

THE CERMEÑO EXPEDITION AT DRAKES BAY

- 1595 -

A Research Report of the Drake Navigators Guild

by

Raymond Aker

Drake Navigators Guild

1965

TABLE OF CONTENTS

| | Page |
|--|------|
| Foreword | VII |
| Introduction..... | 1 |
| 1. Discovery of Drakes Bay..... | 13 |
| 2. Locating the Anchorage..... | 22 |
| 3. The First Landing and Reconnaissance of the Shore..... | 24 |
| 4. The Camp of Santa Fe..... | 30 |
| 5. Exploration of Drakes Estero..... | 32 |
| 6. The Wreck of the <u>San Agustin</u> | 35 |
| 7. The Search for Food..... | 40 |
| 8. Departure..... | 44 |
| Appendices..... | 46 |
| Appendix I. The Account of Sebastian Rodriguez Cermeño | |
| Appendix II. The Declarations of Sebastian Rodriguez Cermeño | |
| Appendix III. The Account of Father de la Ascension | |
| Appendix IV. The Bolaños-Ascension Derrotero | |
| Appendix V. The Account of Pedro de Unamuno | |
| Appendix VI. The <u>San Agustin</u> and the lancha, <u>San Buenaventura</u> | |
| Appendix VII. Units of Measure used by Cermeño | |
| Appendix VIII. The Account of N. de Moreno | |
| Appendix IX. Tide Predictions for November and December, 1595. Drakes Bay, California. | |

Bibliography

ILLUSTRATIONS

Plate

I POINT REYES.

Photo by Robert W. Parkinson

Between pages 15 and 16

This view, looking east, shows Point Reyes as Cermeño would have seen it as the great ensenada, as he described it, was revealed to him within its lee on the left side of the picture. As Cermeño stood in toward land, he ran only a musket-shot, or a quarter of a mile, off the three mile long south shore of the point before heading up into Drakes Bay which is concealed behind Point Reyes.

II POINT REYES, EAST END. DRAKES ESTERO IN DISTANCE.

Photo by Aero Photographers

Between pages 15 and 16

The extent of Drakes Bay concealed behind this end of Point Reyes prompted Cermeño to state; .. we saw a point which bore northwest, and entering by this we saw that there was a large bay. It was in this part of Drakes Bay, close behind the point in the foreground, that Vizcaino anchored in 1603 with his flagship, the San Diego, a small ship of 200 Spanish tons such as Cermeño's San Agustin.

III DRAKES BAY.

Photo by Aero Photographers

Between pages 15 and 16

Aerial view of Drakes Bay with Point Reyes at upper left; Limantour Estero and Limantour Spit at center. Cermeño made his first landing on Limantour Spit and reconnoitered inland along the spur on which the street work for real-estate subdivision is visible.

IV ENTRANCE TO DRAKES ESTERO, AIR PHOTO, 1943.

Photo: U.S. Department of Agriculture Between pages 15 and 16

This view shows the entrance to Drakes Estero and Limantour Estero as it was described by Francisco Bolaños in 1603 and as it probably was when Cermeño entered it in 1595. The San Agustin's anchorage was located at the center of the lower edge of the photo; about 1,200 yards offshore.

- V SHORE INSIDE LIMANTOUR SPIT. POINT REYES IN DISTANCE.
 Photo by Matthew P. Dillingham Between pages 24 and 25
- View from the spur on which Cremeño made his first inland reconnaissance after landing on Limantour Spit. Upon returning to the spit, Cermeño set up his camp and the building site for the launch nearby Indian settlements located on that portion of the spit to the left of the picture.
- VI LAGUNA RANCH. INVERNESS RIDGE ON SKYLINE.
 Photo by Matthew P. Dillingham Between pages 24 and 25
- View looking east toward Inverness Ridge. After the loss of the San Agustin, it is probable that Cermeño, on a quest for food, followed an Indian trail in this vicinity to reach Indian settlements on the other side of the ridge.
- VII SHIP'S WRECKAGE ON LIMANTOUR SPIT.
 Photo by Robert W. Parkinson Between pages 36 and 37
- Section of deck from an unidentified shipwreck in Drakes Bay recalling the record in the Cermeño account that a fight ensued when the Indians living on the spit gathered the San Agustin's wreckage and the Spaniards attempted to recover it from them.
- VIII SHIP'S TIMBERS AT ENTRANCE TO DRAKES ESTERO.
 Photo by Robert W. Parkinson Between pages 36 and 37
- Timbers from a section of unidentified shipwreck in Drakes Bay. These were formerly stranded high and dry on the spit which formerly crossed the mouth of Drakes Estero from the west side.
- IX EXCAVATION OF 16TH CENTURY INDIAN MIDDENS ON LIMANTOUR SPIT.
 Photo by Robert W. Allen Between pages 36 and 37
- Explorer Scouts from Troop 34 of Mill Valley, California, excavating test pit under direction of Drake Navigators Guild member, Matthew P. Dillingham, right and Troop Leader, Charles Putney, left. The midden marks the site of one of the Indian settlements probably visited by Cermeño on his first landing and yielded artifacts attributable to the wreck of the San Agustin. Scene looking northeast toward Inverness Ridge, Limantour Estero visible beyond diggers.

X NORTH END OF BEAR VALLEY RANCH. FRESH WATER LAGOON IN FOREGROUND. TOMALES BAY IN DISTANCE.

Photo by Robert W. Allen

Between pages 42 and 43

Scene showing the fresh water lagoon known as Lake Olemas in the days of Spanish occupation. Evidence of former Indian occupation under the trees in the left foreground and elsewhere in the vicinity correlates with the descriptions of the inland Indian settlements mentioned in the Cermeño accounts. Cermeño probably approached these settlements from the spur leading from Inverness Ridge at the far corner of the marsh, right hand side of view, center.

XI BEAR BALLEY RANCH. POINT REYES STATION IN DISTANCE. FRESH WATER LAGOON BEYOND TREES.

Photo by Robert W. Allen

Between pages 42 and 43

View of fresh water lagoon from base of Inverness Ridge. Evidence of former Indian occupation is found under the trees in the foreground.

XII OLEMA VALLEY, NORTH END. BEAR VALLEY RANCH.

Photo by Robert W. Allen

Between pages 42 and 43

View looking southeast taken from the base of Inverness Ridge nearby the former Indian settlements mentioned in Plate XI. The scene is reminiscent of Cermeño's description that...it looked like the country of Castile and was of good character.

XIII OLEMA VALLEY. GIANT BAY TREE BOLL.

Photo by Robert W. Allen

Between pages 42 and 43

One of the trees on the site of the inland Indian settlements described by Cermeño. See Plate XI, left side of panorama, second tree from left.

MAPS AND DIAGRAMS

| Figure | Following page |
|---|----------------|
| 1. Landfall..... | 13 |
| 2. Track of the SAN AGUSTIN on the California Coast..... | 14 |
| 3. Shelter Cove..... | 14 |
| 4. Arrival and Anchorage at Drakes Bay..... | 15 |
| 5. SAN AGUSTIN'S Anchorage at Drakes Bay..... | 22 |
| 6. First Landing and Reconnaissance of the Shore..... | 24 |
| 7. Exploration of Drakes Estero..... | 32 |
| 8. Wreck of the SAN AGUSTIN..... | 35 |
| 9. The Route of the Foraging Expedition..... | 41 |
| 10. Departure from Drakes Bay..... | 44 |
| 11. Track of the Launch from Drakes Bay to Acapulco, Mexico..... | 45 |
| 12. SAN AGUSTIN, Outboard Profile and Longitudinal Section..... | 71 |
| 13. SAN AGUSTIN, Transverse Section..... | 71 |
| 14. <u>Lancha</u> , SAN BUENAVENTURA and the SAN AGUSTIN'S boat ... | 71 |

FOREWORD

In conjunction with their researches into the activities of Sir Francis Drake at Nova Albion and Drakes Bay, the Drake Navigators Guild also has investigated the circumstances surrounding Sebastian Rodriguez Cermeño's enforced sojourn at the same place 16 years after Drake's departure for the Indies.

Although Cermeño's campsite still remains to be found, the Guild's research and field work have clarified many obscure passages in the old chronicles, and have uncovered many hitherto unknown facts about this unfortunate venture.

Numerous evidences of Cermeño's stay exist and should be preserved; there is no doubt that much more evidence remains to be found on Limantour Spit and in its immediate vicinity. At least a dozen Indian middens dating from the time of Drake and Cermeño have been excavated and have yielded many artifacts which are attributable to one or both of their visits.

The story of Cermeño's voyage and shipwreck at Drakes Bay, together with the Drake voyage and explorations, are a stirring legacy from the Great Age of Exploration. Drakes Bay itself, by virtue of being the scene of a momentous event on each of these voyages, is a focal point of history, and as such, an ever present reminder of our colorful heritage from the past.

In the following pages the Guild retraces Cermeño's explorations through his and contemporary accounts and locates the general area of his campsite and the wreck of his ship at Drakes Bay. The conclusions represent the combined researches and opinions of past and present members, most notably Matthew P. Dillingham, Robert W. Allen, Robert W. Parkinson, and the author. Edward P. Von der Porten has made valuable contributions by his archeological work in the Indian middens. Each of these people has explored all or parts of the area under discussion, and their own knowledge or that of long time residents in the area has been of great value to this study.

The Drake Navigators Guild emphasizes the importance of this historical heritage for the inspiration of future generations.

INTRODUCTION

To unravel the tangled skein of events and objectives surrounding the voyage of Sebastian Rodriguez Cermeño in 1595 entails a comprehensive study outside the scope of this paper, but a brief background is necessary to orient his activity at Drakes Bay within the historical context of the time. Although very much a part of the history of Spanish exploration of the northwest coast, Cermeño was far from being a pioneer discoverer. His voyage followed the Cabrillo and Ferrello expedition to these parts by fifty-two years. That expedition explored this coast to as high as 41° latitude and had sailed beyond to 42° in the winter of 1542-43. The first of the Philippine ships, the fabled Manila Galleons, had opened the route across the North Pacific in 1565, forty years before Cermeño. By 1595 the trade was well established, with several ships a year making the round trip between Acapulco, Mexico, and Manila. In the year that Cermeño made his voyage, four galleons had sailed from the Philippines for Acapulco.

Curiously, the purpose of Cermeño's expedition is identified in his official Declaracion in witness of the discoveries to be made as the new discovery of the coast of New Spain, an expression which raises an interesting point of speculation. In a literal sense this statement is enough, but Henry R. Wagner sheds some light on what the intent may have been in this case. In writing on the Spanish discovery and occupation of the Philippines, he mentions that "discovery" in those days meant "taking possession."¹ The right of Spanish possession on the northwest coast was a sore point at this time. After Drake's return to England in 1580, Queen Elizabeth openly challenged the Spanish ambassador to England, Bernardino de Mendoza, on Spain's right to lands not occupied by them.² Although Cabrillo had sailed up to these parts in 1542, he was not able to land to take possession and there is an allusion to the contemporary English thinking on this in The World Encompassed by Sir Francis Drake which attempts to defend Drake's claim to Nova Albion: The Spaniards never had any dealings, or so much as set foote in this country, the utmost of their discoveries reaching only to many degrees southward of this place.

It is hard to believe that Cermeño was not aware that Drake had taken possession of this coast in a harbor useful to all his needs, at or near 38 degrees of latitude. Though it may have been merely a routine action,

-
1. Wagner, Spanish Voyages , p.102
 2. William Camden's account of Francis Drake's voyage Wagner, Sir Francis Drake's Voyage , p.317

Cermeño lost no time in officially taking witnessed possession on shore at his first opportunity to land at Drakes Bay.

Renewed Spanish interest in discovery on the northwest coast of America began shortly after the Philippine trade became established and was coincident with a revival of interest in the Northwest Passage. In 1568 Captain Juan de la Isla proposed to the King of Spain a voyage of exploration from the Philippines via China as far to the north as possible and thence to the northwest coast with particular emphasis on finding the passage.¹ In 1572 he was accordingly appointed captain of an expedition to put his proposal into effect. His instructions called for him to take note of what lay between China and North America and then note what there was on the North American coast down to and including the earlier discoveries of Cabrillo. Isla was unfortunately refused a ship in Manila and the project thereby came to naught. For the next decade occasional galleons returning to Mexico from the Philippines sighted the northwest coast but stayed well off shore, taking no unnecessary risks with their precious cargoes or passengers.

In 1578 the wall of secrecy around the "Spanish Lake", the exclusive South Sea, as the Pacific Ocean was then generally known was breached by an English expedition commanded by Francis Drake who proceeded to range the west coast of the Americas from the southernmost tip to a point on North America somewhat beyond the explorations of Cabrillo. He claimed the entire northern portion of the continent for his Sovereign, naming it Nova Albion. Thomas Cavendish followed Drake by eight years and wreaked havoc with the Spanish Settlements in Chile, Peru, and Central America. At the tip of Lower California, November 4, 1587, Cavendish captured and burned the richly laden Manila Galleon, Santa Ana. Cermeño, then a man probably in his late twenties or early thirties, appears to have been a pilot on the ill-fated vessel. Coincidentally, two other men who were also to figure in the story of Spanish exploration and discovery on the northwest coast were also on board: one was Sebastian Vizcaino,² returning from Manila as a merchant with a great deal of treasure and merchandise; the other was the Greek pilot, Juan de Fuca³ who in 1592 was to discover the strait that now bears his name. Through Vizcaino's resourcefulness, the still burning hulk of the ship was saved, the fires extinguished, and in it the crew and passengers who had been marooned by Cavendish sailed on to Acapulco.

-
1. Wagner, Spanish Voyages....., p.127
 2. Wagner, Spanish Voyages....., p.155
 3. Wagner, Sir Francis Drake's Voyage Around the World, p.477.

Drake's activities on the northwest coast do not seem to have given the Spaniards cause for immediate concern,¹ but when after his return to England, the English put in effect plans for following up his opening of the spice trade, the Spaniards were provoked to quick reaction. One result was the dispatch of a costly and futile expedition into the South Atlantic to close the Straits of Magellan.

New English voyages were planned for finding a Northwest Passage, including a search from the Pacific side. Whether England would benefit from a settlement at Nova Albion depended upon the discovery of such a passage. Aside from the strategic value of such a settlement controlling the Western entrance, there was no economic value in such a remote outpost. Men in high office in Mexico, and probably Spain as well, also realized the logistical problems in supporting such an outpost, and as long as the passage remained unfound, the Spanish possessions in the Pacific and the trade with the Orient were relatively secure.² In the years before Drake's voyage of 1577-80, such a passage would have been a great convenience for Spain and her Pacific possessions. Now from the Spanish point of view the discovery was something to be avoided, and to make the matter worse, if the passage did exist, it would be found in territory claimed by England, no longer an innocuous power. Spanish discoverers would need to be careful to give foreigners no assistance through their own explorations. The Viceroy of Mexico, Conde de Monterey was of the opinion that it would be unwise to find something too far north that might awaken someone still asleep.

Cermeño's voyage was a result of a plan first proposed in 1585 by Francisco Gali, noted Spanish pilot and cosmographer to the then Viceroy of Mexico, Pedro Moya y Contreras,³ who was at that time building two small vessels on his own authority to make a reconnaissance of the northwest coast. The Viceroy advised the King in a letter dated January 22, 1585,⁴ that he was building the vessels to remedy the difficulties of the

-
1. Wagner, Spanish Voyages....., p. 284
 2. These views are expressed by the Viceroy, Marqués de Montesclaros, in a letter to the King, July 30, 1604, and similarly by the Conde de Monterey. Wagner, Spanish Voyages... , p. 272 and 284 respectively.
 3. Moya y Contreras was the first Inquisitor-General of the Holy Office in Mexico and at the time of his appointment to Viceroy in September, 1584, he was Archbishop of the Audiencia. After the death of the Viceroy, Conde de Coruna in June, 1583, the Audiencia (Supreme Court) had been left in charge of affairs in Mexico until his appointment as Viceroy.
 4. Wagner, Spanish Voyages....., p. 132

navigation from the Philippines for lack of ports on that coast, and so that your Majesty may have the knowledge of all that coast which some say runs on to join the mainland of China, and others that it terminates in a strait called 'Anian' which continues to and ends near Ireland. Gali had just returned from the Philippines, having sighted the coast of California at about $37\frac{1}{2}^{\circ}$, and had made an account of his coasting from there to Acapulco.¹ It was his opinion that the Viceroy could obtain better results by setting out from the Philippines and approaching the North American coast from the highest possible latitude, thence exploring southward to Acapulco.

Whether Moya y Contreras was influenced by Drake's discovery of a port on that coast where none had been found before, cannot be said with certainty, although by the time of Cermeño's voyage, the details were known in England and probably in Spain as well. There is a fair chance, however, that the Viceroy was influenced by another circumstance related to Drake's sojourn there. Father Jeronimo de Zárate Salmeron, writing about 1626 relates that a foreign pilot named N. de Morena or Morera (spelled both ways) had been left by Drake at California and in four years time had walked back to Mexico.² Of greatest interest, aside from Morena's account of having found many great inlets and harbors on his journey, was his claim to have discovered an arm of the sea at the place where Drake left him which he believed to be the Strait of Anian, that is, the Northwest Passage. It also seemed to Morena that the Gulf of California continued to the north to connect with the harbor where Drake had left him ashore.

Although this account is tenuous and probably comes down to us at third or fourth hand, and as told by Fr. Salmeron is very brief, it merits attention and further research. Henry R. Wagner, in his book Sir Francis Drake's Voyage Around the World, points out that some confirmation is given to the story by the fact that when Drake raided Guatulco, Mexico, some of the sailors in a vessel anchored there thought the name of Drake's pilot was Morera. The identification of name and profession is certainly singular. A full translation of the account is contained in the Appendices.

Father Salmeron's account of Morena's story states that since the pilot was very sick, he was put ashore to "see if the airs of the land would give

-
1. Wagner, Spanish Voyages....., p.133
 2. Documentos para la historia de Mexico, Series, III, Tomo IV. Translated in The Land of Sunshine: The Magazine of California and the West, February, 1900. Vol. 12:3

him life." In a few days time he recovered his health. Whatever the circumstances that led to Morena's taking his chances on walking back to Mexico, it was inevitable that in doing so, he would discover the Golden Gate and San Francisco Bay. The immense scope of the northern end of the bay leading into San Pablo Bay, and the Delta country is of such nature, that it could give the impression of being the much sought-for Northwest Passage which Drake made no secret of seeking. The southern end of the bay is also of such extent that it could have suggested a connection with the Gulf of California. The northern termination of the Gulf was not known in the late 16th century, and Morena probably did not see the southern end of San Francisco Bay or have any certain indication of an ending to the Gulf of California. After he crossed San Francisco Bay, his natural inclination would be to go out to the sea coast where he could be certain of his route.

