

Miguel Costansó: California's Forgotten Founder

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By JANET R. FIREMAN AND MANUEL P. SERVIN

ALTHOUGH MIGUEL COSTANSO was probably the best educated and most able man of all the members of Alta California's founding expedition,¹ it is ironical that today in California, practically nothing is known of this military engineer, and no material has been uncovered relating to his birth, education, and death. Though Costansó has been neglected by contemporary historians, records in Spanish and Mexican archives and libraries leave no doubt concerning this California founder's importance and stature during his lifetime.

Costansó arrived in New Spain in 1764 with the military reorganization expedition of Lieutenant General Don Juan de Villalba. Born in Barcelona in 1741, he had entered the Corps of Engineers on January 12, 1762, with the rank of *subteniente*, as *ingeniero delineador*, after having served in the Spanish Infantry along the Catalonian and Granada coasts.² Nicolás de Lafora, a member of the group of military engineers with whom Costansó departed from Spain, not only described their arrival, but recognized early that Costansó distinguished himself in New Spain. Lafora described the arrival briefly when he wrote that

In the month of August of 1764 seven military engineers departed from Spain for Mexico where they formed a brigade which was placed under the command of Lieutenant Colonel Miguel del Corral. In addition to the above mentioned, it consisted of the following: Engineer Corps Captains Antonio Exarich and Nicolás de Lafora, Lieutenant Felipe Sallent, and Sublieutenants Miguel Costansó, Francisco Fersene, and Joseph González. These men arrived at Veracruz toward the end of the above-said year. Some of these officers, as a result of their activities in New Spain, distinguished themselves, among them the Engineer Costansó.³

JANET R. FIREMAN is currently in Spain completing her research on the Spanish Corps of Engineers in New Spain. Manuel P. Servín presented a paper on Miguel Costansó at San Diego during the Bicentennial Celebration of the Founding of California.

From the time of his arrival at Veracruz in 1764, until May of 1767, Costansó served under General Don Antonio Ricardos and his immediate superior, Lieutenant Colonel Miguel del Corral, in mapping and charting the coast of the Gulf of Mexico. Less than a year before Costansó left Veracruz, his first post in what was to become an extremely long career in New Spain, there were seven military engineers stationed in Veracruz and at the harbor fortification San Juan de Ulúa. Four more military engineers served the interior of New Spain,⁴ and it was to the credit of Costansó that he was selected, upon his own petition, to travel to Sonora as engineer for the Elizondo expedition, sent to control rebel natives.

Costansó served under Brigadier Domingo Elizondo for about one year, charting the battle plans and taking geographical and topographical measurements utilized in later maps.⁵ Called from Sonora by Visitor General José de Gálvez, Costansó continued southwest and joined Gálvez in San Blas to participate in the *junta* to decide upon the "proposed voyages to San Diego and Monterey".⁶

It is obvious from the men that Gálvez invited — Engineer Costansó, Naval Commandant Manuel Rivero Cordero, Mathematician Antonio Faveau y Quesada, and Royal Navy Pilot Vicente Vila — that no hacks were consulted. Even Captain Gaspar de Portolá and Father Fray Junípero Serra were not present to plan the occupation of Alta California. Gálvez did not inform Portolá, who at the time was governor of Sinaloa, until after the *junta*.⁷ Fray Junípero was not yet a follower of Gálvez because Father Francisco Palou and the Fernandinos had just finished their intrigue to replace the Jaliscan Franciscans in the former Jesuit mission field of Lower California.⁸ Consequently, to overlook Gálvez's plan and ambition to occupy Upper California, and especially to ignore the plans that Costansó, Rivero, Faveau y Quesada, and Vila helped to develop for the founding of Alta California, is historical folly.⁹

The importance of Gálvez' plan and Costansó's contribution for the founding of Upper California are well appreciated and described by Professor Michael E. Thurman, the authority on the port of San Blas, where he states that

Gálvez also assisted Manuel Rivero with his plans for building up a permanent settlement — the village of San Blas. Noting that the commandant had completed an outline map of the new Villa de San Blas and the port, Gálvez assigned his own engineer, Dragoon Lieutenant Miguel Costansó, to complete a set of finished drawings for submission to the viceroy. Apparently both Costansó and Colonel Domingo Elizondo worked on the maps and drawings, but the official map or maps sent to Viceroy Francisco de Croix were drawn by Lieutenant Costansó. Consequently, from the point of view of modern-day historians, the remarkable Costansó had contributed early and significantly to the founding of Alta California — in this case, with his intimate knowledge of its major supply base and the new military bastion of San Blas.¹⁰

