boundary had to be well founded, objectively documented, and agreed upon by the two Commissioners and Surveyors. Once the change of the international boundary was agreed upon, if this was the case, then that agreement had to be expressly incorporated in the re-

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202. See *id.* This publication indicates that "the present (1936) junction of the Gila and Colorado Rivers is some miles east and slightly south of its location in 1849; see Map No. 27000 of the Bureau of Reclamation, Department of the Interior, entitled: *Yuma Irrigation Project Arizona-California.*" *Id.*

203. See REPORT (PART 1), *supra* note 117, at 33-34; see also TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 417.

204. REPORT (PART 1), *supra* note 117, at 33-34; see also TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 417.

spective Minute. Furthermore, a very detailed explanation justifying the change or modification in question and annexing all the supporting evidence, including maps, calculations, astronomical observations, topographical surveys, etc. All of this documentation was then sent to the respective government for final approval by each national team.

It is common knowledge that any international boundary commission must reach compromises based on a number of technical as well as non-technical circumstances. Because the work to be performed by this type of commission is eminently technical (i.e., scientific, astronomic, topographic, trigonometrical, etc.), the expected outcome in most cases is to be highly influenced by the suitability and accuracy of the technical and scientific equipment used in the conduct of field operations.

During the work of the Joint Commission over a 150 years ago, the number of observations and surveys to be conducted depended, to a large extent, on the weather conditions and on the accuracy of the scientific instruments. Sometimes, for example, the precise placement of an astronomical point depended on the ability to observe, for a consecutive number of days, certain stars in certain constellations. The longer the number of astronomical observations, the more accurate information could be obtained from those observations. The other team, which was unable to make such large number of observations, or whose equipment was defective, had to balance these factors when determining which was the more sound and accurate result. Sometimes one technical team was able to conduct more observations, or was equipped with superior scientific instruments, and the outcome of these observations carried more technical or scientific weight. The geographical location of one team may have also facilitated the successful conduct of certain astronomical observations; however, the other team may be able to produce better *in situ* data on topographical surveys. Thus, based on these different types of data, the Joint Commission, as a binational body, was able to reach a given understanding which was then translated into an agreement.

These different technical capabilities of each national team naturally allow for the objective recognition of superior technical work. In this case, each national team is expected to recognize which national team was capable of conducting a more complete set of astronomic, topographic, or trigonometrical observations or surveys. It is precisely the objective awareness of these technical differences that leads each national team into reaching a compromise on certain specific technical questions.

Therefore, it is very difficult to imagine that certain changes in the international boundary could have been made unilaterally by the United States, without Mexico noticing them. On the contrary, the governing principle in these cases is that both the United States and Mexico have been able to have the maturity and the ability to reach mutually satisfactory agreements, in a peaceful and practical manner, to solve numerous boundary questions. Indeed, this goal is what motivated the establishment of the International and Boundary Water Commission (IBWC) 1889, which today continues to be

quite vigilant in order to enforce a technically sound and legally valid international boundary between both countries.<sup>205</sup>

Lastly, the reader is no doubt aware that the arduous technical work conducted by the Joint Commission in 1849 to establish that international boundary was subject to the physical and technical constraints of that era. Today, with the advent of computers and other technological tools and more advanced scientific theories, it may be possible to prove that the technical decisions adopted by that Commission over a century ago were not 100% accurate. However, the principle that guided the admirable work performed by that binational body continues to be in force today: only those technical decisions that clearly go beyond the expected limits of reasonableness will be revisited. Any other decisions, even a few detected errors, will go untouched provided they are within the reasonable limits of tolerance, given the adverse conditions that prevailed along the boundary when the initial demarcation took effect.<sup>206</sup>