Morena would have reached Mexico in 1583 or 1584. He appears to have followed the California coast south to some point near the head of the Gulf of California, then down the eastern shore of the Gulf to a point where he crossed inland to Santa Barbara in Chihuahua, and thence to Sombrerete where he gave a long narrative to Captain Rodrigo del Rio, Governor of New Galicia. His story of finding the Northwest Passage was one that the Spanish authorities could not afford to have circulated. Morena might be either mistaken or a liar, but, on the other hand the English might have already had wind of it. The dilemma was met by imposing secrecy and awaiting further developments.

Significantly, there is a new aspect to the northwest exploration expressed in the conclusion of Moya y Contreras' letter of 1585 to the King:¹ "Besides what has been said, this voyage may have another result, namely that by this way and at less cost than by land it will be possible to communicate with and serve New Mexico while being settled as, according to the account of Antonio de Espejo which I sent your Majesty in the Flota, it is understood to be very near the coast. Espejo's discoveries in the southwest of North America made a considerable stir in Old Mexico at this time because of the prospect of new gold and silver mines being found there.

From the middle of the 16th century a persistent rumor was current of a populous and rich settlement named Quivira supposedly situated on a river located on the northwest coast of North America. The general belief was that there was such a town in about 40^o, later it was moved to a point

1. Wagner, Spanish Voyages....., p.132

in the Straits of Anian, that is, the supposed Northwest Passage. Shortly after the Spanish voyages of discovery to this coast were abandoned, Father de la Ascension asserted in his account of Vizcaino's expedition that the real reason for that expedition was to look for the city of Quivira¹ which they believed they would find on a large river.

Even though the great cost and exertion of these voyages demanded practical results of predictable value beforehand, such as the improvement of the navigation from the Philippines, it is true that the lure of profit from the unknowns to be discovered acted as a great stimulant to both the organizers and prosecutors of the voyages. By way of speculation, we may surmise that the disclosure of finding a great inlet or river disemboguing in a relatively low latitude somewhere between 38° and 40° would be too much to ignore. Otherwise, this coast was already known to some extent late in the sixteenth century, and even though ports were found, none appear to have been used by the Manila Galleons, for on reaching the coast, their captains preferred to continue on their course to Acapulco² with the prevailing winds, arriving in about twenty-five or thirty days.

In any event, adopting Gali's suggestion, Moya abandoned construction of the two vessels he intended for the exploration of the northwest coast and sent Gali back to the Philippines to make the recommended voyage. Unfortunately, Gali died in the Philippines before he could return. Pedro de Unamuno, who was appointed to succeed him could obtain only a small and inadequate vessel, and on October 17, 1587 barely managed to reach the California coast in 35 1/2° latitude, where he landed and then made a partial survey of the coast southward to Acapulco.³ Upon his return, the succeeding Viceroy of Mexico, Marqués de Villamanrique, was unsympathetic with the objectives of the voyage, and the Spanish government in Madrid discontinued further efforts until Luis de Velasco was appointed Viceroy of Mexico in 1590.

Luis de Velasco was the son and namesake of the second Viceroy of Mexico who initiated the Spanish occupation of the Philippines in 1564. Velasco came to Mexico with his father as a child and spent his youth and

-
1. Wagner, Spanish Voyages.....,
 2. This was divulged at some length by the Marques de Montecclaros, Viceroy of Mexico, in a letter to the King, May 24, 1607 and a somewhat similar opinion by the Marqués de Villamanrique, Viceroy of Mexico, in a letter to the King, May 10, 1586. Translations were published by Henry R. Wagner, Spanish Voyages...., p.153 and 277.
 3. A facsimile and a translation of Unamuno's account was published by Wagner, Spanish Voyages.., Chapt.VIII p.481, to 504.

young manhood there. At the time of Drake's entry into the harbor of Guatulco in the Gulf of Tehuantepec, he held the post of Regidor (Prefect) in Mexico City. When word was received of Drake's foray he begged the Viceroy Don Martin Enriquez for permission to pursue and intercept the Englishman, but his request was denied. He accurately predicted that Drake would sail north in search of the strait of which he had often spoken to his Spanish prisoners, and that, failing to find it he would take shelter in a port and prepare his ship and company for the long voyage to the Moluccas and thence home via the Cape of Good Hope.

Velasco's excessive zeal in pressing his opinions and suggestions aroused the displeasure of Martin Enriquez so that he was obliged to leave the country and return to Spain, where he soon gained the favor and patronage of the King, Philip II.

As Viceroy, Velasco at once interested himself in the trade between Mexico and the Philippines and in a letter dated 25 May 1591 expressed his concern about the arduous voyage from the islands and the lack of ports on the northwest coast suitable for making repairs and replenishment of food and water. He further remarked that he would endeavor to have a voyage made south along this coast to obtain knowledge of any such ports if it could be done without undue cost. It was not until 17 January 1594, however, that the voyage was approved by the King.

Like Pedro Moya y Contreras, Velasco was not one to wait for permission to take action as it was during this period that Juan de Fuca according to his account to Michael Lok, an Englishman, made his voyage to the northwest coast in 1592 in the service of Spain. He related that he had sailed in a small caravel from Mexico, along the Mexican and California coasts until he found a broad inlet of the sea between 47° and 48°, which agrees reasonably well with the strait named for him. He spent more than twenty days exploring within the strait. Unfortunately, Juan de Fuca pleaded in vain in Mexico for two years to be rewarded for the discovery of the strait and his "Inland Sea," and subsequently at the Spanish court, where he was well received though not materially benefitted.¹

On October 5, 1593, Velasco acknowledged the receipt of a cedula ordering him to make the voyage he had proposed in his letter of 1591,² but he now informed the King that there was a difficulty due to lack of funds, possibly one reason Juan de Fuca was not given any reward beyond

-
1. Dr. Bernard Berenson, The Controversy of Juan de Fuca's Claim to the Discovery of the Strait Bearing His Name, special publication of the Nautical Research Guild, 1950.
 2. Wagner, Spanish Voyages....., p.154

his ordinary salary as commander of his expedition.

He wrote that there was a man, possibly Cermeño, willing to undertake the task on condition that he be allowed to take along money and trade in the ports that he might discover, but that he was suspicious of his proposal and did not accept the offer as it might lead to great inconveniences. However, he thought that by limiting the amount of money carried and prohibiting trade in any port that might be discovered, something might be negotiated. January 17, 1594, the King ordered the voyage to be made under these limitations.

Whatever the results of Juan de Fuca's unrewarded voyage may have been, aside from the discovery of his strait, Velasco was now committed to proceed with his intentions of 1591. Sebastian Rodriguez Cermeño was appointed to make the voyage and was offered the privilege of carrying certain cargo on the return voyage to earn the freight. Velasco purchased a vessel named the San Pedro for his purpose, and Cermeño accordingly sailed from Acapulco March 21, 1594, as pilot of the ship with orders to the Governor of the Philippines to furnish him with whatever was necessary to further his voyage. For some reason, the San Pedro was not used for the return voyage, and the Philippines Governor made a contract with Pedro Sarmiento, a well known Philippine captain, to furnish the San Agustin, a small vessel of not over 200 tons.

Little is known of Sebastian Rodriguez Cermeño. He was appointed as captain for the voyage on the basis of his professional skill. Luis de Valasco in a letter of recommendation to the King, April 6, 1594, stated that although he was a Portuguese, he was very skilled in navigation, and that, besides, there were no Spaniards in the profession to make the discovery; he probably meant that at that time there were no pilots available in Mexico competent for this particular task. As previously mentioned, he was probably the same man as a Sebastian Rodriguez, a pilot on the Manila Galleon, Santa Ana, when that vessel was captured by Thomas Cavendish in 1587 and may have been the same Captain Sebastian Rodriguez named in the court records in Manila in 1625. Cermeño's real name was Rodriguez, the former no doubt being his mother's name, sometimes spelled Sermeño or Zermeño.¹ The modern spelling, Cermeño, has been in long use, however, and is therefore employed throughout this paper.

July 5, 1595, the San Agustin sailed from Manila with Cermeño as Captain and Chief Pilot with 130 tons of cargo, some passengers, and a

1. Wagner, Spanish Voyages....., p.368.

small company of soldiers to accompany the exploration.¹ Not least important in her burden was a launch carried in sections that was to be assembled on the North American Coast at the first opportunity for use in reconnoitering the shores at close range. The voyage was delayed a few days enroute by an enforced stop at the island of Mindoro to careen the ship and recaulk leaking seams, but otherwise proceeded resolutely eastward. August 13th, a gale from the north with a beam sea was encountered which obliged Cermeño to jettison some of his deck cargo. Cermeño's orders apparently required him to begin his exploration in the latitude of 42 near Cape Mendocino, as once reaching that latitude he apparently made no attempt to gain more northing. He stated in his own account that he had complied in every respect with his orders and instructions from the king.

Cermeño reached latitude 42^o north late in October and on October 29th, in full 42^o, with a favorable wind, cloudy weather and calm sea he proceeded cautiously toward the coast he now sensed to be near, striking sail at night, and continually casting the lead. Saturday morning, November 4th, 1595, land appeared and by evening of that day he was within a half league of the shore somewhere between Point St. George and Trinidad Head.

Cermeño coasted down to Drakes Bay in a relatively short time, due in part to being driven before a northwest gale, and came to anchor there November 6th. It is ironic that in this bay discovered by Francis Drake, the San Agustin was driven ashore by a late November storm - a total loss - on the same beach on which Drake had encamped. By good fortune, the launch that had been brought out from the Philippines was nearly completed at the time of the disaster and the entire company was able to embark in her and continue on to Mexico where they landed at Puerta de Chacala January 17th, 1596. In spite of the difficulty imposed by the loss of the ship, Cermeño attempted to fulfill the object of the voyage, but it was almost hopeless due to the hardships suffered by his people for lack of sufficient food and the overloading of the launch. Long before reaching Mexico, the effort was given over to reaching civilization as quickly as possible. Cermeño's failure to definitively explore the entire coast was a great disappointment to Luis de Velasco and the officials in Mexico; it was felt that he had necessarily seen very little of the coast because he

1. A summary of Cermeño's account of the voyage to the California coast and a facsimile and translation of the Declaracions made by Cermeño to his scrivener, Pedro de Lugo were published by Wagner in Spanish Voyages, Chapter. IX and p. 505 to 531 inc.

had coasted from point to point in the launch and had not explored the coasts and bays in order to relieve the hardships on his people.

Had Cermeño's voyage proceeded as planned with the launch concentrating on exploration close inshore, it is highly probable that the Golden Gate would have been found while the San Agustin stood off. The course of history might have been vastly different if San Francisco Bay had been discovered one hundred and seventy-four years earlier than the Portola expedition of 1769. Unlike the people on that expedition, who discovered it from the land on a different mission, the men of the sixteenth century were in an exploring mood and had long been conditioned to finding such a waterway as this. Also, there was a longstanding element of "gold fever" in the New World, and at this time particularly, tales were current of rich cities and mines yet to be found north of Mexico. As it turned out, Cermeño crossed the Gulf of the Farallones from Point Reyes to Point Año Nuevo,without discovering in all this distance anything worth noting down.

On November 26, 1597, Velasco's successor, the Conde de Monterey, again broached the subject of a voyage to the King, stating that the object sought by Cermeño's expedition was still of great importance and recommending that the voyage commence from Mexico.¹ Again, there were many delays, and after the order to proceed was finally given in 1599, it was not until May 5, 1602, that the expedition under Sebastian Vizcaino got under way from Acapulco to continue the exploration of the northwest coast. In a letter written May 31, 1602, the Conde de Monterey, as his predecessors, hoped for the discovery of some good port where the ships from China (Philippine Islands) could find relief, and like Moya y Contreras seventeen years before, he wrote that he had an expectation of other news of importance from the voyage.² This other news of importance was presumably in respect to the legendary City of Quivira which Father de la Ascension disclosed afterwards was the real objective of the voyage.

Vizcaino crossed the Gulf of the Farallones in January of 1603 and apparently took note of the coast but either failed to attach any importance to the opening in the coast range that is the Golden Gate or failed to see anything of it at all. He put into Drakes Bay January 8th, coming to anchor in the southwest corner of the bay, and departed the following day without making a landing. On returning from Cape Mendocino he ran along the coast again to see what might have been missed. Father de la

1. Wagner, Spanish Voyages, p. 168.

2. Wagner, Spanish Voyages, p. 176.

Ascension stated optimistically that ...as the wind was northwest and astern the voyage was made with ease and without difficulty, so that there was not an inch of the country along all that coast, so to speak, which was not seen and well inspected. ¹

Under both of the above circumstances, fog cannot be blamed for failure to see the Golden Gate; there is no mention of it. With a north-west wind, the weather on this coast is normally clear. In the derrotero, or coast pilot, prepared by Vizcaino's pilot, Francisco Bolaños, and Father de la Ascension, the coast is described from Point Reyes to Point Ano Nuevo: From the Punta de los Reyes about fourteen leagues south-east a quarter south there is a point. Before reaching it the country consists in places of sierra, bare to the sea and of medium height with some cliffs, but soon the country inside becomes massive and wooded until you reach a point of low land in 37 1/2° named the Punta de Año Nuevo. ² The failure to notice the Golden Gate can be explained by the fact that both expeditions crossed the Gulf of the Farallones in such a manner that the innermost part of the gulf was between twelve and twenty or more miles distance from them. If the Golden Gate was not obscured by haze, its water surface, at least, was well below the horizon due to the curvature of the earth, as even at mast-head height from Vizcaino's ship, the distance of visibility to the horizon is about nine miles; much less from Cermeño's launch. ³ Also, the mile wide gap in the coastal range of hills and mountains that is the entrance to San Francisco Bay appears relatively insignificant at this distance.

With Vizcaino's voyage, exploration of this coast came to an end until Spain was confronted with Russian intrusion from the north in the latter part of the 18th century. The much sought for ports were discovered but apparently never used until late in the 18th century. Morena's strait, which may have had much to do with inspiring these voyages, would have to wait for rediscovery from the land side.

A fitting memorial to these intrepid voyagers to this coast is provided in the words of Fr. de la Ascension, who writes of Vizcaino's voyage but has some word for the others as well: With what I have related in this account and discourse, it seems to me that I have made the valor and spirit of our Spaniards understood, especially of those who went on this

1. Translation of Father de la Ascension's account of the voyage of Sebastian Vizcaino. Wagner, Spanish Voyages..., Chapter XI, p. 180.
2. Bolaños-Ascension Derrotero. Wagner, Spanish Voyages..., Appendix VII.
3. Table 8, Distance of Visibility of Objects at Sea. American Practical Navigator. Bowditch, H.O. No. 9.

expedition, as they accomplished with much labor and fatigue an enterprise so difficult that, of the five or six times in which it has been tried, none had accomplished it until on this occasion, nor even the half of it, although it seemed to those who had attempted it that they had done all that the Spanish nation could humanly do. Those who went on this expedition can very well be proud of their accomplishment.....

All of the Cermeño expedition accounts used in this study are from the translations of Henry R. Wagner which were published either in his article, The Voyage to California of Sebastian Rodriguez Cermeño in 1595¹ or in his book, Spanish Voyages to the Northwest Coast of America in the Sixteenth Century,² under the auspices of the California Historical Society. All of the documents used by Wagner were found in the archives of Seville. Unfortunately, the details concerning the loss of the San Agustin do not appear to have been sent to Spain. It is certain, however, that some testimony was taken, both at the time of the wreck by the King's scrivener and at an inquiry convened upon the return of the expedition to Mexico. The two Declaracions in the Archives made by the scrivener are copies, wherein it was a simple matter to leave out the account of the wreck. Cermeño's own account, of which there are two original copies not in his handwriting but signed by him, also omits a deposition on the loss of the ship.

The reason for not including information concerning the loss of the San Agustin can only be conjectured, but the most compelling apparent reason was that the wreck represented salvage potential. The possibility that this was the case is suggested in Father de la Ascension's account of the Vizcaino expedition in which he wrote that Vizcaino had put into Drakes Bay to see if he could find any trace of the San Agustin and a quantity of wax and silks that had been left on shore. In this light there may have been deliberate intent on the part of persons having a vested interest in the ship and goods to keep the true nature of the loss from becoming known to others who might attempt to salvage the wreck.

-
1. Published in the California Historical Society Quarterly, Vol. III, 1924.
 2. Published by the California Historical Society, 1929.