Building the Villa de San Blas was, however, only the first project initiated for occupying Upper California. The other plans developed by this distinguished *junta* were put into effect efficiently and quickly. Both Costansó and Gálvez crossed the Sea of Cortés and landed in the rundown former Jesuit mission fields. Costansó was dispatched to the area north of Cape San Lucas and made scale drawings and plans of the Cape, Bahía de La Paz, and Cerralvo.¹¹ Gálvez dictatorially examined the missions, reorganized administrative methods, instituted other reforms and practices, and organized the four-phased Sacred Expedition to Alta California, personally selecting Fray Junípero Serra as president of the future missions despite opposition to the project by Serra's superior.¹²

The Sacred Expedition was a dramatic success. The *San Antonio*, commanded by Juan Pérez, discoverer of Vancouver Island, arrived first on April 11, 1769. The *San Carlos*, commanded by Vicente Vila and carrying Engineer Costansó and Lieutenant Pedro Fages, dropped anchor on April 29. The first land expedition, led by Captain Fernando Rivera y Moncada, and accompanied by diarist Fray Juan Crespi, made camp on May 14. Finally, the Portolá-Serra contingent, almost duplicating Rivera y Moncada's march, arrived at San Diego on July 1 after losing thirty-two out of forty-four Jesuit civilized Indians.

Consequently, San Diego was the first European settlement in California. With the primary establishment of California, Costansó's active role in the province diminishes while that of other leaders, except Portolá, increases in importance. While Fray Junípero

Serra remained in San Diego to take care of the ill, Costansó accompanied Portolá in his unsuccessful attempt to locate Monterey Bay in 1769. Miguel Costansó, who would draw up plans for the Presidio and Mission of Monterey,¹³ was appointed cosmographer of the first trek. His work in 1769 consisted of marking and mapping “the ports and lands that might be discovered, and at the port of Monterey to lay out the royal presidio that was to be founded.”¹⁴ Costansó did his work excellently. Keeping a superb account of the entire expedition which would later be published in his famous narrative on the expeditions to Alta California, Costansó was the first man to chart impressive and beautiful San Francisco Bay. The quality of his work is succinctly described in an article, “The Visual Knowledge of California to 1700,” by Arda M. Haenszel.

San Francisco Bay, of course, was not shown on any maps of the California coast until Costansó’s map was published in 1771, although most of the other coastal features were extremely well known and fairly well shown much earlier. To this young and extremely talented engineer with the Portolá party fell the honor of adding the last and greatest harbor of all. And quite accurately he drew it. As with Kino, the Spanish here had an expert right on the spot.¹⁵

Costansó’s talent and skill as a mapmaker was no accident. As a corpsman, Costansó necessarily possessed not only military knowledge, but also technical skill.¹⁶ When Don Jorge Próspero, Marquis of Verboom, proposed a plan to Philip V in 1710 for the organization of a Corps of Spanish Engineers, he suggested that admittance into the new corps be dependent on several qualifications. Verboom insisted that candidates for the corps already be officers in the armed forces as much for necessary military knowledge and training as for the elite stature he designed the corps to have. Further, Verboom demanded that military engineers be trained especially in technical and scientific aptitudes in the Real Academia Militar de Matemáticas, which he established in Barcelona, modeled after the one in Brussels.¹⁷

By a royal decree of April 11, 1711, the Corps of Engineers of Spain was established on Verboom’s plan, and with him as *Ingeniero General*. The first general ordinance of the corps was promulgated on July 4, 1718, and set down the basic organization of the corps that was to continue through the century. Administrative changes

were implemented through royal order during the first half of the century, and a distinctive new general ordinance was published in 1768, and another, again in 1803.¹⁸ A plan of 1749 called for the stationing of 110 military engineers in the Indies,¹⁹ but shortly after his arrival in New Spain, Costansó was one of only eleven engineers in New Spain, the area of Spanish possessions in America that always received more engineers than any other.²⁰ By 1778, there were still no more than eleven engineers in New Spain, out of a total of fifty-six in all of Spanish Ultramar.²¹ Despite elaborate suggestions and plans for augmentation of the corps in the Indies dated 1767, 1768, and 1778, by 1809 the number of engineers in New Spain (including Texas and Florida) still remained at eleven, out of a total of fifty-seven regular corpsmen.²²

Costansó and his six fellow engineers who arrived in New Spain in 1764 with Villalba, formed the core of Spain's engineering delegation to New Spain. Because of the short number of engineers in the realm, and the demand for their skills, designation of a corpsman to accompany the Sacred Expedition is one more indication of the importance placed on the project by the Visitor General and the Crown. That Costansó was selected by Gálvez is indication of the confidence and esteem in which the young engineer was held.