## V. THE LEGAL STATUS OF THE CALIFORNIA CHANNEL ISLANDS

Whereas the claim that the international boundary separating both Californias between the United States and Mexico is not that well known among Mexicans (except perhaps for those in Tijuana and Mexicali), the allegation that the California Channel Islands continue to belong to Mexico has been in the Mexican psyche since the day the Treaty of Guadalupe Hidalgo was signed in the outskirts of Mexico City.<sup>207</sup> Among a multitude of journalistic articles published on this question, probably the most serious attempt to demonstrate that the eight small islands facing the coast of California,<sup>208</sup> which are known in México as the *Archipiélago del Norte*, is the work presented before the Mexican Society of Geography and Statistic (*Sociedad Mexicana de Geografía y Estadística*) by Esteban Cházari on January 15, 1894, and the subsequent Technical Opinion rendered on his work on June 7, 1894, by a Special Commission formed by Angel M. Domínguez and Trinidad Sánchez Santos.<sup>209</sup>

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205. The author would like to express his sincere gratitude for the diligent support provided by John Bernal, U.S. Commissioner, and Ing. J. Arturo Herrera Solís, *Comisionado Mexicano*, of the International Boundary and Water Commission (IBWC) during the research and preparation of this work.

206. See Letter to Jorge Vargas from Sr. Ing. J. Arturo Herrera Solís, *Mexican Commissioner*, International Boundary and Water Commission (CCILA/IBWC), dated February 19, 1997 (on file with the author).

207. For a detailed historic, legal, and diplomatic discussion on this matter, see Jorge A. Vargas, *California's Offshore Islands: Is the 'Northern Archipelago' a Subject for International Law or Political Rhetoric?*, 12 LOY. L.A. INT'L & COMP. L.J. 687, 687-724 (1990); JORGE VARGAS, *EL ARCHIPÉLAGO DEL NORTE: TERRITORIO DE MÉXICO O DE ESTADOS UNIDOS?* (Fondo de Cultura Económica, México, 1993).

208. Anacapa, Santa Cruz, Santa Rosa, San Miguel, Santa Barbara, San Nicolás, Santa Catalina, and San Clemente.

209. See VARGAS, *supra* note 207, at App. I, II.

The arguments advanced to support Mexico's claim vary from emotional diatribes charging that the United States took those islands along with vast extensions of Mexico's territory by brute force (thus, never ending Mexico's sovereignty over the islands despite the evident and prolonged adverse possession by the United States), to considerations alluding to the enormous socioeconomic, industrial, and military differences between both countries, which has clearly impeded Mexico from reclaiming its own possessions.

The most frequently used argument may be couched as follows: Mexico's legal title over the California Channel Islands continues to be vested in that country because the islands were not expressly mentioned in Article 5 of the Guadalupe Hidalgo Treaty and, as a consequence, they were not ceded to the United States. This argument is groundless. A simple reading of Article 5 of the Treaty suffices to prove that this key provision does not list any of the territories that Mexico ceded to the United States. Instead of enumerating each of the Mexican provinces ceded to the United States, the Treaty negotiators adopted a more simple and efficient strategy: they centered their attention in merely describing the location of the international boundary between both countries. Thus, according to Article 5:

The Boundary line between the two Republics shall commence in the Gulf of Mexico, three leagues from land, opposite the mouth of the Rio Grande, otherwise called Río Bravo del Norte . . . ; from thence, up the middle of that river . . . to the point where it strikes the southern boundary of New Mexico; thence, westwardly, along the whole southern boundary of New Mexico (which runs north of the town called Paso) to its western termination; thence, northward, along the western line of New Mexico, until it intersects the first branch of the river Gila; . . . thence down the middle of the said branch and of the said river, until it empties in the Río Colorado; thence, across the Colorado, following the division line between Upper and Lower California, to the Pacific Ocean.<sup>210</sup>

Now, when the Treaty was entered into in early 1848, the territory of the Republic of Mexico was divided into 24 Departments, according to Article 3 of the *Bases de Organización Política de la República Mexicana*.<sup>211</sup> The territorial area where the 1848 boundary was to be established affected these Departments: (1) Departamento de las dos Californias; (2) Departamento de Sonora; (3) Departamento de Nuevo Mexico; (4) Departamento de Coahuila; (5) Departamento de Nuevo León; and (6) Departamento de Tamaulipas. However, because Mexico was in the process of drafting a new constitution, the National Legislative Junta decided that the Federal Constitution of 1824 should govern in the interim, and that a specific federal statute, to be later enacted, should provide for the administration and government of each of

210. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 213-14; TRATADOS Y CONVENCIONES *supra* note 3, at 8, 9.