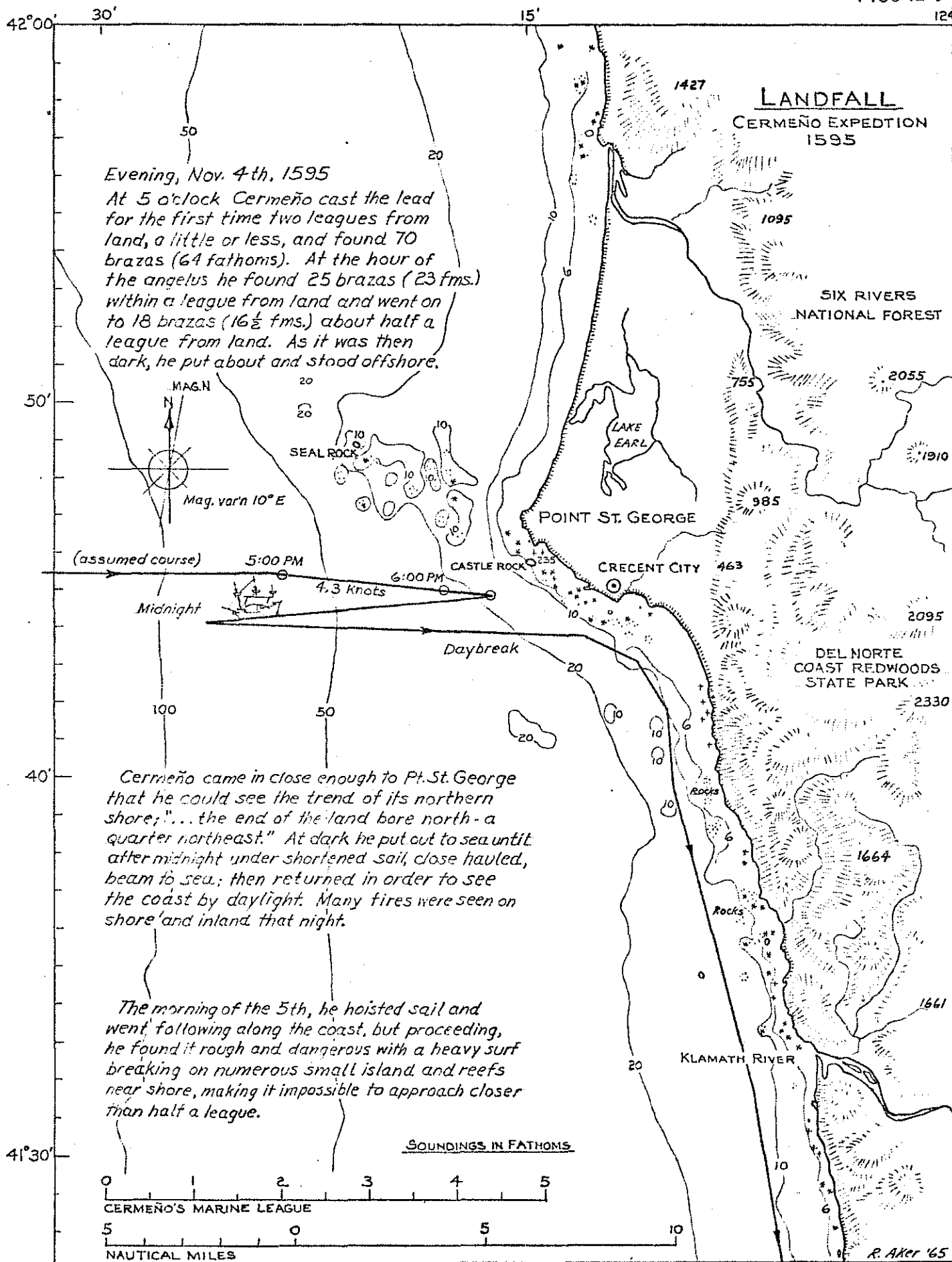
DISCOVERY OF DRAKES BAY

On a Saturday morning, November 4, 1595, Cermeño sighted California, or New Spain as he called it, where the coast trended north-south and where the end of the land bore north a quarter northeast in the latitude of 42° , the highest latitude reached.¹ If we make allowance for his observed latitudes being generally too high, it is evident that he made his landfall between Point St. George and Trinidad Head, which agrees well with his supplementary descriptions of the shore;² The land which appeared was between two capes, about twenty leagues apart.³ From the western part the coast trends north a quarter northeast. . . It was the hour of the angelus when we came within a league of the land, which appeared to be mountainous and heavily forested with trees which could not be distinguished. Among them were many pine trees growing very thickly near the sea and inland,⁴ which were made out as we went coasting along near the shore to see where there might possibly be found conveniences and a safe port in which to enter and make the launch with which to prosecute the reconnaissance. Many fires were seen that night on the coast and inland.⁵

The land which appeared that morning, perhaps at sunrise, would have been the exceptionally high, mountainous country near the coast between Point St. George and Trinidad Head with numerous elevations of 4,000 to 5,000 feet and over. In clear weather these mountains can be seen for at least sixty miles at sea and this would account for the information that, although Cermeño went approaching the land as much as he could that day, he barely succeeded in reaching it that night.

A plot of Cermeño's soundings, coupled with the fact that he was able to note the trend of what he called the western part of the coast, indicates with certainty that he approached just under the south side of Point St. George and may have been attempting to anchor inside the point before dark. At this time of the year, the sun sets a little before five o'clock and evening twilight ends at about six-thirty. At five o'clock he began sounding and found 70 fathoms,⁶ two leagues more or less from land; he could not have been much closer than $6\frac{1}{2}$ nautical miles. At the hour of the angelus, six o'clock, he found 25 fathoms and would have been about $2\frac{1}{2}$

-
1. Details from the Declaracion. See Appendix II.
 2. Details from Cermeño's account. See Appendix I.
 3. The distance between Point St. George and Trinidad Head is about 44 miles. His estimate of the distance was close; his league measured 2.3 miles.
 4. The Del Norte Coast Redwoods and Prairie Creek Redwoods.
 5. Indian settlements at the mouth of the Klamath River and other points on the coast.
 6. The soundings are in the Spanish fathom, or braza, equal to 5.492 U.S. ft.



miles offshore, southwest of the point; he said that he was within a league from the land. With the little remaining light he went on to 18 fathoms, about 1 1/2 miles from shore or about half a league, according to the Declaracion. As it was then dark, he prudently decided to stand offshore closehauled, beam to sea, under minimum sail until after midnight and then reverse his course to close with the land again in the morning. The wind was probably from the north or north-northwest.

On returning to land, Cermeño probably came in near the present Del Norte Coast Redwoods State Park, where he identified the redwoods here and southward as pines growing very thickly near the sea and inland. Following along the coast from here, he encountered the numerous outlying rocks north of the Klamath River which caused him to describe the coast as very rough and dangerous, as there was a heavy surf breaking on numerous small islands and reefs near the shore, . . . These forced him to run about half a league, or somewhat over a mile offshore with two men posted in the tops on lookout for reefs ahead.

In the afternoon a reef was discovered about a league at sea corresponding to Blunts Reef, lying 2 3/4 miles offshore, and the cape inside was identified by Cermeño as Cape Mendocino, the name it bears today. Late in the day, after rounding the reef and closing with the land again, a point with two small islands outside of it was discovered which was unmistakably Point Delgada. The small cove under the south side, Shelter Cove, seemed to make a port, but while attempting to enter this, some dangerous rocks were seen where the ship would come to anchor. The lookouts shouted a warning from the tops, and Cermeño was fortunately able to bear away and run out again, but it was doubtlessly a close call as the pilot, master, and boatswain were terrorized by the danger.

The distance sailed this day to Point Delgada shows a remarkably good run, about 110 nautical miles in probably no more than 12 hours for an average of 9.2 knots. After rounding Cape Mendocino, Cermeño wrote that he was following along with all sail set so as by daylight to see if a port could be discovered and reached in which to enter. It is likely that by that time he was sailing at better than 10 knots with a brisk afternoon wind behind him.

Cermeño continued coasting while daylight lasted, but when night came on, he stood off to sea away from land, no doubt intending to sail directly offshore under shortened sail for half the night and then return in the morning to resume the exploration where it was left off. However, while sailing thus, a heavy wind and sea from the northwest

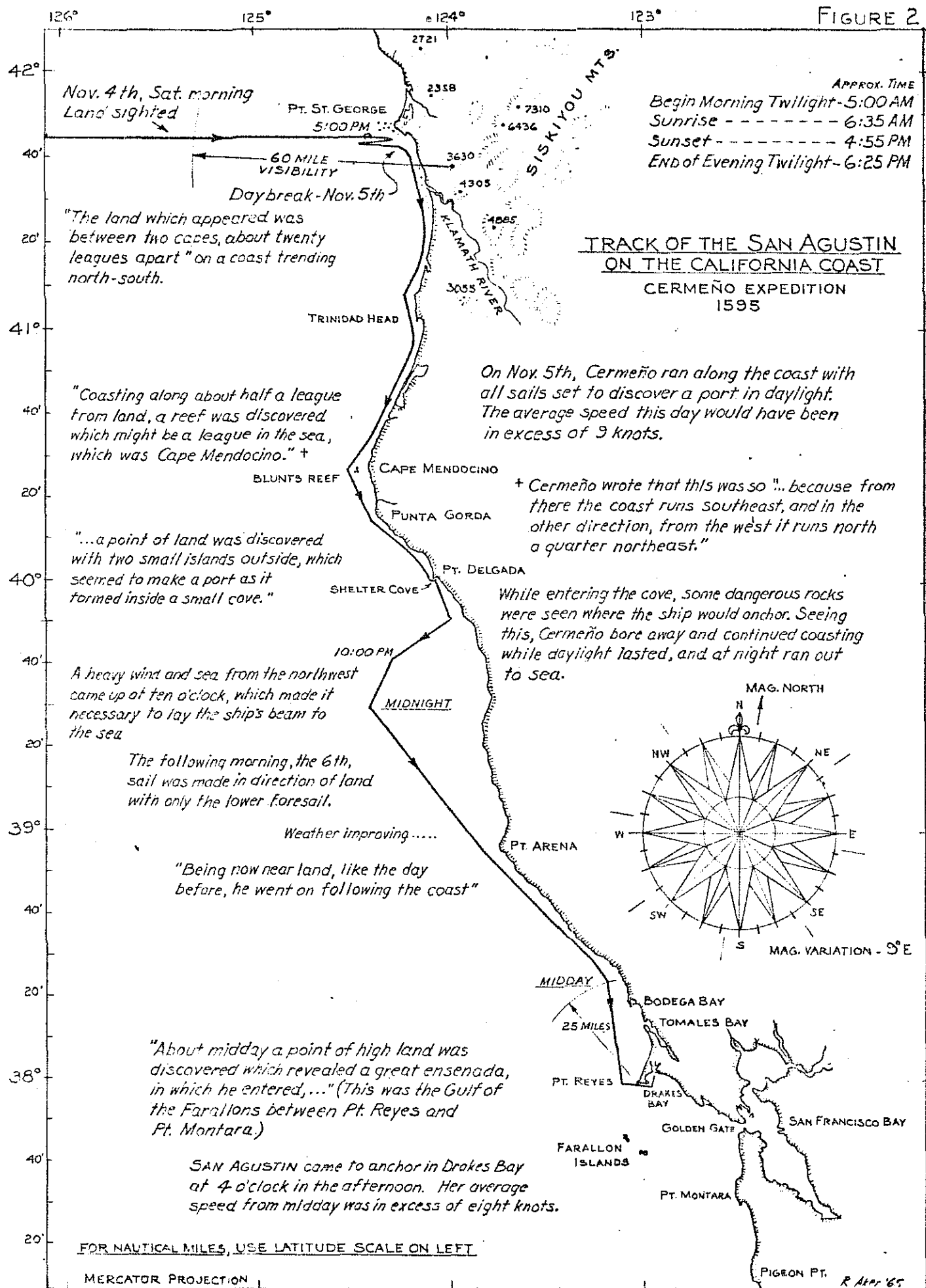
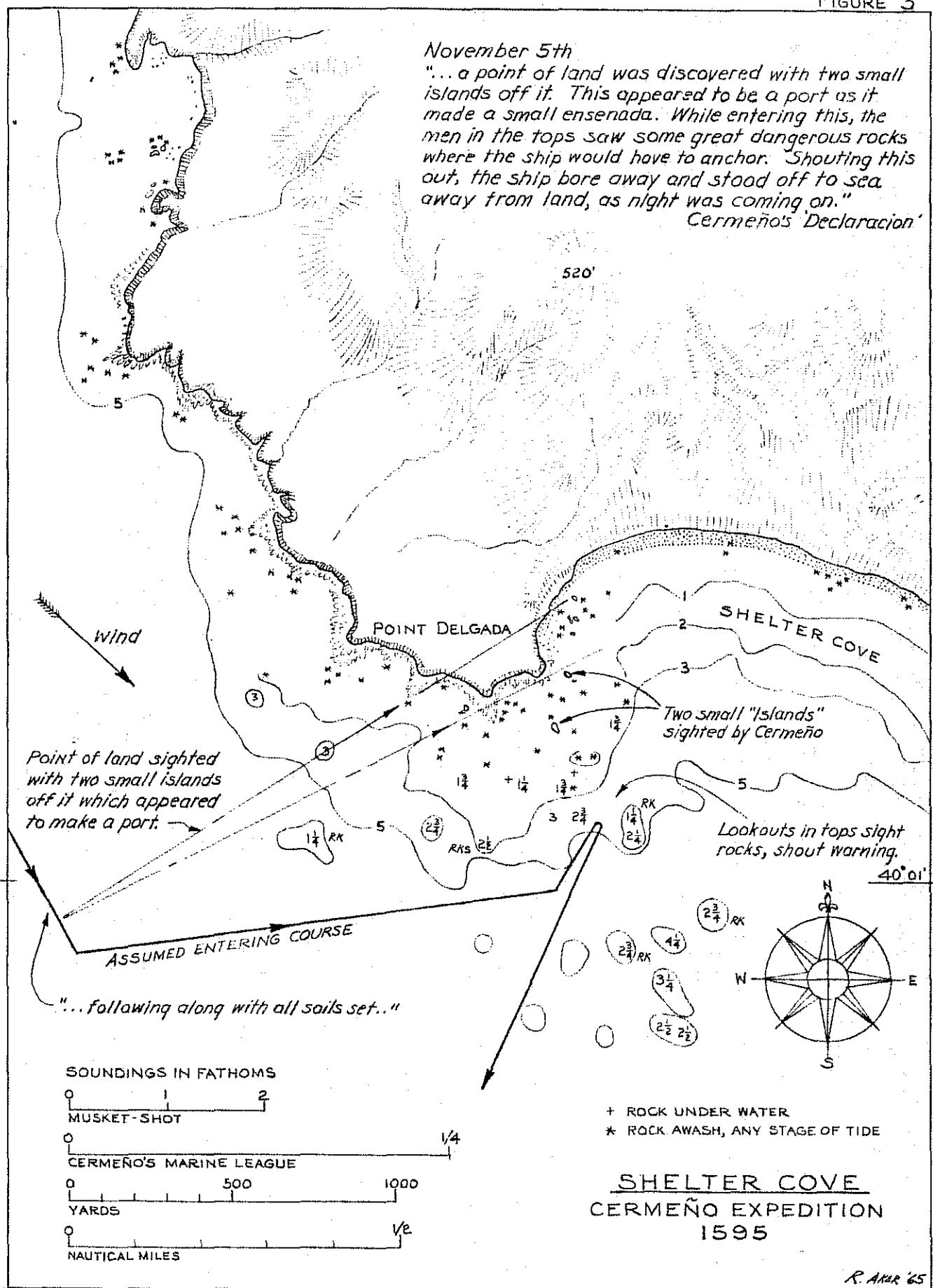


FIGURE 3

November 5th
 "... a point of land was discovered with two small islands off it. This appeared to be a port as it made a small enserada. While entering this, the men in the tops saw some great dangerous rocks where the ship would have to anchor. Shouting this out, the ship bore away and stood off to sea away from land, as night was coming on."
 Cermeño's 'Declaracion'

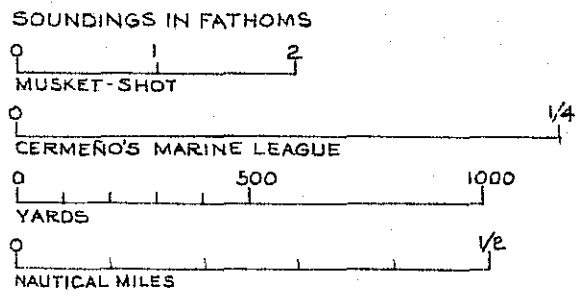


Point of land sighted with two small islands off it which appeared to make a port.

Two small "Islands" sighted by Cermeño

Lookouts in tops sight rocks, shout warning.

"... following along with all sails set..."



- + ROCK UNDER WATER
- * ROCK AWASH, ANY STAGE OF TIDE

SHELTER COVE
 CERMEÑO EXPEDITION
 1595

Ref Chart C.&G.S. 5773 (Shelter Cove)

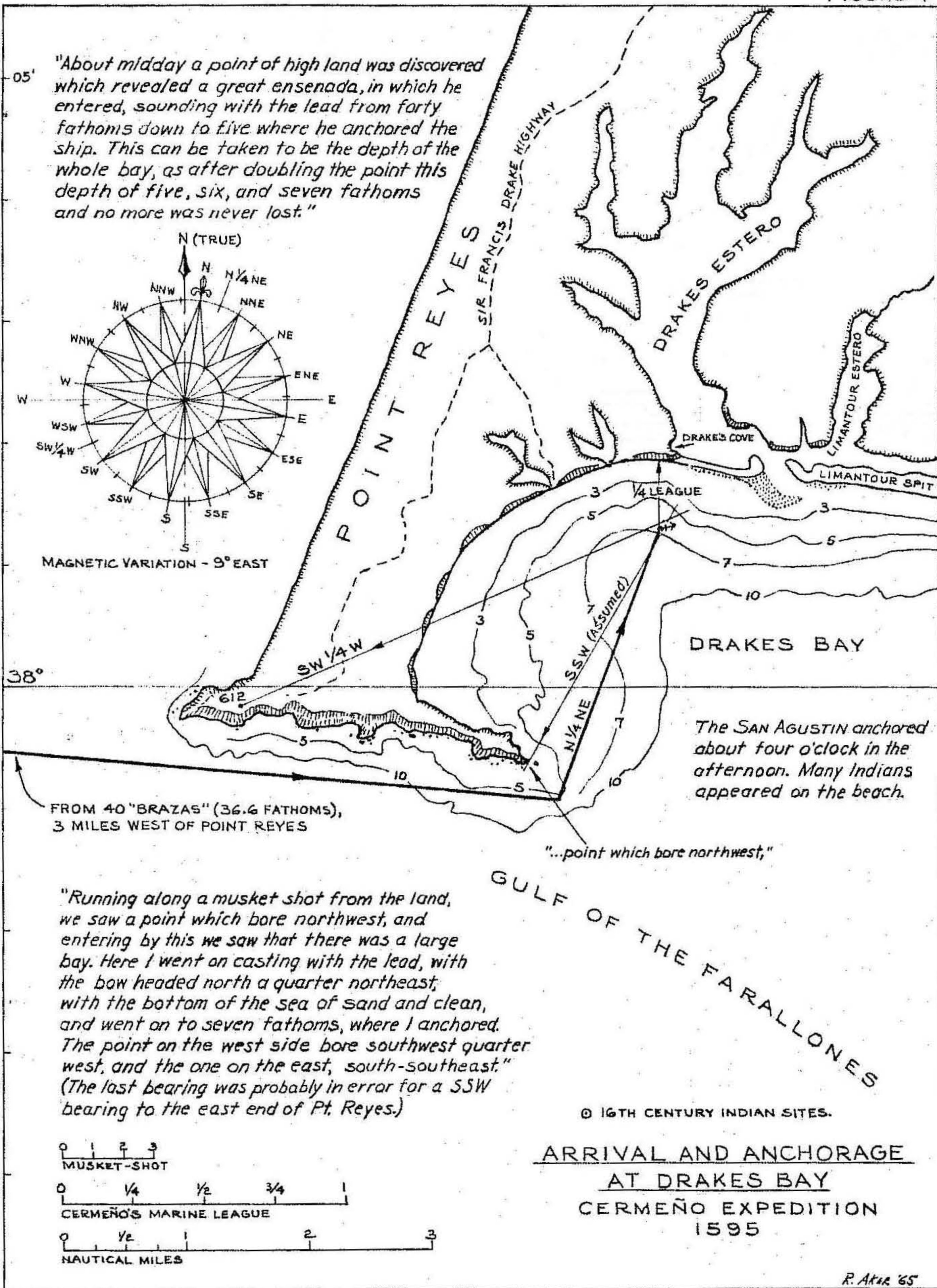
came up at ten o'clock, which made it necessary to lay the ship's beam to the sea, that is, to lie to, or a-hull with all sail taken in and the helm lashed a-lee. In this situation, the heavy, gale driven seas evidently caused the San Agustin to labor, or roll, so excessively that it was considered no greater storm had been encountered on the whole voyage, and it was reported that both men and ship suffered greatly.