Despite the praise showered on Costansó for his mapping of San Francisco Bay and his drawing of plans for the presidio of Monterey, his outstanding contribution to California during his stay rests in another area. Actually, it is as an historian and writer that he truly distinguished himself. His *Diario Histórico de los viages de mar, y tierra hechos al norte de la California* (Mexico, 1770), unlike the California diaries of other founders such as Junípero Serra,²³ Juan Crespi,²⁴ and Gaspar de Portolá,²⁵ is not merely a boring day by day chronicle or a ghost written memoir. Costansó's *Diario* is a valid historical account that reflects modern methodology. The diary contains background information to the occupation as well as the events themselves of the Sacred Expedition. Costansó wrote with balance, he avoided bias and trivia, and differing from other diarists, mastered grammatical Castilian. In brief, he is California's first true historian.

It is no wonder then that Zoeth Skinner Eldredge described Costansó's *Diario* as "the admirable narrative of Miguel Costansó, the engineer of the expedition,"²⁶ and that Hubert Howe Bancroft

enumerated it first among works devoted exclusively to the founding of the province.²⁷ Additionally, Bancroft indirectly praised the quality of Costansó's work even more when he stated that "Crespi's diary, like that of Portolá, is a long, and, except in certain parts, a monotonous description of petty happenings not worth remembering."²⁸ J. Gregg Lane, editor of the Historical Society of Southern California, which published Crespi's *Diary* of the discovery of Vancouver Island, despite his Society's previous predilection for Crespi and for the friars, also demonstrated his appreciation of Costansó's work by writing that the name of Ensign Miguel Costansó . . . "will never become dim in the pages of our history because of his diary of the expedition."²⁹

Despite his assigning due praise to Costansó, J. Gregg Lane was in error on two points. First, Costansó was scarcely ever anything but dim in written California history, especially in textbooks. Secondly, it would not be because of either his cartographical contributions or his historical writings that Costansó would merit recognition in California, but rather through his recommendations for populating California and his part in establishing the Villa de Branciforte, present-day Santa Cruz.

Actually, Costansó's work in populating California began with the expedition's failure to find Monterey in 1769. Costansó, according to Portolá's *Diario*, along with Pedro Fages and Fernando Rivera y Moncada, urged the commander to search farther north for Vizcaíno's Monterey.³⁰ Just what were the true roles that Costansó, Serra, and others played later in urging that San Diego be not abandoned after the first fruitless Monterey expedition returned is difficult to assess from the nature of the sources.³¹ But that Serra's role appears to have been overstressed by some historians, especially by the hack romantics, is evident.

Charles E. Chapman, the authority on the founding of Alta California, propounds that the military, consisting of Portolá, Costansó, Fages and the reputedly timid Rivera y Moncada, along with the overdetermined Serra, were decided to hold California. Chapman, disagreeing with his colleague Bolton, reduces the stature of Serra and raises that of the military when he boldly states:

A story has sprung up that Portolá might have abandoned Alta California but for Father Serra. The latter is said to have prevailed upon the commander

to delay his departure, with the result that the *San Antonio* was sighted the very day before Portolá planned to leave. If this is true, then Serra is to be credited with having saved the Alta California establishments in the first hour of need. It seems probable, however, that it is an injustice to Portolá. There is no doubt that Serra wanted to stay, and that Portolá was not enthusiastic over the new country, but the commander in chief was a soldier whose every action . . . seems to show an intention to carry out his orders and hold the country to the last moment compatible with the safety of the forces under his command. . . . "The remainder of the expedition," decided the junta, . . . "was to clearly hold this important post".³²

Although Costansó was only one member of the *junta* and he was not the expedition's commander, because of his previous relationship with Gálvez, he wielded great influence at San Diego. Thus, his advice should have had much more effect on Portolá than that of either Lieutenant Fages or Militia Captain Rivera y Moncada.