211. See EDMUNDO O'GORMAN, HISTORIA DE LAS DIVISIONES TERRITORIALES DE MÉXICO 91-94 (1966).

these Departments.<sup>212</sup> The boundaries of some of these Departments had to be redefined because of the separation by Texas.<sup>213</sup>

In any event, given the tumultuous military, legal, and political events taking place at the time when the Treaty was being negotiated, political division of Mexico was still in a most fluid state. Anticipating that a number of the existing Departments were going to be subject to various political and territorial changes, it is easy to understand why the Treaty negotiators opted for the more practical solution of describing the cut international boundary rather than enumerating the Mexican provinces to be ceded to the United States.

In 1944, Gen. Manuel Avila Camacho, President of Mexico, appointed a blue ribbon presidential commission headed by Ing. Lorenzo L. Hernández, to render an opinion on the question of the sovereignty of the California Channel Islands.<sup>214</sup> The commission functioned during five years and its conclusions, submitted to the next President of Mexico, Lic. Miguel Alemán Valdéz, have not been made public.<sup>215</sup> The commission was composed of leading jurists, historians, geographers, and diplomats, and they were to answer the question whether the *Archipiélago del Norte* was included as part of the territory that Mexico lost as a result of the Guadalupe Hidalgo Treaty. The answer to this question was in the affirmative.<sup>216</sup> In its final conclusions, the commission wrote that "Mexico lacks any rights over the Archipiélago del Norte and, therefore, if the case were to be submitted to an international tribunal, its award would have to be unfavorable to our country."<sup>217</sup>

Commenting on this matter, Lic. Antonio Carrillo Flores, at that time, Secretary of Foreign Affairs, stated:

None of the Mexican governments governing the destinies of the country since the signing of the Treaty of Guadalupe Hidalgo of 1848 until today, *has considered that it could formalize a claim over these islands against the government of the United States.* The study of 1947 explains the reasons . . . . Currently [1970], the situation continues to be the same: the government of Mexico does not consider that it has new elements to rectify the line of conduct followed without exception by all of the preceding regimes, during more than one hundred years, nor does it believe that it would serve the public interest to formulate a renunciation without an official character, which no one has asked us for, over the rights that some Mexicans consider that our country has over said islands.<sup>218</sup>

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212. *See id.* at 91-92.

213. *See id.* at 96.

214. This "Avila Camacho Commission," as it was then known, was established by presidential decree of December 9, 1944. *See Vargas, supra* note 207, at 719-20.

215. *See VARGAS, supra* note 207, at 11, 67-68, 157-58.

216. *See id.* at 157.

217. *Id.* at 8.

218. *See VARGAS, supra* note 207, at 157-58 (App. VII) (statement made on April 1, 1970 at the Secretariat of Foreign Affairs).

It may be appropriate to underline that the government of Mexico, through the Secretariats of the Interior (*Secretaría de Gobernación*), the Navy (*Secretaría de Marina*) and the Programming and Budget (*Secretaría de Programación y Presupuesto*), has formulated at different times official catalogues listing and describing each of the “islands, keys and reefs,” that form a part of the territory of Mexico.<sup>219</sup> None of these official catalogues has ever listed the California Channel Islands as belonging to Mexico.

## CONCLUSION

International law specialists know that for Mexico, any question involving the international boundary with the United States—whether territorial, oceanic, submarine or affecting the airspace or involving the establishment, demarcation, modification or monumentation of that boundary—has been a matter of the highest priority for the last century and a half. Mexico’s heightened interest and sensitivity for boundary questions stems from the violent severing of its territory as a result of its geographical contiguity to the United States, and the provisions of the Treaty of Guadalupe Hidalgo of 1848 and the Gadsden Purchase (*Tratado de La Mesilla*), finalized in 1853.

The vast territorial losses suffered by Mexico as a consequence of these unfair treaties caused this country its most severe and permanent trauma, a trauma which has always been deeply felt since these legal instruments were signed many decades ago. It seems that this painful experience has induced some Mexican nationals to raise their voices, from time to time, seeking to find some reparation or some way to recover part of those lost Mexican provinces. The two major claims discussed in this work no doubt respond to this aspiration.