At midnight the gale increased and sometime early in the morning of the 6th, Cermeño made sail to scud in direction of land, setting only the foresail without its bonnet. Apparently, in view of the great danger that he appeared to incur by this, he was petitioned by his officers with a written demand to forego the mission of discovery and run with the wind for Acapulco, as the ship was small, in a battered state, and with her seams so nearly open that it was necessary to devote two out of three watches at the pump. Notwithstanding, he continued to approach the land and the weather improved.

Cermeño must have closed with the coast somewhat below Point Arena, as there is no indication that he had sighted it, and he continued following the shore as he had done the day before, probably within half a league offshore. Being near the land, he ordered some of his men to the tops to keep a lookout ahead. About midday they discovered Point Reyes, a bold, dark, rocky headland, nearly 600 feet high extending eleven miles to sea.¹ With the wind in the northwest and the weather improving, it was probably seen from a distance of twenty-five miles, more or less, as under these conditions visibility is generally good.

After sighting Point Reyes, it seems likely that Cermeño took the precaution to change his course away from land so as to pass well outside of the point and avoid the risk of becoming embayed on the leeshore within. Abreast of the point, the Gulf of the Farallones was revealed to him as a great ensenada, which he proceeded to enter.² On standing in, he commenced sounding in forty fathoms,³ about 3 miles from the point. His distance offshore may account for the lack of a description of Bodega Bay or Tomales

-
1. Cermeño describes this in his account: . . . we kept getting near the land, and having reached it, a morro was discovered, which makes a high land and seemed like the Punta del Brazil of Tercera.
 2. In the Declaracion: . . . About midday a point of high land was discovered which revealed a great ensenada, in which he entered, sounding with the lead from forty fathoms down to five where he anchored the ship. (Cermeño stated that he anchored in seven fathoms, which is verified in the Declaracion by the fact that his soundings on entering Drakes Bay begin with five and go on to seven fathoms.)
 3. Sounding in brazas; equals 36.6 U.S. fathoms.



Bay or any indication that either had been seen.

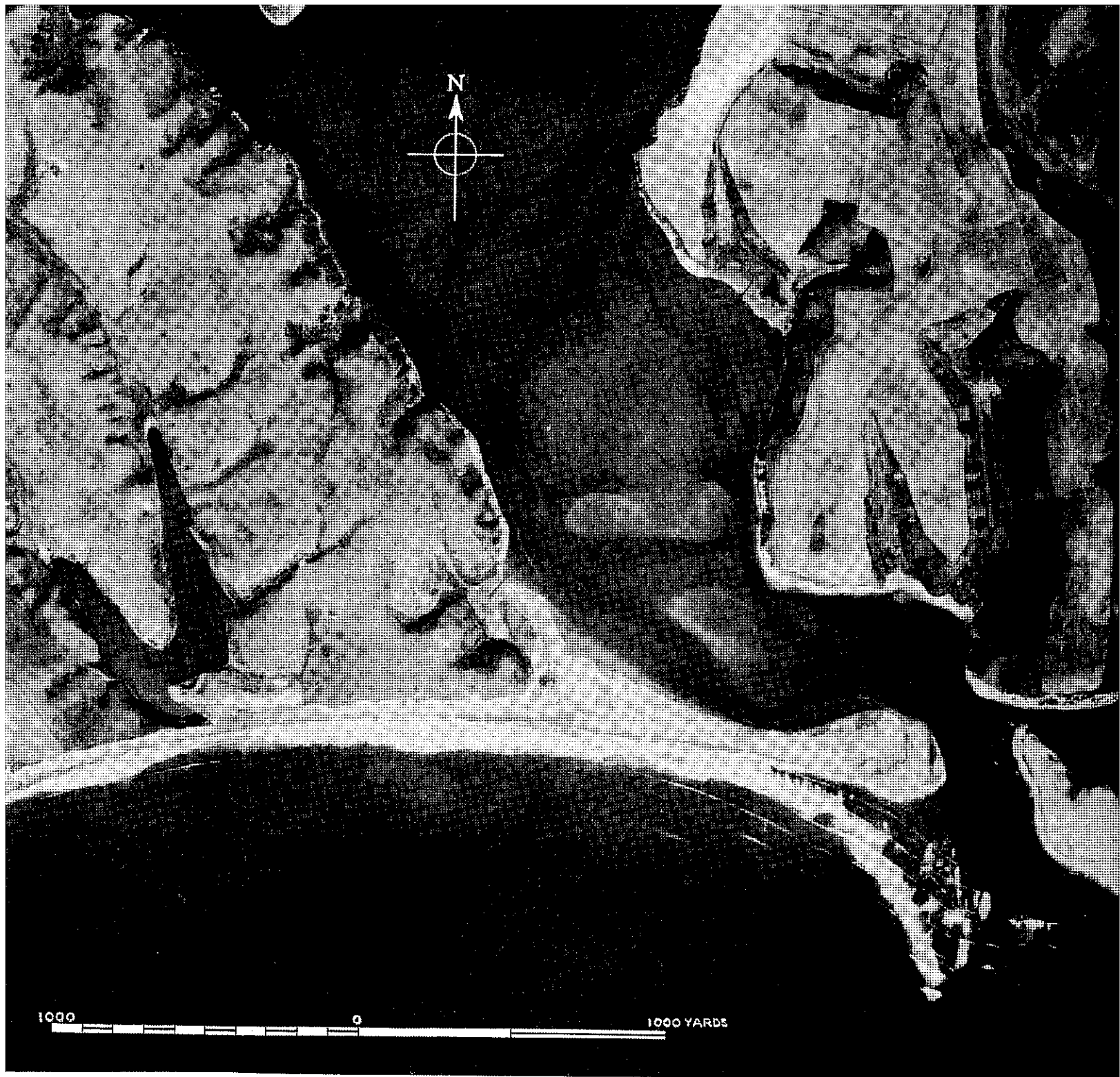
Observing no outlying reefs or rocks awash and finding good, deep soundings right up to the point, Cermeño may have been encouraged to take full advantage of its lee from the northwest wind as he continued running along under sail only a "musket-shot" distance, a scant five hundred yards, off the three mile long east-west tip of Point Reyes. When the eastern end of the point bore northwest from him, he headed up into Drakes Bay on a long tack, thus doubling the point and bringing the southwest corner of Drakes Bay to view,¹ stating in his account:.... entering by this we saw that there was a large bay.

Cermeño wasted little time entering Drakes Bay. His soundings on entering commence with five fathoms, showing that he was scarcely more than five hundred yards from the east point. His declaracion states:.... as after doubling this point this depth of five, six, and seven fathoms and no more was never lost. He apparently paid only passing attention to the bay to his left after doubling the point as he wrote in his account:.... Here I went on casting with the lead, with the bow headed north a quarter northeast, with the bottom of the sea of sand and clean, and went on to seven fathoms, where I anchored. What may have interested Cermeño more than the bay inside the east point was the prospect that Drakes Estero might afford him a harbor or port; he was heading directly for it. According to Cermeño's Declaracion, the San Agustin came to anchor about four o'clock in the afternoon. The entering course places her anchorage close by the mouth of Drakes Estero.

It is interesting in passing to run Cermeño's time and distance back from his anchorage to the time he sighted Point Reyes and thus obtain some idea of the San Agustin's speed. With a distance run by this means of approximately 34 nautical miles in about four hours, she was making somewhat better than eight knots, complimenting very nicely Cermeño's statement that he was "running" along the south end of Point Reyes. Even though the weather had moderated, the northwest wind was evidently still quite strong.

Cermeño's description of Drakes Bay seems meagre though most sailing directions or coast pilots would give scarcely more detail today. No mention is made of the white cliffs bordering Drakes Bay, possibly a conscious intention to give no identification with the bay discovered by Francis Drake, who was inspired by these distinguishing landmarks, so like those of his homeland, to name the country Nova Albion. Notice was taken of the bareness

1. Sometimes called Jack's Bay.



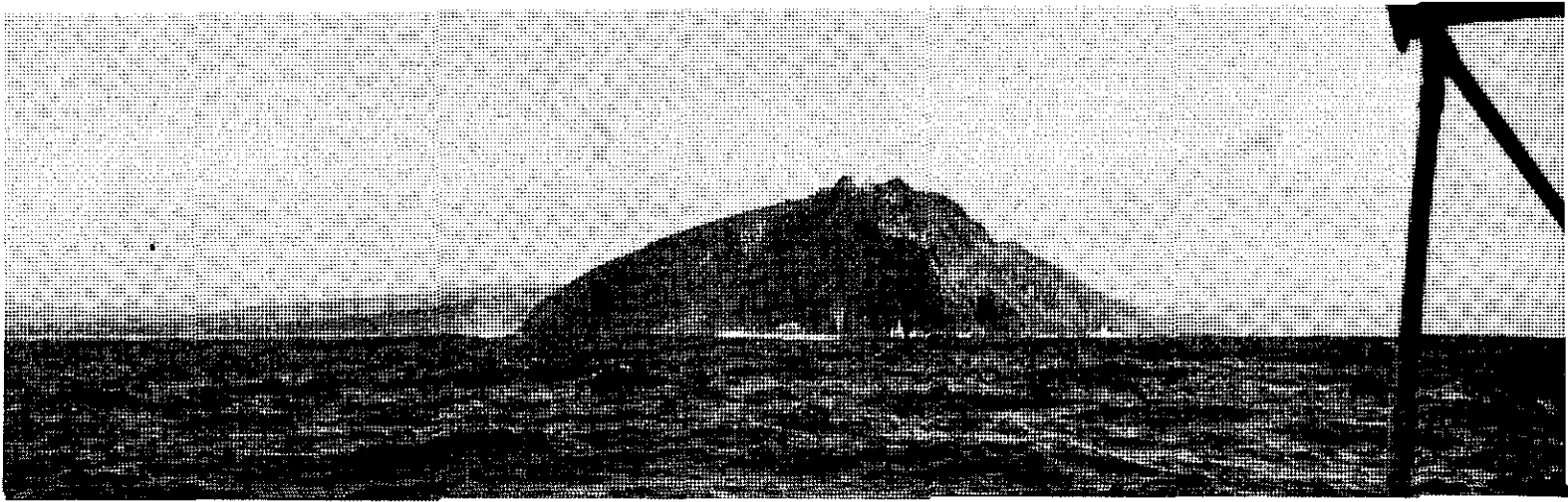
U. S. Department of Agriculture

ENTRANCE TO DRAKES ESTERO
AIR PHOTO, 1943



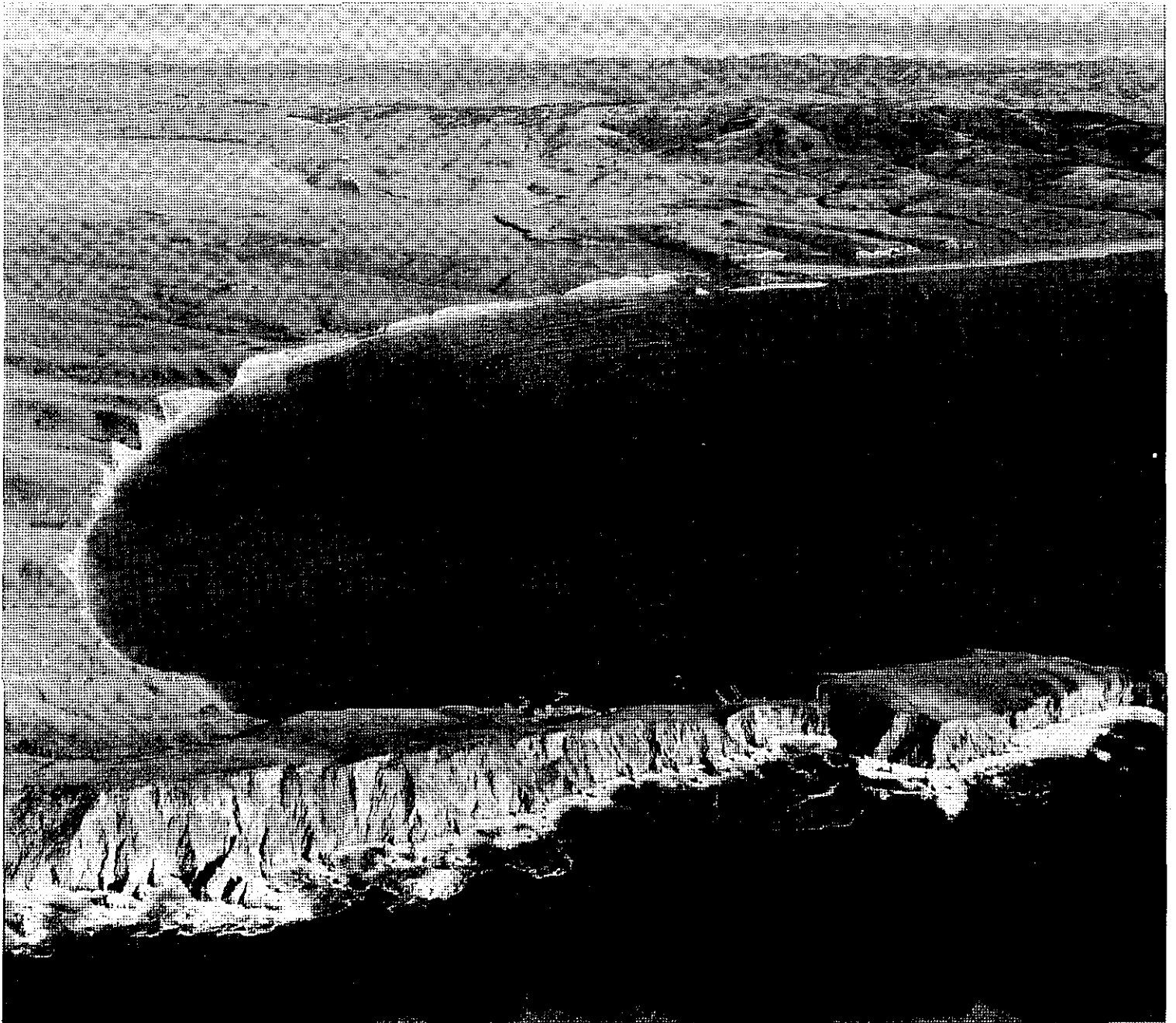
AERO Photographers

DRAKES BAY



Robert W. Parkinson

POINT REYES



AERO Photographers

*POINT REYES, EAST END
DRAKES ESTERO IN DISTANCE*

of the Point Reyes peninsula, however. The size and shape of the bay was noted by Cermeño as being very large and shaped like a horseshoe. Particular attention was given to the esteros entering Drakes Bay, or "rivers" as they are called in the accounts. These, particularly Drakes Estero, would have had special interest to Cermeño for several reasons. One primarily, that it might make a harbor suitable for careening and repairing ships in the Philippine trade, another that it would provide a convenient place in which to build his launch, and finally, as a source of fresh water for his own and other ships.

Drakes Estero is described in the Declaracion as one of three which enter into the bay and port. The identity of the other two rivers may be debated, but it seems most certain that these were the outlets of the lagoons west of Drakes Estero as these were easily discerned from the ship at anchor. The streams which enter the bay east of the estero were not discovered until much later and are a relatively great distance from the San Agustin's anchorage, the nearest of which would have been three miles and was described as one which ran into the sea. The westernmost lagoon at the County Beach is now so silted that it hasn't sufficient tidal prism to maintain a channel across the beach, but the one adjacent to Drakes Estero, now impounded, was open in 1942 and probably little changed since Cermeño saw it.

Cermeño described Drakes Estero briefly but unmistakably, and as a pilot he took particular notice of the entrance and a source of fresh water for the convenience of future navigators: The Bay is very large and shaped like a horseshoe, and a river runs into it, and on the bar at high tide there are three fathoms of water, and from the bar outside to the entrance of the anchorage there is a distance of two shots of an harquebus...The river above referred to enters the land three leagues and has a narrow mouth, while above it in some parts it is a league in width, and in others a half a league. On the west side it has two branches of half a league each, and on the east side one, the entrance of which is a matter of a quarter of a league from the bar. Entering by this one, you will find fresh water on the right side, which comes from another river with a plentiful supply of water, and where this falls in there are Indians settled.

The appearance of the bar and spits outside of Drakes Estero at the time Cermeño saw them is a matter of conjecture since the entrance is formed in an unstable formation of shifting sand. At times it changes rapidly and at other times it holds its configuration for a relatively long period of time. At the time Drake entered the estero sixteen years earlier than Cermeño, the entrance was largely open with a short spit and an

island projecting from the west side. By chance, this configuration existed in 1953 when the Drake Navigators Guild was beginning its research on Drake's landing site. Ten years prior to the date, the spit from the west side extended completely across Drakes Estero, and the entrance opened midway between Drakes Estero and Limantour Estero. In the years following 1953, the entrance channel progressively worked westward until small vessels entering the estero had to first approach quite close to the cliffs on the west side of Drakes Estero and then head eastward inside the bar which crossed the mouth of the estero. The bar has been observed to be building up and may be expected to eventually form a long spit extending once more from the west side of Drakes Estero as it was prior to 1953.

For several reasons, it seems very probable that Cermeño found Drakes Estero at a time when a long spit extended from the west side across the mouth as shown in a 1942 air photo and charts of about this date or before. In the Bolaños-Ascension Derrotero, made in the course of the Vizcaino expedition, we have positive evidence that in January of 1603 the entrance opened between Drakes Estero and Limantour Estero:On the northeast side (Drakes Bay) there are three white cliffs very near the sea, and in front of the one in the middle an estero enters with a very good mouth without breakers. On going in this, you will soon encounter friendly Indians, and can easily find fresh water. Thus in the twenty-four years between Drake and Vizcaino, the entrance shifted from the west side to the east side of the estero, and the long spit from the west side had reformed.