After the founding of Monterey, Costansó's influence upon the development of California would have to be felt mostly from outside the province. In 1770, shortly after the planting of permanent colonization, both Costansó and Portolá sailed for Mexico.³³ Portolá became governor of Puebla de los Angeles in Mexico in 1777, where he governed until 1784, and "was finally ordered to Spain where he died."³⁴ Costansó returned to Mexico where he began a long career in the capital, distinguishing himself as the unofficial director of civil architecture and of improvement in the enlightenment years of the later Spanish period.

Only twenty-three years old when he arrived in New Spain, Costansó spent the next one-half century laboring in the New World. He was a man completely dedicated to his work, as proved by the exhaustive list of his accomplishments. After his return from the Alta California expedition, Ingeniero Extraordinario Costansó was put in charge of construction of the Hospital General de San Andrés. In 1772 he began a project that took him eight years: the erection of a new building to house the Real Casa de Moneda.³⁵ By order of Viceroy Mayorga in 1779, he began work that lasted two and one-half years on the new powder factory in the pueblo of Santa Fe near the capital.³⁶ He directed the reconstruction of the burned powder factory at Chapultepec, drafted plans for and supervised the pavement and the leveling of Mexico, and gave advice on the drainage and water supply from Lake Chalco for the capital. Many public

ELEMENTOS

de Geometría que en la
 R^a Academia de Sn Carlos de
 esta Ciudad de Mexico

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el S.^r D.ⁿ Miguel Constanzó
 Capitán de Ingenieros y Preceptor
 primero de dha Aula



Courtesy of Porrúa, S. A.

Title page of Miguel Costansó's textbook on geometry that he used at the Academy of San Carlos where he was a professor.

works commissions were assigned to the talented engineer and architect. He designed a new tobacco factory, the botanical gardens, a cock-fighting arena, a house of mercy, fountains for the main plazas, and the Academy of San Carlos for the study of the fine arts where he became a professor of geometry.³⁷

Costansó participated actively in planning for the defense of the realm during the period when the Spaniards believed England to be menacing New Spain. He surveyed and reported on the damage done to the harbor fortifications at Acapulco by an earthquake in 1776. His plan for a new pentagonal edifice and outworks was approved in 1777, but was altered slightly. Costansó's basic plan for Acapulco survived as the primary Pacific Coast defense.³⁸

Throughout his career, viceroys and other officials consulted Costansó for his advice on various projects. He was even called on to investigate the massacre of the Alhóndiga de Guanajuato by the renegade secular priest, Miguel Hidalgo y Costilla.³⁹

In keeping with military regulations of the day, Costansó petitioned for permission to marry in 1776. The request was granted a little over a year later for the engineer to marry Doña Manuela de Aso y Otal, who was from a fine family in New Spain.⁴⁰ In Costansó's fifty-two years in the Corps of Engineers, he lived through the administrative and organizational changes from above that set the mold for the modern Spanish engineers. He rose in the ranks to the post of *mariscal de campo* and *cuartel maestro general* of the two military districts of New Spain. At his death on September 27, 1814, Costansó was *director subinspector* of the Corps of Engineers, one of fourteen men in the Indies holding this prestigious post, the highest attainable in the corps below the *ingeniero general* and *comandante general*.⁴¹

Although Costansó's major work took place in central Mexico, he continued from the capital, to contribute to the development of California. His first such duty was almost immediately after his arrival in Mexico, when he informed the Visitor General and the Viceroy of the successful occupation of Alta California.

In 1772 Costansó once more was called upon for his expert advice on California matters. Viceroy Antonio María Bucareli y Ursúa received a petition from Juan Bautista de Anza for permission to open a route from Sonora to Alta California, the long-cherished

dream of the Jesuits. Bucareli, in his usual methodical manner, carefully consulted his advisors in the capital and requested information from any expert witness who happened to be available.⁴² Herbert E. Bolton describes the role Costansó played:

Already three months had passed when in August Bucareli referred Anza's proposal to Miguel Costansó, the brilliant young engineer who had been with Portolá in New California, where he had designed presidios and drawn beautiful maps. Having left California with Portolá he was now in Mexico City.

Ten days later Costansó replied with characteristic clearness. His views in the case summed up the whole situation. Judging from the longitudes, Costansó concluded that by air line it was a hundred and eighty leagues from Tubac to San Diego. His estimate was not far from correct. . . .