Based upon a thorough analysis of the numerous documentary sources from the United States and Mexico which were studied for this work, it can be asserted that the determination of the initial point of the international boundary on the Pacific Ocean, as well as the Eastern Terminus of the boundary at the confluence of the Rivers Gila and Colorado, was conducted in accordance with Article 5 of the Treaty of Guadalupe Hidalgo. The analysis of the documentary sources offer no indication whatsoever that any violations or gross errors were committed by the Joint Commission in the performance of its technical and delicate work regarding these two points of the boundary. Therefore, the international boundary between California, United States and Baja California, Mexico, is legally and technically impeccable. For if this boundary had presented any violations, gross errors, or unexplained anomalies, there is no question that the Mexican Section of the International Boundary and Water Commission would have immediately requested the correction of any problems.

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219. JORGE A. VARGAS, TERMINOLOGÍA SOBRE EL DERECHO DEL MAR: ISLAS MEXICANAS 153-56 (Ceestem, México, 1979); see also Vargas, *supra* note 207, at 721-23.



The Treaty of Guadalupe Hidalgo conferred upon the Commissioners and Surveyors of the binational Joint Commission absolute and almost unlimited powers. In establishing this challenging and long boundary, these government officials were given the power to enter into agreements regarding any question associated with the boundary: its establishment, demarcation, marking, and monumentation. These agreements generated two important effects: First, they were legally binding for both parties. Second, once formalized, they were final and conclusive and deemed to be part of the Treaty.

The claim that the international boundary was wrongly demarcated at the initial point on the Pacific Ocean is surrounded by a very special interest. However, at the same time, this allegation is utterly groundless. The existence of the international boundary between San Diego and Tijuana is physically located where it is today, not only because this was the location agreed by the Joint Commission in 1850 but, more importantly, because the U.S. and Mexican negotiators of the Guadalupe Hidalgo Treaty precisely marked in red ink this boundary line on the Pantoja Map, which was annexed to the Treaty on February 2, 1848. Thus, regardless of whether the location of the initial point was measured from the Port of San Diego or from the lowest shores of the Bay of San Diego (as it was), the fact of the matter is that U.S. Commissioner Trist imposed this "red line" boundary as a *sine qua non* condition on the Mexican plenipotentiaries, pursuant to specific instructions received by Secretary of State Buchanan.

It should be acknowledged that during the slow and technically challenging process of establishing and demarcating the binational boundary by the Joint Commission, many technical mistakes were made. Most of them were due to technical defects affecting the operation and accuracy of the scientific instruments utilized by the Commission. When these mistakes or inaccuracies went beyond the reasonable standard agreed by the Commission, they were immediately brought to the attention of the other party, and corrected when deemed necessary. However, when the discrepancies of the technical readings between the U.S. and Mexican sections were considered to be tolerable, given the hostile environmental and technical working conditions when the boundary was being established, these discrepancies were solved by agreement between the two sections.

In relatively few cases, when one of the contracting parties considered that a gross misreading or a gross mistake had taken place, the affected party submitted the case to the International Boundary Commission (IBC) or even to the International Boundary and Water Commission (IBWC) for its technical analysis and decision. For example, Mexico brought attention to a number of important cases, including *Rancho de Sásabe*, *Mina Oro Blanco*, *La Tinaja*, *Tres Bellotas*, *La Noria*, *El Durazno* (in Sonora), *Ascención* (Chihuahua).<sup>220</sup>

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220. Most of these cases are discussed in LUIS G. ZORRILLA, *MONUMENTACION DE LA*

However, it deserves to be pointed out that, no formal claim has ever been submitted by Mexico regarding any point along the straight line that separates California, United States from Baja California, Mexico. The fundamental principle that has guided, and continues to guide the work of the IBWC, is that the boundary established by Article 5 of the Treaty of Guadalupe Hidalgo and Article I of the Gadsden Purchase of 1853, "is to be respected by each of the two Countries, and that no change shall ever be made to the international boundary, 'except' by the express and free consent of both nations, lawfully given by the General Governments of each, in conformity with its own Constitution."<sup>221</sup> There is no question that this lucid and sound principle, established 150 years ago, will continue to be in force, for many years to come.