Vizcaino was only in Drakes Bay one day and out the next. He had anchored in the southwest corner of the bay and since he did not land, he could only have seen Drakes Estero from that distance. Bolaños, however, had been a sailor on Cermeño's expedition and consequently was able to draw upon the knowledge of his former experience in Drakes Bay when he made the above description, though there is no way of knowing if he had taken into account any shift in the entrance. Still, there is a fair chance that it had changed little from the time he first saw it with Cermeño. When the entrance channel is located in this eastern-most position, it tends to remain fixed for a long period of time. This is because a bight or bend formed between the middle cliff and the one adjacent to Drakes Estero makes a fixed channel that continuously concentrates and directs the outflowing ebb tide through a single point in the outer beach. The tidal prism of the esteros is capable of making a hard flowing current of large volume, and this channel persists until the west spit is cut down and forced inward by the sea, from the outer

bay, thus forming new inlets and new deflection points within the estero to reposition the entry channel.

Two conditions in the Cermeño accounts lend weight to the chance that the entrance was on the east side when Cermeño saw it. The first is contained in his own account in which he mentions an "entrance to the anchorage." It is a faint clue, but when the entrance is on the east side there is a very distinct division between the outer bay and the estero, or the anchorage, with a definite entrance through the beach. The 1942 air photo dramatically demonstrates the intent of Cermeño's description, as well as that of Bolaños. The bar which normally builds up at the mouth of this channel is found at almost exactly the distance outside the estero as was described; two shots of an harquebus or nearly a thousand feet.¹ The photo clearly shows the mouth without breakers and the bar and shoal mentioned in the Cermeño accounts, in conjunction with the entrance between the sand spits. The anchorage or anchoring place refers to the waterways within the estero protected by the outer beaches. In many ports of Europe located at the mouths of estuaries or rivers, it was a common practice for ships to anchor in deep-water channels such as those found in Drakes Estero. Channels are often deeper than the water over the bars outside.

The second condition mentioned in the accounts is that Cermeño's camp was located somewhere on the east beach, a location favored more by an eastern channel than one on the west side as has existed in recent years. In the latter case he would have been more inclined to set up his launch on the west side of Drakes Estero where it would have been convenient to his anchorage. In the former case, his supply route with the ship's boat was about the same distance, whether the construction camp was on the east or west side, but the east side was favored with a good water supply and a dry, level building site.

On the day that the San Agustin arrived in Drakes Bay, many Indians appeared on the beach. Cermeño's accounts give a good description of the Indians of the Drakes Bay area, and the archeological field work of the University of California and others in past years has located many Indian middens that can be dated to the Drake-Cermeño period.² In recent years

-
1. Cermeño's Declaracion adds some detail worth noting here; . . . This one makes a bar on which at high tide there were about three fathoms of water, and from the shoal outside to the anchoring place the distance is two harquebus-shots.
 2. R.F.Heizer, Archaeological Evidences of Sebastian Rodriguez Cermeño's California Visit in 1595 , C. W. Meighan and R. F. Heizer, Archaeological Exploration of Sixteenth-century. . . .

the field work carried out by the Drake Navigators Guild and the Community Service Program of the Santa Rosa Junior College under the direction of the Guild¹ has located more sites identifiable with this period and important to the Cermeño story. It is now possible to reasonably identify all of the Indian settlements described in the Cermeño accounts. These are shown on a correlation map, Figure 15.

The Indians seen by Cermeño on the afternoon of his arrival were probably gathered on the shore opposite the San Agustin's anchorage at the west side of Drakes Estero. They were close enough for one of them, who was described by Cermeño as one of those living on the beach, to be seen getting into a reed canoe² to come out to the ship. He may possibly have been living in the vicinity of the Indian midden dating to the Drake-Cermeño period designated DNG4³ which is located on the outer shore of the first lagoon west of Drakes Estero. Close by, is another Indian site of this period located about 400 yards north of the west head of Drakes Estero designated MRN 233⁴ and about 1,000 yards farther on, another designated MRN 235⁵. The gathering of curious onlookers that day probably came from these sites.

According to Cermeño, the Indian in the canoe came alongside the ship, where he remained a good while, talking in his language without anyone understanding what he was saying. Being addressed with kind words, he came closer to the ship, and there we gave him such things as pieces of silk and cotton and other trifles which the ship carried,⁶ and with which

-
1. Edward P. Von der Porten, Drakes Bay Shell Mound Archaeology, 1951-1962.
 2. Cermeño described this as a small boat made of grass which looks like the bullrushes of the lake of Mexico. The Indian was seated in the middle of this, and he had in his hand an oar with two blades with which he rowed with great swiftness. The Declaracion adds that it was like a cacate of the Lake of Mexico.
 3. Von der Porten, Drakes Bay Shell Mound Archaeology..., pp.45-47.
 4. Ibid., pp. 21-22.
 5. Ibid., pp. 25-29.
 6. The Declaracion stated that ... some cotton cloth and silk things were given him and a red cap.

he returned to shore very contented. The next day, the 7th, four other Indians came out to the ship in the same kind of boats. They came aboard and did the same as the first one.¹

Cermeño's greeting was somewhat similar to that accorded to Drake with the exception that there was an absence of the great fear and reserve exhibited on that occasion. In the case of Drake's arrival, probably also late in the day, the Indians did not show themselves until the next day, when they then sent a man off to the ship with what is described as great expedition.² At a reasonable distance from the ship, he also made a lengthy oration. However, in contrast to Cermeño's visitor, he returned to shore upon completing this, returned a second time and made another oration, returned again to shore and then came out a third time. After speaking this time he delivered a gift or offering, which he cast into the ship's boat which was probably in the water alongside Drake's ship. Unlike Cermeño's visitor, who readily accepted the gifts proffered to him, Drake's remained at a distance and declined all gifts save a hat that had been cast into the water from the ship. Cermeño's came close alongside, accepted everything offered to him and returned to shore contented.

-
1. From the Declaracion: Early the next morning the 7th, four other crafts like the first came out from land to the ship, and in each one was an Indian. They came alongside where they remained sometime talking in their language. Captain Sebastian Rodriguez gave each of them some cotton cloth and taffetas and entertained them the best he could.
 2. The World Encompassed by Sir Francis Drake

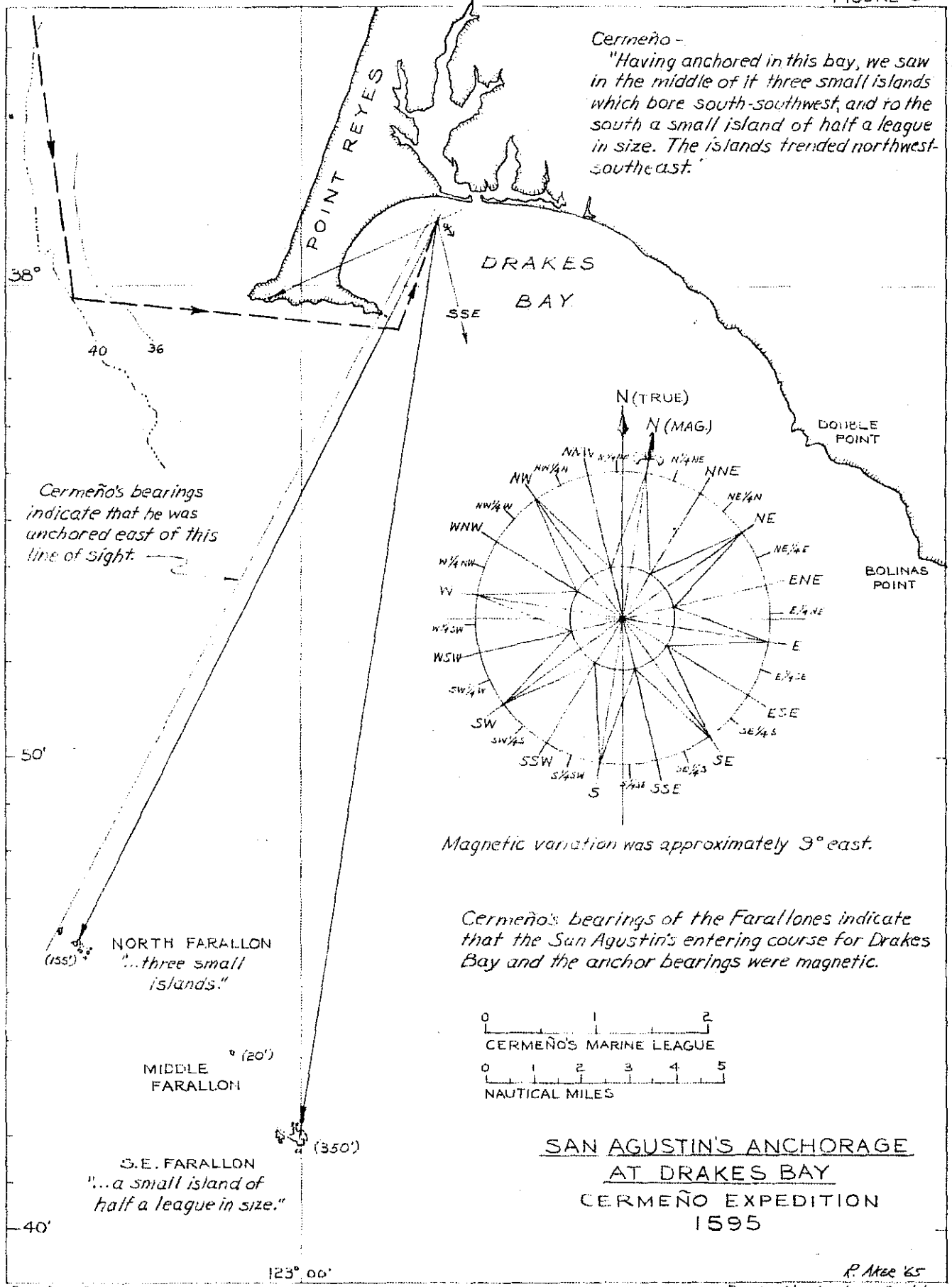
LOCATING THE ANCHORAGE

Before dealing with the courses and bearings given in the accounts which locate the San Agustin's anchorage in Drakes Bay, it is pertinent to determine whether they are true or magnetic. Fortunately, the Farallon Islands are located from this anchorage by their compass bearings. By plotting these bearings on a chart it is at once apparent that an easterly error must be applied for them to pass through an anchorage within Drakes Bay. The westernmost limit of the anchorage is fixed by the fact that the North Farallones were visible and were not screened by Point Reyes; C...
...Having anchored in this bay, we saw in the middle of it three small islands (North Farallones) which bore south-southwest, and to the south a small island of half a league in size (S. E. Farallon). The islands trended northwest-southeast. This latter information is probably an approximation.

From these bearings then, it can be certain that the compass error was not less than 9 degrees east nor much more than that. On a manuscript chart by Robert Dudley in his Arcano del Mare, issued after his death in 1646-1647, the magnetic variation for this locality is given as 9 degrees east. It is probable that the magnetic variations shown on Dudley's map originated with the Vizcaino expedition. For all practical purposes this figure gives satisfactory results, though it must be pointed out that the compasses of that day were calibrated in points of $11 \frac{1}{4}$ degrees each and not less than $\frac{1}{8}$ points. Cermeño's course and bearings are given to the nearest points and quarter points, consequently leaving us with a small, unknown interpolation error.

Several intersecting co-ordinates are given by which the anchorage may be located, none of which are necessarily precise in themselves, but which in combination give a fairly close position. The first of these is the entering course, C..... with the bow headed north a quarter northeast, that is $11 \frac{1}{4}$ deg. plus 9 deg. variation equalling $020 \frac{1}{4}$ true. This course would commence at the 5 fathom curve on the east end of Point Reyes. It is partly confirmed by the subsequent increasing soundings in D. of six and seven fathoms, and no more was never lost, that is to say, that this depth did not decrease, as one would expect they also found eight and even nine fathoms if they continued on that course.

The second co-ordinate is the statement in D.....The ship is anchored in the bay and port about a quarter of a league from shore. Converting this distance into yards from Cermeño's league gives approximately 1,200 yards. This distance off shore is approximately



the distance of the seven fathom curve on the modern chart of Drakes Bay and corresponds with what can be considered a third co-ordinate. From C.....Here I went on..., and went on to seven fathoms, where I anchored.

The fourth co-ordinates are the anchor bearings on surrounding landmarks. These should be our best co-ordinates but, unfortunately, they are confusing and make no sense until the position is determined from the foregoing co-ordinates. Within Drakes Bay there is nothing that corresponds to C.....The point on the west side bore southwest quarter west. However, this bearing with the 9 degree correction does plot through the anchorage from the highest elevation at the west end of Point Reyes, and it seems probable that this is the point described as the one on the west side. Again, there is nothing corresponding to C.....the one on the east, south-southeast. It is an impossible bearing. However, if the point is interpreted to mean the eastern end of Point Reyes and the bearing is corrected to read south-southwest, then it will be found that this bearing also plots through the anchorage. If the account is in error, it is relatively easy to understand why. To anyone unfamiliar with the situation, it would be difficult to see how a point on the east, as described could have a westerly bearing.

There is no evidence to date that the San Agustin was ever moved from her anchorage outside Drakes Estero or that she got underway before she was lost.

-
1. In the Declaracion, the depth at the anchorage would appear to be five fathoms, but the statement is ambiguous as the soundings on entering Drakes Bay commence at five and go down to seven. What was meant was that well outside of Point Reyes Cermeño commenced sounding in forty fathoms and then down to five off the eastern end of the point, thence to seven where he anchored.

ABBREVIATIONS

- C. - The account by Sebastian Rodriguez Cermeño.
- D. - The Declaracion of Sebastian Rodriguez Cermeño.

THE FIRST LANDING AND RECONNAISSANCE OF THE SHORE

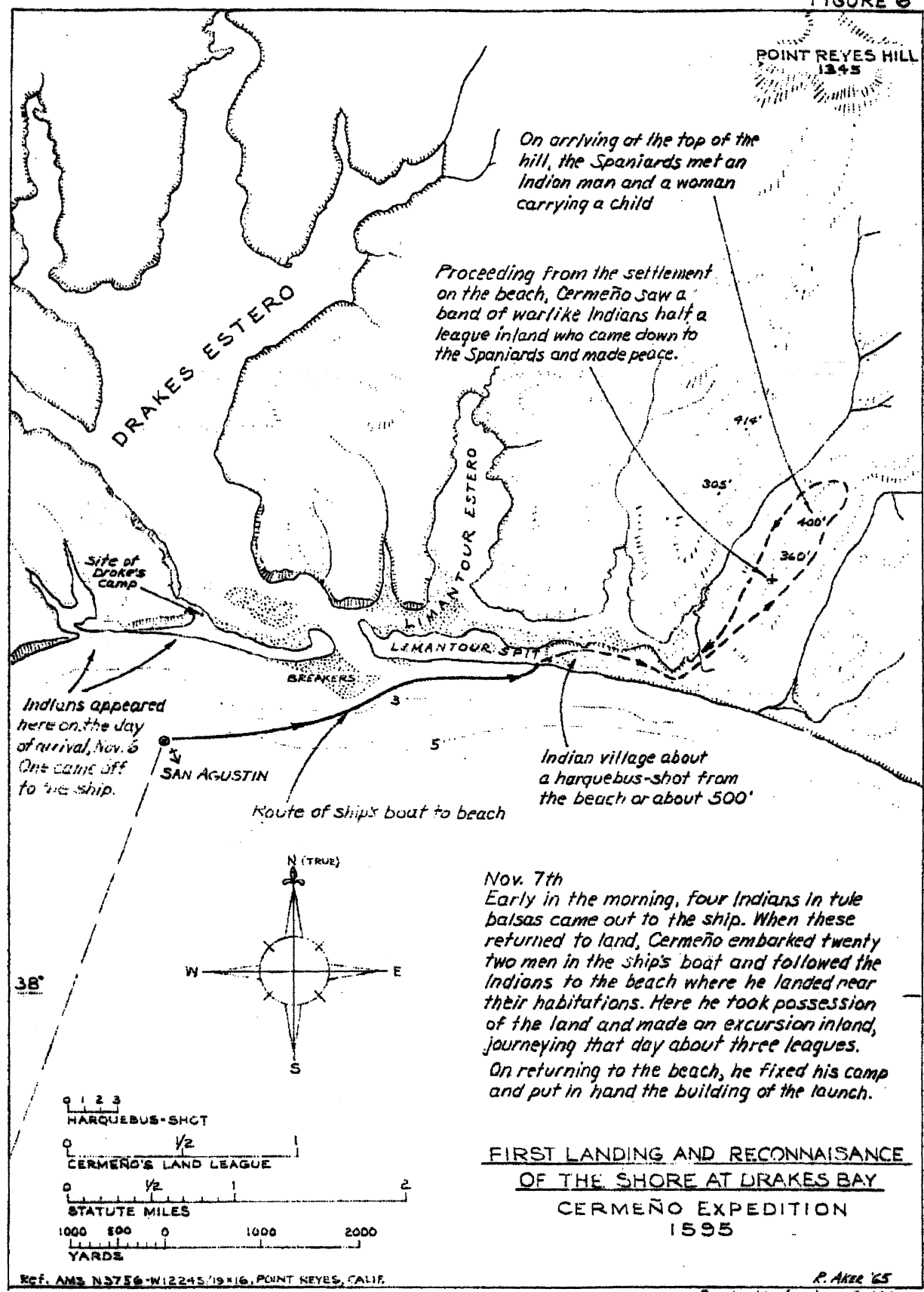
Early the morning after Cermeño's arrival in Drakes Bay, November 7th, four reed canoes like the one of the day before came out to the ship from the land. In each there was one Indian, and upon reaching the ship, they came alongside where they remained for some time, talking in their language. From Cermeño's account it would appear that they also came aboard the San Agustin, although in the Declaracion it was merely stated that Cermeño gave each of them some cotton cloth and taffetas and entertained them the best he could.

When the Indians left to go ashore, Cermeño at once embarked in the ship's boat with twenty-two men and went ashore with them to see the character of the land and put in hand the building of the launch with which to prosecute his discovery. Accompanying him were Captain Francisco de Chaves, Juan del Rio, his ensign, Sergeant Juan Gutierrez, Corporal Francisco Rolon, and the Reverend Father Fray Francisco de la Concepcion of the order of the Barefoot Franciscans. Seventeen of the men were armed with arquebuses and three carried shields. Though similar to the Declaracion, Cermeño's statement regarding his landing place is more specific.¹ He wrote:..... I went ashore with it and landed on the beach, where I found near by many Indians - men, women, and children who had their dwellings there. By deduction from details that come much later in the accounts, it is evident that Cermeño landed on Limantour Spit in the vicinity of the western-most 16th century Indian middens, DNG 1 and DNG 2.