The proposed journey Costansó considered feasible. The mountains were rough, but . . . since the Indians crossed them, Spaniards should be able to do likewise. . . .

Of the utility of exploration Costansó had no shadow of a doubt. The new settlements planted by Portolá as such were at stake. The barren Peninsula would give no aid. The Gulf was treacherous, and the land route from Loreto to San Diego long and arduous. The sea voyage from San Blas was difficult, and the vessels too small to carry the families of the colonists. As a consequence the New California soldiers were condemned to "perpetual and involuntary celibacy . . ."⁴³

Fortuitously for Anza's name and California's future, the plan was adopted, and the presidio captain made two memorable treks in 1774 and 1775. Some two hundred colonists from Sonora and Sinaloa journeyed with Anza to California and founded the presidio of San Francisco in 1776. Anza's plan, incidentally, as Chapman points out, was not activated by Serra, as Richman would have it, but rather through Costansó and other advisors, but especially by Bucareli.⁴⁴

Within a year of Anza's second trek, Bucareli once again consulted Costansó concerning another California problem: the silting in of San Blas harbor. In this case Costansó appears to have had little influence. Despite participation in two rounds of consultation and lengthy, heated controversy, Costansó's advice on San Blas went unheeded. Agreeing with the distinguished Ignacio Arteaga of Pacific Northwest Coast navigation fame, Costansó recommended that the port be transferred elsewhere. Unsupported in their professional judgment by the *fiscal* of the *audiencia* and by Engineer Miguel del Corral, Costansó's and Arteaga's suggestions were ignored. The Spaniards continued to use the worst port on the Mexican West Coast for supplying California.⁴⁵

Finally, concerning settlement of California by civilized non-Spaniards — *gente de razón* — Costansó was again consulted and once again made most sagacious recommendations. This occupation by Mexican settlers was to become an extremely delicate situation. Although Father President Junípero Serra wrote that he approved of “introducing towns for Spaniards” after the Indians became civilized,⁴⁶ he and fellow Fernandinos never fully supported lay colonization in their efforts and dreams. Every petition, every movement, and every establishment of a pueblo of *gente de razón* by governmental officials was either criticized or directly opposed by the friars.⁴⁷ They zealously sought to protect the California Indian and also, perhaps, to maintain their own influence in the province.⁴⁸

Importing settlers, who later in the Mexican period may have helped to stem United States imperialism, became an accentuated problem after the founding of pueblos San José and Los Angeles. These settlements failed to prosper either in material production or in population growth. Consequently, in 1787, Governor Pedro Fages “proposed that artisans imprisoned in Mexico and Guadalajara should have their sentence commuted to exile in California on condition of working out their term at the presidios or missions, and subsequently remaining as settlers.”⁴⁹ No steps were decisively taken until a contractual plan was considered later in the 1790's.⁵⁰ As might be expected, Miguel Costansó was consulted on the proposal. Costansó's recommendations, a copy of which is located at the Bancroft Library, reveal that able mind and keen foresight that distinguished this historically neglected man. Costansó suggested that each artisan instructor should remain teaching the Indians for at least four or five years and that each should receive salary and rations proportionate to the type of work involved and the size of his family. Costansó recommended that after an instructor had completed his term of duty, he should remain in California, receiving land, cattle, and other colonizing materials as inducement to settle permanently. Families should be sent to California with the instructors to avoid difficulty in regulating their conduct, and at the same time he encouraged marriage among the eligibles, thereby increasing population growth in the province.⁵¹

From Costansó's and other officials' recommendations, a plan was formulated.⁵² About “twenty artisan instructors were sent to Cali-

fornia, chiefly in 1792 and 1795, a few of whom remained permanently as settlers, but most retired on expiration of their contracts before 1800."⁵³ So many returned because the friars, pleading poverty, insisted that instructors work for almost nothing and the teacher-colonists thereby came to believe that they were being exploited — a situation that has at times existed between the California laity and clergy.⁵⁴ Consequently, the friar's actions frustrated Costansó's and the Viceroy's plan for population of the province with people from Mexico.