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FONTERA NORTE EN EL SIGLO XIX (Secretaría de Relaciones Exteriores, México, 1981).

221. TREATIES AND OTHER INTERNATIONAL ACTS OF THE UNITED STATES OF AMERICA, *supra* note 3, at 215-16.

#### APPENDIX I.

**Answers provided by Dr. Kenneth J. Osborne, Chief, Branch of Production Operations of the U.S. Geological Survey, United States Department of Interior, in a letter to Prof. Jorge A. Vargas dated September 1, 1999.**

**Question 1 - What is the distance (in statutory miles and in meters) between the lowest part of the San Diego Bay and the current place of the international boundary at the Port of Entry in San Ysidro, California today?**

As scaled from the enclosed USGS Imperial Beach 1:24,000-scale quadrangle map, (*See* APPENDIX II), the distance from the southernmost portion of San Diego Bay (point 1 on the map) to the international boundary at the Port of Entry south of San Ysidro (point 2) is approximately 6.47 miles (10,400 meters).

As scaled from the USGS Imperial Beach 1:24,000-scale quadrangle map, the distance from the southernmost portion of San Diego Bay to the point where the international boundary enters into the Pacific Ocean (point 3) is approximately 4.51 miles (7,260 meters).

A more precise measurement of this distance cannot be accomplished without having two monumented points, with known positions, one in the Bay and the other at the Port of Entry.

The present southernmost point of San Diego Bay is itself quite ambiguous, and the point used for scaling is the southernmost point of the Bay where the Otay River breaches into the tidal flat near the curve in the track road around the salt evaporators on the east side of the Otay River where it enters San Diego Bay.

**Question 2 - What is the official length (in statutory miles and in meters) of a “marine league”? According to Article V of said treaty, the boundary between the Californias should be one marine league due south of the southernmost point of the port of San Diego.**

We have forwarded this question to the International Boundary and Water Commission (IBWC). With their research of historical records, they can determine what length was agreed upon for a distance of one marine league by the two national representatives. Any information received from the IBWC will be forwarded to you.

We contacted the Naval Oceanographic Library and they sent the following definition of “league” from the *Encyclopedia Americana International Edition*, Vol. 17:

LEAGUE, (leg) a measure of length, varying in different countries from about 2.4 to 4.6 miles. In English-speaking countries it is generally accepted as 3 miles— the land league measuring 3 statute miles, (4.83 km) and the marine league 3 nautical miles (5,56 km). The word, possibly of Celtic origin, came into modern language via the latin *leuga* or *leuca*. However, the length represented by the term in ancient times has never been determined. The league used by Columbus was 3.15 nautical miles. Spanish land leagues of about 2.63 miles were used in surveying parts of the U.S. Southwest.

The term is also used as a unit of area equal to one square league, as in old California surveys that used a league equal to 4,439 acres (1,796 hectares) and old Texas surveys that used a league equal to 4,428 acres (1,792.1 hectares).

**Question 3 - What is the closest *parallel* to the lowest portion of the coastline of the San Diego Bay? And what is the distance between the Bay's coast line and that parallel?**

By scaling the latitude of the southernmost point of San Diego Bay, as defined above, a latitude of approximately North 32 degrees 35 minutes 58 seconds is calculated. International boundary monument number 258 that is located on the boundary and just east of the Pacific Ocean has a latitude calculated at North 32 degrees 32 minutes 3.817 seconds. The latitudinal difference between these two points is 3 minutes and 54.183 seconds.

The *nearest* whole integer one degree parallel is the 33<sup>rd</sup> parallel, which lies north of the established international boundary; in fact, 33 degrees north latitude lies mostly north of Del Mar, California. The 32<sup>nd</sup> parallel lies considerably south of the established boundary and over ½ degree south of San Diego Bay. Using the point described above, San Diego Bay's southernmost point is 35 minutes and 58 seconds north of the 32<sup>nd</sup> parallel, and 25 minutes 02 seconds south of the 33<sup>rd</sup> parallel. Each degree of latitude is 60 nautical miles, about 69 statute miles, or about 111.1 km.

### APPENDIX II ( MAP ) USGS IMPERIAL BEACH