Though at first one might assume that the landing party would go into the estero, the statement that they landed on the beach must be literally interpreted to mean that they followed the Indians to the outer beach on Drakes Bay and landed with them. From the account of the day before, it is evident that the Indians were not partial to putting out into the bay directly from the outer beach. Early in the morning, the surf is generally moderate and consequently would not create a problem for beaching the boat, certainly much less for the Indians. Also, due to the fact that so much was made in the account of the "river" that ran into the bay, as the estero was termed, it is likely that it would have been mentioned on this occasion if it had been entered. Another factor that adds weight to the likelihood of landing on the outer beach is that the Indian sites at DNG 1 and DNG 2 are screened from Drakes Bay by large sand dunes.

1. The Declaracion states:..... These went ashore with the Indians and landed on the beach of the port near some of their underground habitations, in which they live, resembling caves and like those of the Chichimecos.

FIGURE 6



POINT REYES HILL
1345

On arriving at the top of the hill, the Spaniards met an Indian man and a woman carrying a child

Proceeding from the settlement on the beach, Cermeño saw a band of warlike Indians half a league inland who came down to the Spaniards and made peace.

DRAKES ESTERO

LIMANTOUR ESTERO

Site of Drake's Camp

LIMANTOUR SPIT

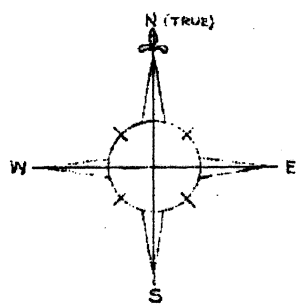
BREAKERS

Indians appeared here on the day of arrival, Nov. 6. One came off to the ship.

SAN AGUSTIN

Route of ship's boat to beach

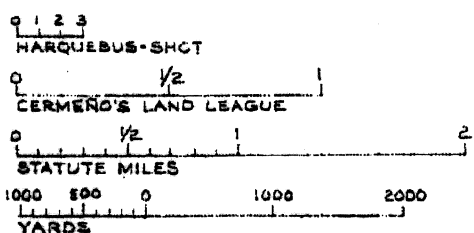
Indian village about a harquebus-shot from the beach or about 500'



Nov. 7th
Early in the morning, four Indians in tule balsas came out to the ship. When these returned to land, Cermeño embarked twenty two men in the ship's boat and followed the Indians to the beach where he landed near their habitations. Here he took possession of the land and made an excursion inland, journeying that day about three leagues.

On returning to the beach, he fixed his camp and put in hand the building of the launch.

38°



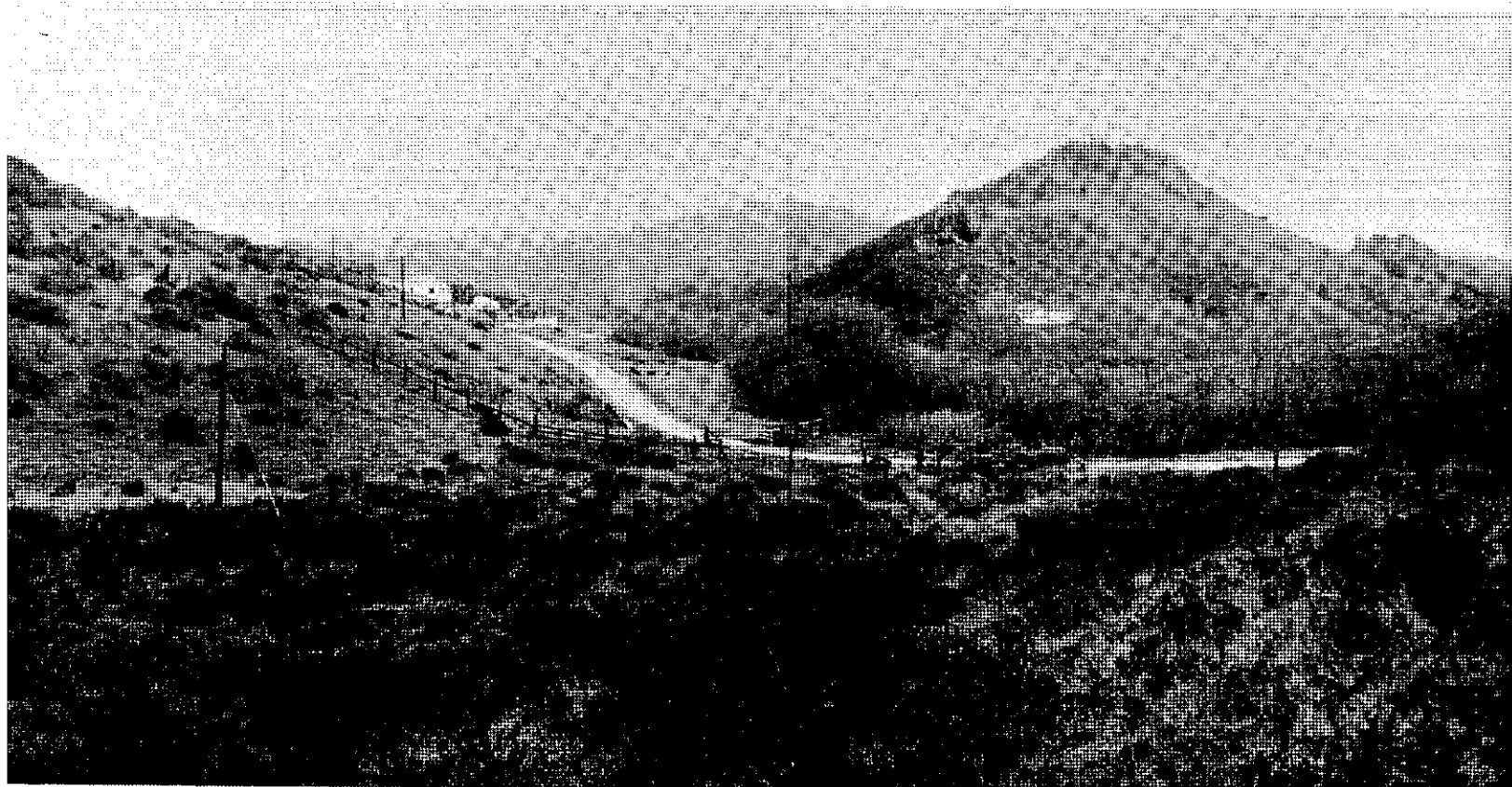
FIRST LANDING AND RECONNAISSANCE
OF THE SHORE AT DRAKES BAY
CERMEÑO EXPEDITION
1595

Ref. AMS N3756-W12245/19-16, POINT REYES, CALIF.



Matthew P. Dillingham

*SHORE INSIDE LIMANTOUR SPIT
POINT REYES IN DISTANCE*



Matthew P. Dillingham

*LAGUNA RANCH
INVERNESS RIDGE ON SKYLINE*

Although Cermeño stated that he landed near the habitations of these Indians, it is notable that there was no gathering on the beach as there was the day before, in fact, he stated that he found them near by at their dwellings. When he and his men did reach them, they seem to have been taken by surprise, or at least, short notice. This situation was probably due to the fact that the San Agustin's anchorage was at a relatively great distance from the settlement, about 2 1/4 nautical miles, and consequently too far for them to take much notice of her or to see any activity on board or near her, so making it comparatively easy for Cermeño's boat to arrive unnoticed. If he had come into Limantour Estero and approached these settlements, he would have been readily seen and it would have been easy for Indians on shore to follow him at close range. An advantage to be gained from landing on the outer beach was that the boat crew could wait there or out in the bay with minimum risk of being ambushed or trapped and overwhelmed as they could be in the estero. ¹

1. The detailed instructions issued by Viceroy to Mexico, Antonio de Mendoza to Zuñiga in 1541 for an exploration to California sheds interesting light on the contemporary thinking on these matters. It is stated that Cermeño carried instructions but these were not found. From the Instructions to Lopez de Zuñiga: 7. . . . Then with the aid of our Lord, following the coast closely as it opens up, you will from there onward all along make stops and take possession according to the minute which for that purpose you carry with you, so that all the coast you leave behind may be inspected and known and notice be had of what there is, so that it may be ascertained which is best. Before you make a settlement anywhere, endeavor to inspect the country to find out thoroughly what there is in it, so as not to be deceived, and pass on if the aspect of it be not satisfactory. The method which you shall follow in going ashore in the country you may discover, will be as follows:

8. When you discover land, if you reach it at an hour when you can inspect it, do so, taking care that you be not attacked by the natives, and in an open place so as not to be ambushed. In this manner you or those persons whom you select shall go ashore. Wagner, Spanish Voyages,, p. 419.

After landing, Cermeño took formal possession of the land. From the Declaracion; On the same day that the Captain went ashore with his men, he asked all to witness that he took possession of the land and port in the name of the King, our master. He gave it the name "La Baya de San Francisco," and the Reverend Father Fray Francisco de la Concepcion of the barefoot Franciscans, who comes in the ship, baptized it. In the sixteenth century the Spanish act of taking possession was formalized to establish legality. The procedure followed by Francisco de Ulloa on a voyage of discovery to Lower California in 1539-40 serves to shed interesting light on Cermeño's action. Ulloa took possession in several places and the actas, or records, confirming each are all typical of the one cited below for taking possession near the head of the Gulf of California.

"I, Pedro de Palencia, notary public of this fleet, bear true witness to all to whose eyes these presents shall come (whom God, Our Lord, honor and preserve from evil), that on the twenty eighth day of the month of September of the year fifteen hundred and thirty-nine the very magnificent Senor Francisco de Ulloa, governor's lieutenant and captain of this fleet for the very illustrious Senor Marques del Valle de Oaxaca in the Ancon de San Andres and Mar Bermejo, which is on the coast of this New Spain, toward the north, in latitude 33 1/2^o, took possession for the said Senor Marques del Valle in the name of the Emperor, our master, king of Castile, actually and in reality; placing his hand upon his sword, saying that if any person disputed it he was ready to defend it, cutting away trees with his sword, pulling up grass, moving stones from one place to another and from there to another, and taking water from the sea and throwing it upon the land, all in token of the said possession.

"Witnesses who were present when this was done: Reverend Fathers of the Order of San Francisco, Father fray Raimundo, Father fray Antonio de Meno; Francisco de Terrazas, inspector; Diego de Haro and Gabriel Marques.

"Done this day, month and year aforesaid.

"And I, Pedro de Palencia, notary public of this fleet, recorded it as it occurred in my presence and in conclusion made here this, my notarial mark, in testimony of the truth. Pedro de Palencia, notary public.

"Father Raimundus Anyelibus. Father Antonio de Meno. Gabriel Marques. Diego de Haro. Francisco de Terrazas."

After taking possession, the Declaracion stated that Cermeño went marching to the Indian village mentioned by him as being nearby and which the Declaracion describes as being about a harquebus-shot from the beach, or approximately 500 feet. The distance corresponds closely to the distance which the Indian middens, DNG 1 and DNG 2, are located from the outer beach on Limantour Spit. With his sergeant and men in marching order ¹ and his ensign, Juan del Rio, carrying the banner, he found the inhabitants of the village which were described in the Declaracion:.....
..Here all the Indian men and women, perhaps fifty all told without counting children, were looking on with great fright in seeing people they had never seen before. They were all very peaceable and their arms were in their houses, it not being known up to that time that they had any. They produced a seed the shape of an anise seed, only a little thinner, and having the taste of sesame, of which they make the bread they eat. Their food consists of crabs and wild birds, which are in great abundance near where they live, and many deer, as these have been observed going about. They are beyond comparison the largest that have been seen as will be apparent from the horns which were found, of which the captain carries a sample.

Cermeño added some further details of interest in his account and writing of their dwellings and arms he mentioned that These were pits made in the sand and covered with grass, in the manner of the Chichimeco Indians. They had bows and arrows, and we could find no other kind of iron with which to cut a weapon or anything else. The people were painted in certain parts, although the paint is not so thick as with the Chichimecos. The houses were somewhat similar to the ones described in the accounts of Drake's visit to this area, ² that is, they were formed in a circular pit a couple of feet or so deep and from the outer perimeter of which, clefts of wood were set up sloping toward the center and joined together at the top. The whole was covered with earth, or in this case with grass and sod. An opening, which Drake's Chaplain likened to a

1. Instruction No. 20 to Zuñiga specified that.....You will not permit the men to travel unarmed or in disorder. In your choice of places to make your camp look about well and keep a good guard night and day.
Wagner, Spanish Voyages, p. 422.

2. Sir Francis Drake, Baronet, The World Encompassed, . . . , The Argonaut Press, London, p. 54. Also Richard Hakluyt, Famous Voyage.

ship's scuttle, served both as an entryway and a means for smoke to escape from the fire pit within. On the earthen floor inside, rushes were spread about for the family to sleep on, and a small fire pit in the center provided them with heat and light. Evidence of Indian house pits can still be found in this area today.¹ Cermeño's mention of "no other kind of iron" is interesting and if not a mistake, it would seem that some artifact of iron left by the Drake expedition was seen.

Leaving the Indian settlements, Cermeño and his landing party proceeded to make a short reconnaissance of the inland thereabout, traveling in all about three leagues. These leagues have been determined to be a short league of about 2,400 yards and the route taken is relatively easy to reconstruct. Among Cermeño's reasons for this reconnaissance, it may be expected that there was concern for locating fresh water, and he would be attracted to the arroyos across from Limantour Spit as a possible source. Thus in marching from the settlements along the inner side of the beach he would have found his first opportunity to cross over opposite the stream which comes down from Muddy Hollow. He was probably approaching this when it was described in the Declaracion that from a hill which would correspond to the one east of this stream, about a half a league distant inland a band of Indians appeared who approached in a warlike manner, for as soon as they saw the Spaniards they performed a caracole and skirmished in a circle, like the Chichimecos, with loud howls. Shortly, one of them carrying a tall banner of black feathers advanced towards the Spaniards, looking them over, and at a little distance stopped to view them. Two of the Indians from the beach who had been well treated then talked to the others. With this talk they soon lowered their arms and put them on the ground. The one with the banner came forth and delivered it to Cermeño with the others following humbly, as if terrified, and yielded peacefully, Cermeño received them with a good showing of friendship, embracing them, and offered some of the taffeta sashes the Spaniards wore. Cermeño's men then came up and followed his example, and the Indians, all of whom had their faces painted in black and red, offered them in turn their bows and arrows.

With friendly relations established with these Indians, Cermeño and his men went on until they reached the hill from which the Indians

1. For a report on Indian middens DNG 1 and DNG 2 see Von der Porten, Drakes Bay Shell Mound Archaeology .

had come down. This they ascended to see if there was any other settlement of Indians, and in continuing, the Declaracion stated that. . . . On arriving at the top they saw coming an Indian man and a woman who was carrying a child. The Indian had some acorns for his food. These, without showing any fear or running away, came up to the Spaniards and the Captain made much of them and entertained them. The Indian treated the Spaniards to his acorns and the Captain declared that no one should do them any harm or take anything away from them. ¹ This done, they returned, going around the whole hill and down to the beach with all the men. Here he fixed his camp and made an entrenchment for defense and to put in hand at once the launch which had to be made for the discovery, having journeyed this day about three leagues. While Cermeño was laying out the camp here, naked Indians from somewhere nearby kept coming. It was mentioned that their chief talked for a long time, after which Cermeño showed them much friendship and gave each of them pieces of cotton and silk. They remained a good while and then went away without doing any harm. From the Declaracion of November 30th we learn that Cermeño had given his camp the name of Santa Fe.

Reviewing the reconnaissance of the shore briefly, it may be taken as fairly certain Cermeño ascended the hill between the stream from Muddy Hollow and the one from Laguna Ranch, going inland perhaps a mile and a half and around the hill and back to the beach from which he started. At this time he did not see the Indian settlement at the mouth of the valley leading to Laguna Ranch or discover the fresh water stream coming from there. This particular hill provided the first convenient access from the beach to Inverness Ridge and thence to the large settlements inland at Olema Valley and Nicasio. There was probably a well defined trail leading from the beach to the ridge of this hill, perhaps corresponding quite closely to the present road leading to Limantour Spit. The account of Pedro de Unamuno on San Luis Obispo contains many references to Indian trails in that area, and it is probable that similar ones would have been found here. The Indians encountered by Cermeño on this hill were probably coming from inland, particularly the couple met with, as the man was carrying a supply of acorns which were only found there.

The Indians who visited the site of Cermeño's camp could have come from one or more of three other known 16th century midden sites nearby; Mrn 236 on the beach at the head of the valley leading to Laguna Ranch, or Mrn 307 and Mrn 232 on the east side of Limantour Estero.

1. A similar intent was expressed in the instruction to Zuñiga. Instruction No. 20, Wagner, Spanish Voyages., p. 422

THE CAMP OF SANTA FE

Unlike Francis Drake's encampment, it has not been possible to pinpoint Cermeño's camp from the historical evidence though it can be placed within a few hundred yards of its probable location on Limantour Spit. Only by careful searching in the field using the techniques of archaeology is there any chance of finding this camp. Up to the time of the wreck of the San Agustin, the evidence could be applied to a general location on either side of Drakes Estero with almost equal conviction. Both the west side of Drakes Estero and Limantour Spit have 16th century Indian village sites and terrain compatible with the first portion of the accounts. We probably will never know why the beach on the west side of Drakes Estero was not chosen as the construction site of the launch, but it is conceivable that at the time it was not suitable, possibly not being sufficiently high above the tide line to assure a safe, dry camp. The launch was probably too large to risk launching into the surf with so few people to haul her off the beach into the water, and a site on the estero would therefore have been more desirable. A camp on the beach or spits had the advantage of being immediately accessible in case of trouble with the Indians, whether to take the construction force off in the boat or to land re-inforcements.

After the wreck we are provided with details from Cermeño's foraging trip inland that enable the general area of the first landing and the site of the camp set up there to be positively located. It is stated in the accounts that Cermeño traveled three or four leagues to villages inland which can be related quite clearly to an area located at the northwest end of Olema Valley. To have reached these from the west side of Drakes Estero, Cermeño would have been obliged to travel between two and three times as far. Then on returning it is related that he discovered a stream of very good fresh water on the shore of the sea, about a league before reaching camp. Juan Gutierrez, in his Declaracion, added that this stream emptied into a lagoon of salt water about a harquebus-shot from the sea. This stream could not have been found on the west side of Drakes Estero and is quite clearly the one which passes through the Laguna Ranch. It is still a very good stream of fresh water and it affirms Juan del Rio's statement thatThis witness drank of it and it was good.