This frustration came at an extremely critical period in the history of New Spain and of California. Costansó's recommendations for populating the province demonstrated his foresight in diagnosing the problems facing the province and New Spain. At this same time, the British were threatening underpopulated Alta California.⁵⁵ Apparently, civil government officials recognized the British threat and the dire need to strengthen California. In September of 1793 the Viceroy, the Marquis of Branciforte, decreed that he receive recommendations from experts for strengthening the presidios of Alta California. Costansó, as one of the experts consulted in this matter, submitted his *Informe* on October 17, 1794. In addition to stating that troops already in California were of use only for civilizing the Indians, that a new corps had to be formed for garrisoning the presidios, and that additional batteries were needed; he recognized, and emphasized the urgency of populating the province.⁵⁶

Unlike the Franciscans, and especially the late President Junípero Serra, Costansó condemned the possession by individuals or Church of immense, unpopulated sections of land. And, perhaps more humanitarian and more Christian-like, Costansó did not discriminate against the *gente de razón*. Instead of segregating Indians and the *gente de razón*, he believed that the province would be strengthened if *gente de razón* intermingled with natives. Unfortunately, the ideas of this great engineer — a man who designed fortifications, beautiful churches, and civil monuments; who helped engineer the drainage and water supply of Mexico City and who contributed to the establishment of ports; and who served in the primary planning of the establishment of Alta California — unfortunately, many of his noble ideas were rejected by powerful and dedicated, but inelastic friars whose actions did not truly help the Indian to survive

and integrate. Even more unfortunate, however, is that not only were many of his ideas rejected, but that they have not been adequately recorded by historians. Indeed, an historical tragedy would have been perpetuated by the neglect of such a distinguished thinker and builder as Miguel Costansó, California's first historian, had not Fr. Francis Guest, O.F.M., delineated the former's role in the founding of the Villa de Branciforte in 1797.⁵⁷

This article has been written as an introduction to the California Writings of Engineer Costansó. In the next issue will appear the previously untranslated "Report of Don Miguel Costansó to the Viceroy, the Marquis de Branciforte, on the Plan for Strengthening the Presidios of New California, 1794."

NOTES

1. It is impossible to determine the educational level of the Franciscans because no course of study for their seminary work has been found or published. Judging from the writings and journals of the Majorcan priests, it does not appear that they received a thorough liberal arts education.

2. AGI, *México* 1515; AGN, *Historia* 568; AGS, *Guerra Moderna* 7272. Although Costansó is almost always referred to as an ensign (*alférez*) upon his arrival in New Spain in published sources and documents related to the founding of Alta California, and is also called *alférez* in "Destinos dela tropa de la Expedic. del Then. Gral. D. Juan de Villalba," September 20, 1764, AGI, *Contratación* 5507; his proper rank was *subteniente*. In a royal decree of October 19, 1756, ranks and classes for members of the Corps of Engineers were prescribed, and the class of *ingeniero delineador* was to have the rank of *subteniente*, which was Costansó's status as of his entrance into the corps in 1762. The royal decree appears in José Antonio Portugués, *Colección General de las Ordenanzas Militares, sus inovaciones y aditamentos* (Madrid, by royal order, 1764), VI, 803.

3. Nicolás de Lafora, *Relación del viaje que hizo a los presidios internos situados en la frontera de América Septentrional perteneciente al Rey de España (1766-1768)*, ed. by Vito Alessio Robles (México. 1939). p. 15.

4. AGN, *Historia* 568; AGN, *Indiferente de Guerra* 236.

5. Luis Navarro García, *Don José de Gálvez y la Comandancia General de las Provincias Internas del Norte de Nueva España* (Sevilla, 1964), Map No. 105, f.p. 176, and p. 541; José Antonio Calderón Quijano, "Ingenieros Militares en Nueva España," *Anuario de Estudios Americanos*, VI, No. 19, 31-34.

6. Miguel Costansó, *Diario histórico de los viages de mar, y tierra hechos al norte de la California de orden del Excelentísimo Señor Marques de Croix, Virrey, Governador, y Capitán General de la Nueva España: y por dirección del*

Illustrísimo Señor D. Joseph de Gálvez, del Consejo y Cámara de S.M. en el Supremo de Indias, Intendente de Exercito, Visitador General de Este Reyno (México, 1770), p. 9; "Reporte de la Junta, en que se trató de la expedición de Monterey por Mar, y Tierra," San Blas, May 16, 1768, MS, Huntington Library, GA 419; Herbert I. Priestly, *José de Gálvez; Visitor General of New Spain, 1765-1171* (Berkeley, 1916), p. 248.