The stream and lagoon mentioned provide an excellent landmark as a reference point from which the general area of the camp can be located. The distance of about a league from this stream to the camp refers to the short land league used by Cermeño, or about 2,400 yards, more or less, and if measured from the place where the stream enters the sea, the camp is located thus slightly west of Indian midden DNG 2 on Limantour Spit.

However, it is not unlikely that the site may be farther east if the reference point is considered to begin at, or somewhat above, the place where the stream entered the salt water lagoon mentioned by Gutierrez. This would be more in the context of what Juan del Rio states: ...About a league before reaching camp on their return, the Captain discovered a stream of very good sweet water on the shore of the sea. This witness drank of it and it was good. From the point above the lagoon where del Rio tasted the water, the camp site could move east a thousand yards or so to a location somewhere opposite to where the stream from Muddy Hollow enters the estero.

The general location agrees with the supplementary descriptions. On the occasion of the first landing the Declaracion stated that after ascending the hill identified as the one on the east side of the Muddy Hollow stream, Cermeño returned, going around it and down to the beach. Without further indication of movement, the account merely states: ...Here he fixed his camp and made an entrenchment for defense.... There is implication that the camp was close by this hill. Further confirmation of the general location is afforded by Cermeño's writing that ...near the camp are other arroyos of fresh water about two musket shots from the sea. These correspond to the Muddy Hollow stream and Glenbrook Creek.

We can also infer from Juan del Rio's account of Cermeño's foraging trip inland that the camp was near some Indian settlements on the beach, as in describing some of those found inland, he stated: ...While we were with them, twenty other Indians came up, who were settled on the beach near where the launch was being built and the camp.... These twenty Indians are those who took the Spaniards to their settlement nearby, where they gave them some of the food they had, acorns, a fruit the shape of a hazelnut, and other things to eat. Indian middens DNG 1 and DNG 2 are apt to be the remains of the settlement referred to here.

The foregoing information appears to constitute all of the present evidence for locating the camp. The statement that an entrenchment for defense was made indicates that a fortification, or an earthworks, consisting of a ditch and an inner wall of sand was constructed around the camp. It is possible that it occupied a commanding position on the dunes in order to permit the defenders to cover all of the approaches and at the same time communicate with the San Agustin. There is a faint suggestion that the construction site for the launch was separate from the camp, though they were probably very close to each other in that case. This is contained in Juan del Rio's statement ...near where the launch was being built and the camp.

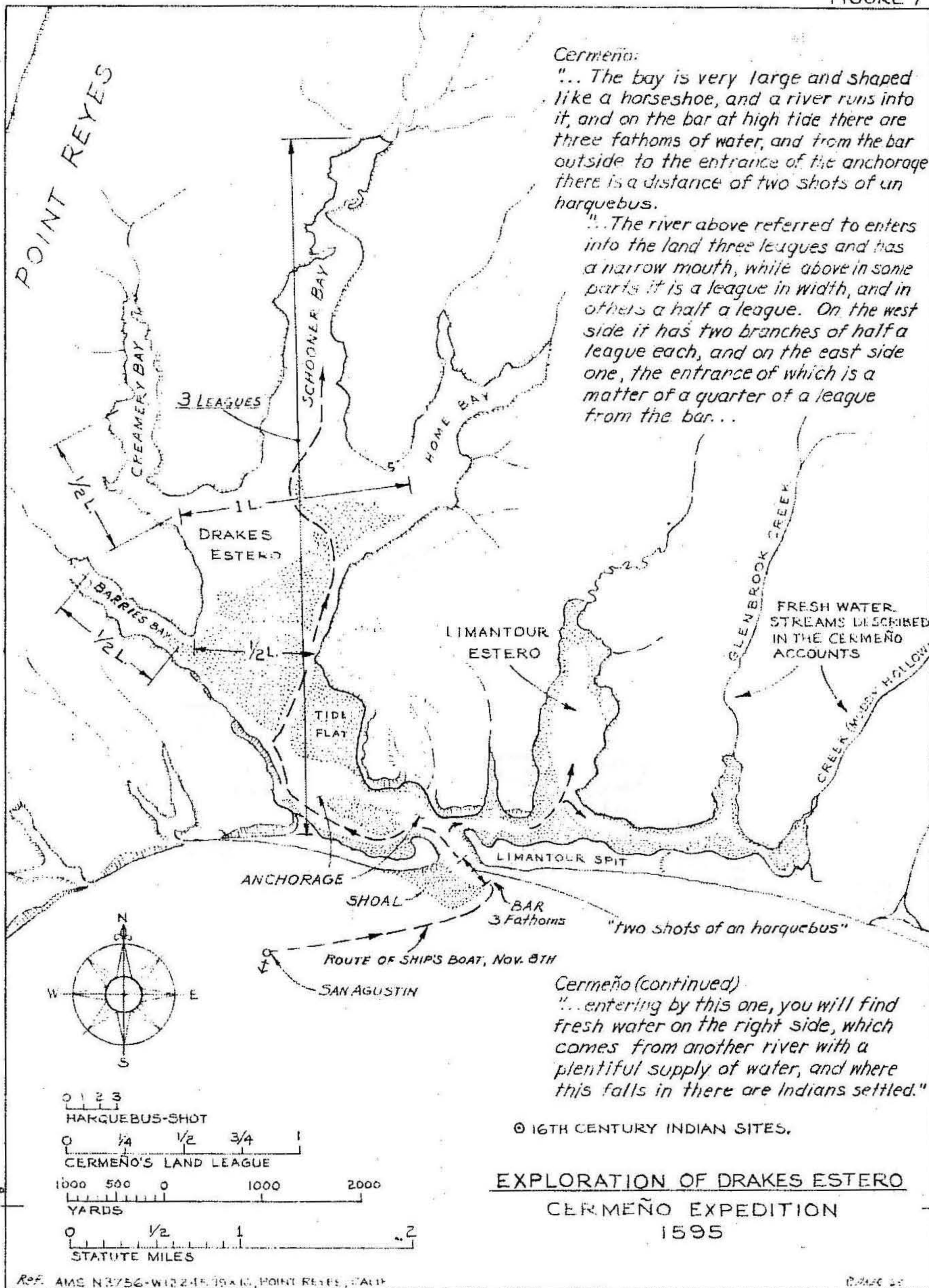
EXPLORATION OF DRAKES ESTERO

On November 15th Cermeño embarked in the ship's boat with eight armed Spaniards for an exploration of Drakes Estero. On this occasion his scrivener, Pedro de Lugo accompanied him recording what was seen. Writing of Cermeño's purpose in the Declaracion he stated:He went up an arm of a river, one of three which empty into the bay and port, to discover what was in them.

It seems strange that this was not undertaken until nine days after the San Agustin had arrived in Drakes Bay, though it is possible that the boat had been continuously employed in servicing the camp ashore and serving the needs of the ship and so was not available. Except for the specific mission stated above, there is no mention in any of the accounts that the estero had been entered before. Logically, however, it is likely that Limantour Estero had been entered. The San Agustin had been 102 days at sea by the time she arrived. With ninety people, more or less, on board it may be expected that the procurement of fresh water was the first order of business. Notably, on the occasion of this exploration Pedro de Lugo included a description of the east branch of the estero corresponding to Limantour Estero and mentions that fresh water could be found there.

Drakes Estero, as well as the other esteros, or estuaries, are spoken of as rivers in the accounts. On entering the Drake-Limantour estuary system, note was taken of the entrance: This one makes a bar on which at high tide there were about three fathoms of water, and from the shoal outside to the anchoring place the distance is two harquebus-shots. That is, it was two harquebus-shots, or about a thousand feet, from the bar outside the entry channel to the waterway inside the spits. On the inside, Cermeño would have been obliged to follow the channel leading to Drakes Cove on the west side of Drakes Estero where the Golden Hind had been careened. If any evidence of the English occupation on that site remained, there is no hint of it in de Lugo's account. It is probable that by that time all surface indications would have been destroyed by winter storms and changes in the sand formations. However, even if there had been any indication, there was good reason to make no acknowledgement of it.

At Drakes Cove it is noted in describing Drakes Estero:The mouth is narrow and near it there is a settlement of Indians of the same class as those above mentioned. (Indians first mentioned in the Declaracion.) This settlement corresponds with the 16th century Indian midden, Mrn 233, which is now located under the road and boat-house on the north side of



Cermeño:
 "... The bay is very large and shaped like a horseshoe, and a river runs into it, and on the bar at high tide there are three fathoms of water, and from the bar outside to the entrance of the anchorage there is a distance of two shots of an harquebus.

"... The river above referred to enters into the land three leagues and has a narrow mouth, while above in some parts it is a league in width, and in others a half a league. On the west side it has two branches of half a league each, and on the east side one, the entrance of which is a matter of a quarter of a league from the bar...

Cermeño (continued)
 "... entering by this one, you will find fresh water on the right side, which comes from another river with a plentiful supply of water, and where this falls in there are Indians settled."

© 16TH CENTURY INDIAN SITES.

**EXPLORATION OF DRAKES ESTERO
 CERMEÑO EXPEDITION
 1595**

Ref. AMS N3756-W12-15 19x10, POINT REYES, CALIF

Drakes Cove. The site is visible in a 1942 air photo taken before these were constructed and the photo shows a shelf, on which the midden was located, projecting from the base of the bluff into the cove. The shelf made a good site for a small community as it had excellent shelter from the prevailing wind, and until recent times, there was a fresh water spring close by in the northeast corner of the cove.

Continuing with Pedro de Lugo's description: ...A little farther on there is another of a few people near the water.... This settlement, would have been located on the site of the 16th century Indian midden Mrn 235, 910 yards northwest of Mrn 233. This was the settlement mentioned in the account of Drake's voyage, The World Encompassed....., which described an Indian settlement nearby the English encampment ...as being near about 3 quarters of an English mile distant from them. Cermeño's boat necessarily passed close by this settlement.

Continuing: ...and at quite a distance from these there is another (settlement) of naked Indians who had their dwellings on a hill. From Mrn 235 it is difficult to tell what course Cermeño took as he would have had a choice of continuing on the west side or following the main channel over to the east side. However, there is a known 16th century midden at Mrn 242 on the east side of Drakes Estero at the entrance to Home Bay. This one is located part way up on a hill, 1.2 miles from Mrn 235, and could have been easily seen from a boat on the estero. If Cermeño had been following the main channel, as logically he would, he would have passed near this site immediately after leaving Mrn 235.

The proportions of Drakes Estero agree reasonably well in length and breadths according to Cermeño's measure of it in leagues, but the descriptions of the branches are confusing: ...One of the rivers is large and enters the land about three leagues....This river in places may be about a league wide and in others a half a league. On the west side there are two branches of a half a league each, and on the east side one about a quarter of a league from the bar. On entering this, there is on the right side sweet water which comes down from a copious river, at the entrance of which Indians are settled with their women, well-made people and robust as has been stated. It is true that there are two branches on the west side of Drakes Estero, and if Cermeño had not seen the bend in Creamery Bay, which is screened by the terrain, then both this and Barries Bay correlate well enough with the half league branches on the west side mentioned in the Cermeño account. There is also one on the east side, Home Bay, but this is by no means only a quarter of a league from the bar at the entrance to the esteros.

Cermeño's own account is quite explicit about the distance from the bar to the east branch being a quarter of a league, and it therefore seems unlikely that this was a mistake. His description is similar to Pedro de Lugo's, but the river of fresh water is described somewhat differently. From Cermeño's description of the estero:On the west side it has two branches of half a league each and on the east side one, the entrance of which is a matter of a quarter of a league from the bar. Entering by this one, you will find fresh water on the right side, which comes from another river with a plentiful supply of water, and where this falls in there are Indians settled.

Reconstructing these descriptions of the east branch, it becomes apparent that Limantour Estero was the one being described, with its entrance opening at the end of Limantour Spit. Here, the entrance would have been found, in fact, a quarter of a league from the bar, or about 600 yards, as it is shown in the 1942 air photo or the maps in Appendix IX. The meaning of finding fresh water on the right side on entering Limantour Estero is readily explained by reference to the air photo or maps, which show that the main channel soon turns northward into Limantour Estero. The secondary channel running inside of Limantour Spit branches off at the end of this turn at a right angle, on the right hand side, as one is entering. This secondary channel receives the run-off from Glenbrook Creek and the stream from Muddy Hollow. Either of these, though perhaps more likely Muddy Hollow stream, corresponds to the ...copious river, at the entrance of which Indians are settled and similarly with Cermeño's description.

It is an interesting fact that on the east side of Limantour Estero, near the 16th century Indian middens, Mrn 232 and Mrn 307, there is a spring of fresh water where several shards of a large jar of a type used by the Spaniards for carrying water aboard ship were found. The identity of these cannot be attributed to Cermeño, however, as Drake was also carrying the same type of jar taken from Spanish ships, which he used for the same purpose. Both expeditions may have used this as a watering place though the greatest likelihood is that they would be Cermeño's as there was a spring close by Drake's camp. Or the shards may be attributed to the Indians who acquired them from the wreck of the San Agustin. Although this spring could have provided a convenient watering place for a ship's boat, it is of insufficient flow to correspond to the watering place mentioned by Cermeño.

THE WRECK OF THE SAN AGUSTIN

Despite the absence of an account of the loss of the San Agustin toward the end of November, the Declaracion of November 30th makes it quite plain that the ship was lost while at anchor; . . . That by reason of the loss of the ship San Agustin which he brought, while at anchor in the said port, and which Captain Pedro Sarmiento offered to the King in the City of Manila, without having been able to save any of the food supplies or other property on board as is recorded in the investigation made this day, . . . Father de la Ascension, who mentioned the incident in the course of writing a description of Vizcaino's voyage, sums up the loss in a single sentence that complements the above and completes the general picture: While they were setting up the fragata in this port an onshore wind came up which drove the ship upon the coast, and she was lost with what property she contained.

Several lives were lost by drowning. Some detail is given in a letter from the royal officials at Acapulco to the Viceroy, Conde de Monterey, February 1, 1596, which are from an account, now³ lost, by Cermeño's pilot, Juan de Morgana.² He related that a Franciscan⁴ and other persons on board were drowned when the ship struck and went to pieces.⁴ A letter from the Audiencia dated Mexico, March 5, 1596, relates that twelve persons were drowned and that all the goods were lost.⁵ One of the oydores wrote the following day that seven men were drowned. The discrepancy is curious and cannot be explained.

From the little that we know, the disaster is not difficult to reconstruct. By conjecture we may assume that the San Agustin never left her first anchorage outside of Drakes Estero. If she had been moved, it would have been to either a more secure anchorage or one where repair work could be safely performed. There is no indication that either step was taken, and if she had been moved for either of those reasons, the loss probably would not have happened. Nor is there any indication that the ship got underway

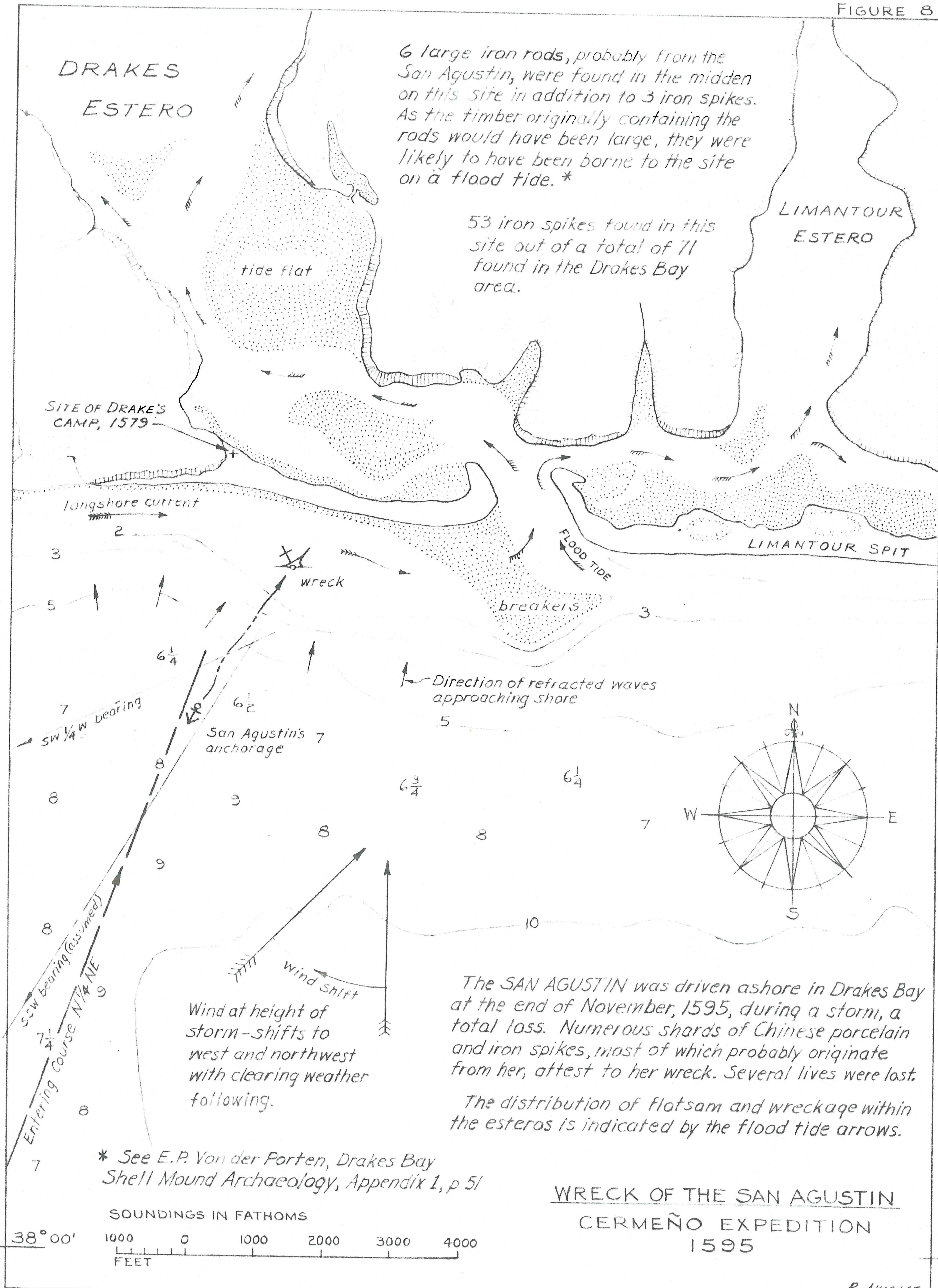
1. Father Antonio de la Ascension's Account. Wagner, Spanish Voyages p. 249.

2. In 1601 Morgana was pilot of a small vessel which accompanied the galleon Santo Tomas to Manila. He was then said to have been very expert and one of the oldest pilots of the islands. Wagner, Spanish Voyages , p. 373.