7. Hubert Howe Bancroft, *History of California* (San Francisco, 1884), I., 115-116.

8. Francisco Palou to the Guardian and College of the San Francisco, Tepic, October 12, 1767, Academy of American Franciscan History (AAFH); Palou to the Guardian and Council of the College of San Fernando, Guadalajara, October 25, 1767, AAFH; Zephyrin Engelhardt, O.F.M., *The Missions and Missionaries of California* (Santa Barbara, 1929), I, 289-301.

9. Priestly, *José de Gálvez*, p. 254; Engelhardt, *Missions and Missionaries*, I, 289-291, ignores the contribution of the *junta*.

10. Michael E. Thurman, *The Naval Department of San Blas*, (Glendale, 1967), p. 62.

11. Charles E. Chapman, *The Founding of Spanish California*, (New York, 1916) p. 86; Thurman, *The Naval Department of San Blas*, p. 62 n; Calderón Quijano, "Ingenieros," p. 31.

12. Palou to Father Guardian, San Javier Biaundo, December 10, 1768, AAFH; Palou to Father Guardian, Loreto, March 4, 1769, AAFH; Palou to Father Guardian, Loreto, April 16, 1769, AAFH; Francisco Palou, O.F.M., *Historical Memoirs of New California*, ed. by Herbert Eugene Bolton (Berkeley, 1926), I, 30-78; Maynard J. Geiger, O.F.M., *The Life and Times of Junípero Serra, O.F.M.* (Washington, 1959), I, 266-269; Charles E. Chapman, *A History of California: The Spanish Period* (New York, 1921), pp. 219-223.

13. Palou, *Historical Memoirs of New California*, II, 293.

14. Palou, *Historical Memoirs of New California*, II, 14.

15. *California Historical Society Quarterly*, XXXVI (September, 1957), 218.

16. Costansó's cartographical precision is demonstrated in three maps he constructed relating to the Alta California expedition: "Plano de la Costa del Sur Correxido hasta la Canal de Santa Barbara en el ano de 1769," showing the California coast from San Lucas north to Cape Mendocino, executed in watercolor; "Carta reducida del Oceano Asiático nombrado por los Navegantes Mar del Sur, que comprehende la Costa Oriental, y Occidental de la Peninsula de California" (1770), including 139 place names and much detail; and "Plano del Fondeadero, or Surgidero de la Bahía, y Puerto de Monterey, situado por 36 grados, y 40 minutos de Latitud Norte, y por 249 grados 36 minutos de Longitud, contados desde el Meridiano de Tenerife," watercolor, with superb representation of terrain. The first of these three, although not signed, is certainly

Costansó's work, by handwriting and style. All three are in the Servicio Geográfico del Ejército, Madrid; and reproduced in *Cartografía de Ultramar* (Madrid, 1957), Carpeta II.

17. *Estudio Histórico del Cuerpo de Ingenieros del Ejército*, (Madrid, 1911), I, 11-12.

18. Portugués, *Colección, passim.*; *Ordenanzas de S.M. para el servicio del Cuerpo de Ingenieros en Guarnición, y Campaña* (Madrid, 1768); *Ordenanza que S.M. manda observar en el servicio del Real Cuerpo de Ingenieros* (Madrid, 1803).

19. *Compendio histórico publicado al cumplirse el Segundo Centenario de la creación del Cuerpo y dedicado a sus clases e individuos de tropa* (Segunda edición; Madrid, 1918), p. 33.

20. AGN, *Indiferente de Guerra* 236.

21. AGS, *Guerra Moderna* 3002.

22. AGS, *Guerra Moderna* 2998, 3002; "Lista general de los oficiales que componen el Real Cuerpo de Ingenieros del Ejército en España, y División de Indias," *Memorial de Ingenieros del Ejercito*, V (Mayo, 1908), 347-351.

23. "Diario de la Expedición . . . desde Loreto a San Diego . . .," in Antonine Tibesar, O.F.M., ed., *Writings of Junípero Serra* (Washington, 1955), I, 38-123.

24. Bancroft, *History of California*, I., 141; "Journey of the Land Expedition from San Diego to Monterey," Palou, *Historical Memoirs of New California*, II., 109-260.

25. See "Diario del viage que haze por tierra D.^N Gaspar Portolá . . .," *Academy of Pacific Coast History: Publications*, I., 31-89.

26. Zoeth Skinner Eldredge, *History of California* (New York, 1915) I., 174.

27. Bancroft, *History of California*, I., 38.

28. Bancroft, *History of California*, I., 141.

29. J. Gregg Lane, "Annals of Los Angeles," *The California Historical Society Quarterly*, XIII (September, 1934), 198.

30. Portolá, "Diario del viage," *APCH: Publications*, I., 84-89.

31. Costansó, "Diario Histórico," *APCH: Publications*, I., 151-157; Chapman, *The History of California*, p. 227.

32. Chapman, *The Founding of Spanish California*, p. 99.

33. Palou, *Historical Memoirs of New California*, II., 299.

34. Bancroft, *History of California*, IV., 783, states that he became governor of Puebla nine years after he left California. This should be in 1779.

Rockwell D. Hunt, *California's Stately Hall of Fame* (Stockton, 1950, p. 43), gives 1777 as the date of his inauguration as governor.

35. AGI, *Mexico* 2472; AGN, *Historia* 568.

36. AGN, *Virreyes* 142.

37. AGI, *Mexico* 1525 and 2472; AGN, *Historia* 477, *Casa de Moneda* 229, *Obras Públicas* 2, 5, 6, and 36, *Real Hacienda*, 218, *Provincias Internas* 121, and *Ayuntamiento* 202; AGM, *Guerra Moderna* 7272; Ernesto de la Torre, ed., *Instrucción Reservada que dió el Virrey don Miguel de Azanza a su sucesor don Félix de Marquina* (México, 1960), p. 96; Miguel Constanzó, "Elementos de Geometría," 1785, MS, José Porrúa Turanzas Editorial.

38. María Lourdes Díaz-Trechuelo Spínola, María Luísa Rodríguez Baena and Concepción Pajabon Parody, *Antonio María Bucareli y Ursúa, Virrey de Nueva España* (Sevilla, 1967), pp. 413-415.

39. *Pública Vindicación del Ilustre Ayuntamiento de Santa Fé de Guajuato* (México, 1960), p. 70; Hubert Howe Bancroft, *History of Mexico* (San Francisco, 1886), IV, 134 n.

40. AGM (Segovia), *Expediente personal* 1813; AGN, *Historia* 568.

41. AGM (Segovia), *Expediente personal* 1813; "Lista general de los oficiales," *Memorial de Ingenieros*, p. 347.

42. Herbert Eugene Bolton, *Anza's California Expeditions* (Berkeley, 1930), I, 45-50.

43. Bolton, *Anza's California Expeditions*, I, 50-51; Chapman, *The Founding of Spanish California*, p. 156.

44. Chapman, *The Founding of Spanish California*, p. 159; Irving Berdine Richman, *California under Spain and Mexico, 1535-1847* (New York, 1965), pp. 96-104; Chapman, *A History of California*, pp. 297-298.

45. Bobb, *The Viceroyalty of Antonio María Bucareli* (Austin, 1962), pp. 169-171; Thurman, *San Blas*, pp. 223-240.

46. Junípero Serra to Teodoro de Croix, Monterey, August 22, 1778, *Writings of Junípero Serra*, III., 254.

47. Manuel P. Servín, "The Secularization of the California Missions: A Reappraisal," *Southern California Quarterly*, XLVII (June, 1965), 133-149.

48. *Ibid.*

49. Bancroft, *History of California*, I, 605.

50. Bancroft, *History of California*, I, 615.

51. "Copia de las condiciones propuestas á S.E. por el Ingeniero 2^o Miguel Costanzo p.^a las contratas de artesanos . . .," MS, Bancroft Library, CA-55.

52. "Conde de Revilla Gigedo al Gobernador de Calif.^a" MS, Bancroft Library, CA-55; Bancroft, *History of California*, I, 615.

53. Bancroft, *History of California*, I, 615.

54. Bancroft, *History of California*, I, 616.
55. Florian Francis Guest, "The Establishment of the Villa de Branciforte," *CHSQ*, XLI (March, 1962), 29-32.
56. "Informe de Sor D. Miguel Costanso al Emo Sor Virrey de Branciforte sobre el proyecto de fortificar los presidios de la N. California," Mexico, 17 de Octubre de 1794, Bancroft Library, M-M 401.
57. Guest, "The Establishment of the Villa de Branciforte," *passim*.