3. This may have been Father Francisco de la Concepcion as he was not mentioned after the wreck, nor is there any mention of other churchmen afterwards.

4. Wagner, Spanish Voyages , p. 166.

5. Ibid., p. 167.



before she was lost.

The significance of the first heralds of a late November storm probably went unnoticed - the gathering high altitude overcast, somewhat more swell than usual coming into the bay, and a deceptive light, warm wind from the southeast or south; perhaps a welcome relief from the chill in the westerlies. Veteran pilot, Juan de Morgana, may have sensed the omens. It was said that the officers were blaming each other for the disaster when they returned to Mexico. Bolaños said in his *derrotero*, made on the Vizcaino expedition, that the loss was caused more by the man commanding the ship than by the force of the wind. In this *derrotero*, Bolaños recommends that for shelter from the south and southeast winds, a ship must anchor in the west-southwest corner of Drakes Bay.

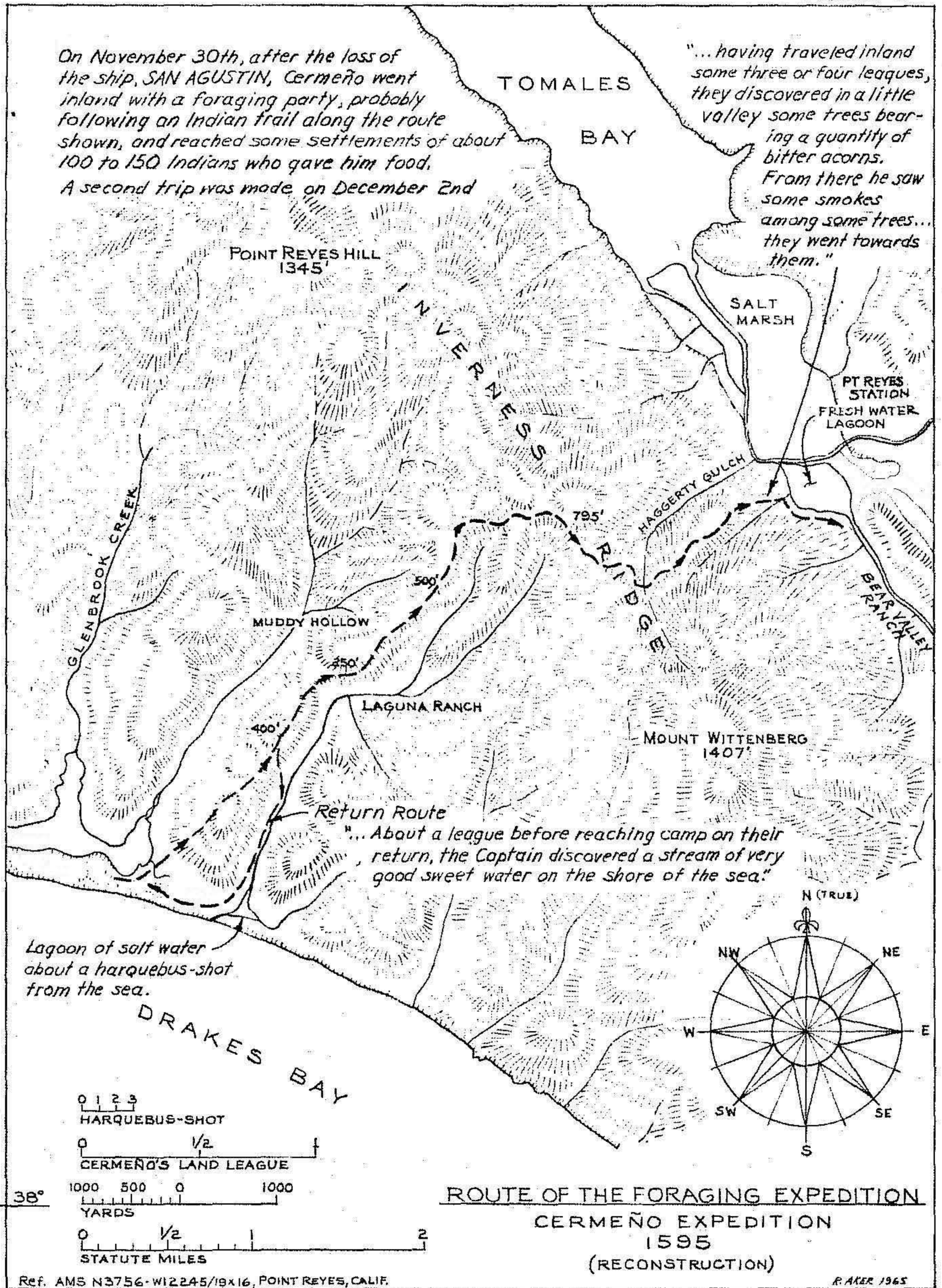
But it had been many years then since Cabrillo and Ferrelo had felt the wrath of southerly gales in the winter of 1542 when they were on this coast and their experience was perhaps forgotten. Cermeño had weathered a northwest gale the day before he found the refuge of Drakes Bay, and he may have assumed that it would be from this quarter that he would receive his worst wind. His anchorage outside of Drakes Estero was protected from the north and northwest winds.

With a southeast wind, Cermeño could have gotten under way easily and tacked over to the southwest corner of the bay or out to sea, but with rain and thick weather, the wind probably increased to gale force, shifting to where it was blowing into the bay from the south or southwest. There could have been nothing to do but pray that the anchors would hold, as the wind and sea would have set them directly on shore. With a heavy ground swell coming into the bay and fanning out over the shoal outside of Drakes Estero in a sea of breakers, the San Agustin probably dragged her anchors with every surge. Five hundred yards or so from the beach she would have felt her first jarring shock of coming aground as her stern struck bottom. With each breaking sea that shattered itself against her hull, alternately lifting her, then dropping her with a concussion that wracked her timbers, she was moved farther onto the shoal until she was hard and fast in the sand. Here, she would have been in about one and a half fathoms of water, some four hundred yards out from the beach.

Juan de Morgana implies that the ship went to pieces when it struck and caused the Franciscan and others to be drowned. With the relatively small loss of life, however, it would seem that a large part of the ship had remained intact, enough so that Bolaños still hoped to see some trace of the wreck when he returned to the bay with Vizcaino seven years later. But

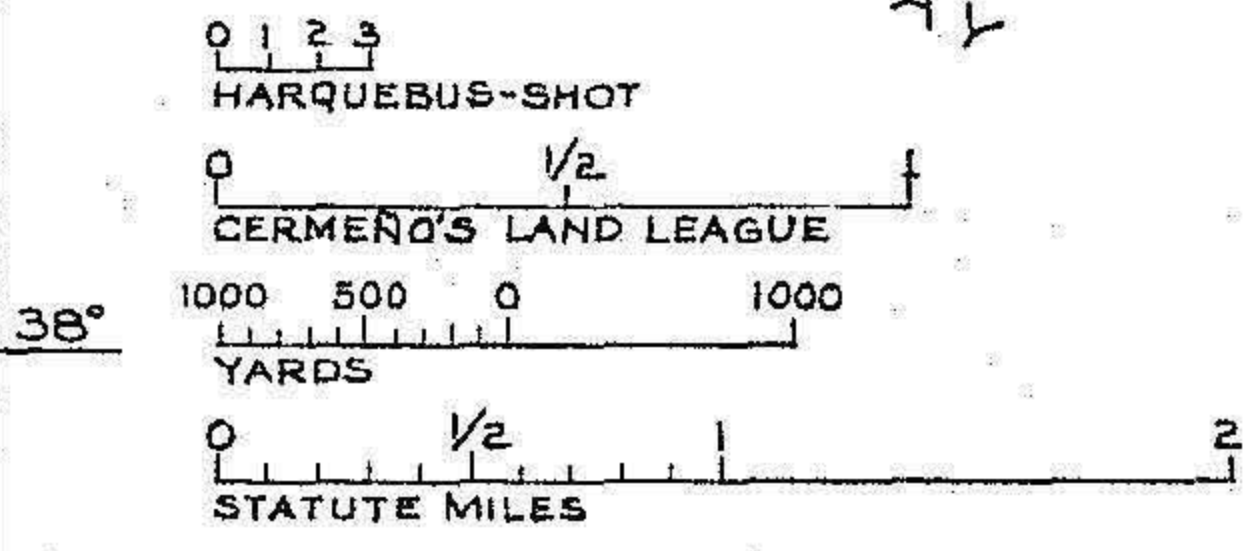
On November 30th, after the loss of the ship, SAN AGUSTIN, Cermeño went inland with a foraging party, probably following an Indian trail along the route shown, and reached some settlements of about 100 to 150 Indians who gave him food. A second trip was made on December 2nd

"...having traveled inland some three or four leagues, they discovered in a little valley some trees bearing a quantity of bitter acorns. From there he saw some smokes among some trees... they went towards them."



"... About a league before reaching camp on their return, the Captain discovered a stream of very good sweet water on the shore of the sea."

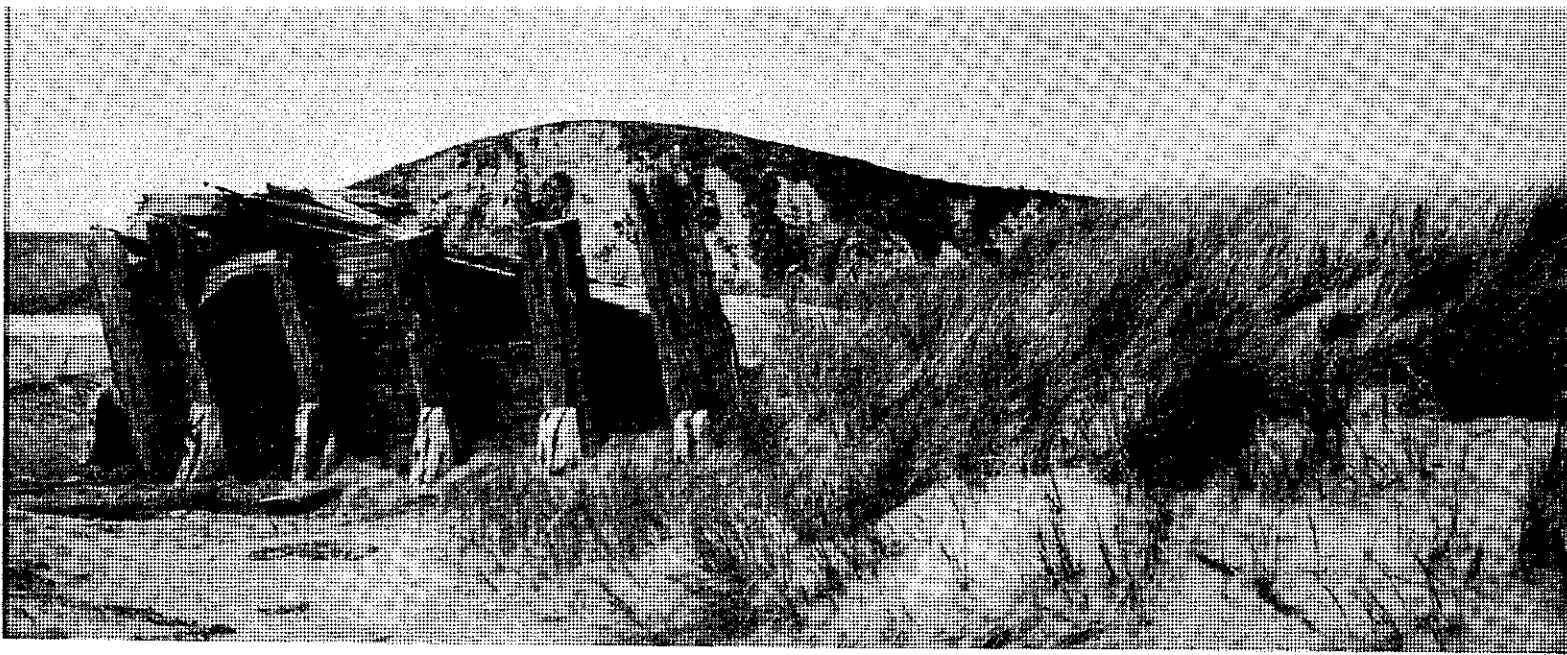
Lagoon of salt water about a harquebus-shot from the sea.



ROUTE OF THE FORAGING EXPEDITION
CERMEÑO EXPEDITION
1595
(RECONSTRUCTION)

Ref. AMS N3756-W12245/19x16, POINT REYES, CALIF.

R. AKER 1965



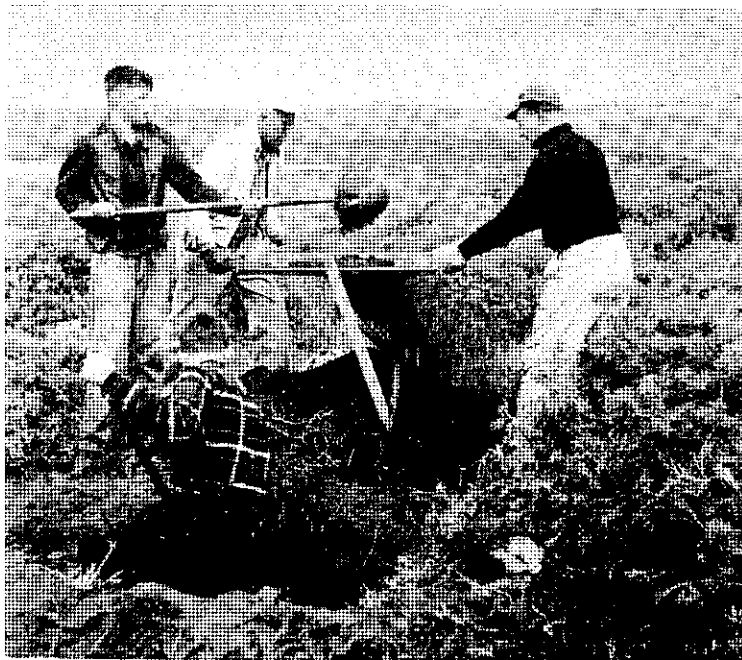
Robert W. Parkinson

SHIP'S WRECKAGE ON LIMANTOUR SPIT



Robert W. Parkinson

*SHIP TIMBERS
AT ENTRANCE TO
DRAKES ESTERO*



Robert W. Allen

*EXCAVATION OF 16TH CENTURY
INDIAN MIDDEN
ON LIMANTOUR SPIT*

significantly, four iron rods, each about four feet long and an inch in diameter, which were found in the Indian midden Mrn 232 and considered to be 16th century, give evidence of having come from the stem of the San Agustin. The 'S' shape of two of them indicates that they had been affected by a shearing action, such as would occur if the ship's bow had broken away and caused the stem and keelson to pull apart. The bows of the ships of this period tended to be weak due to their great overhang forward of the keel. To make matters worse, the weight of the foremast and bowsprit was also carried by the stem.

In the Declaracion of November 30th, made very shortly after the wreck, it was said the Spaniards were unable to save any of the food supplies or other property on board. Most of the San Agustin's people were fortunate to leave the wreck with their lives, as they were a great distance from the shore. The ship's boat was probably lost since it was no longer mentioned, and the provisions and goods all would have been underwater in the hold after the grounding. There is no indication that salvage of the wreck was attempted. The loss of the boat and the distance of the wreck offshore made this impractical. When the launch was completed, the need to return to Mexico before the meagre supply of food gave out was probably more compelling than salvage.

But it is evident that the Spaniards must have been gathering up whatever of value came to them ashore. We can see this in Juan del Rio's description of the skirmish with the Indians over some wood from the ship the latter had gathered from the beach. Cermeño was now faced with the need to provide shelter for nearly eighty people. In addition, they would need firewood for cooking and comfort and possibly some of it to fit the launch for her additional burden. These necessities probably account for the absence of 16th century spikes in the Indian middens, DNG 1 and 2, on Limantour Spit. After the skirmish with the Spaniards, the Indians left their settlements on the beach and the Spaniards were free to gather up everything they could salvage or use.

It is inevitable that as the wreck broke up, much of its contents and structure would come ashore. From Father de la Ascension's account we are told that Francisco de Bolaños claimed they had left on shore on that occasion a quantity of wax and a great many cases of silks. In addition to that, he suggested that something of the great quantity then lost might be found on the coast, thus anticipating that more of the cargo may have been carried ashore afterwards.

Strangely, nothing is said about Chinese porcelains, many shards of

which turn up in the Indian middens around Drakes Bay today. Drake is known to have had a quantity of such porcelain with him which he captured from a Spanish ship, and he may have distributed a small or large amount of this to the Indians. But there is good evidence that much, if not most of the porcelain, came from the San Agustin and was picked up on the beach by the Indians. It is an interesting possibility that a number of intact specimens could turn up in a cache of her cargo.

Bolaños didn't make it clear if the wax and silks were cached or merely left on the beach where they came ashore, but with nearly eighty people and over a week's time it is probable that everything would be gathered together and placed in a cache or bunker where it could be covered over and recovered on another voyage. The intrenchment may have provided a good place for this or it could have been dug into a nearby hillside. As improbable as it may seem, some of the cases of silk might survive or show some trace to the present day as it was often the practice to pack the cases with great care and tightly cover them to protect the contents from sea water that might leak onto them or from insects bred within the ships. In addition, the overland journey by muleback from Acapulco to the interior of Mexico necessitated unusually careful packaging.

The large number of 16th century ship spikes and nails found in the Indian middens around Drakes Bay probably originates almost entirely from the San Agustin though there is some chance that some of them may have come from Drake's camp sixteen years earlier. Juan del Rio's Declaracion shows that both the Spanish and the Indians were gathering up the wreckage. The Indians used the wood both for the construction of their houses and for firewood. The more lightly constructed upper parts of the ship would be the first to carry away and are probably the source of most of the nails. The planking of the lower hull and decks is most likely to have been treenailed for the most part. Wales would be through bolted with iron as would be knees, keelson, riders, stem and stern posts, and miscellaneous binding members of the hull.

The lower part of the hull would probably remain where the ship grounded, weighted down by ballast, cargo, guns, shot, etc., and could conceivably be found today in the sands outside of Drakes Estero. The sides and decks would break away and come ashore in sections too large to be carried away or broken apart by Indians, and this may account in some measure for the fact that relatively few large iron fastenings are found in the middens. Otherwise one might expect to find such pieces as eye-bolts, rings, and such fittings as the chains that secured the lower deadeyes to the hull. The four iron rods, as already pointed out, may have come from a piece of the stem which could

• have broken away from the ship entirely in a section small enough to be carried in to the Indian settlement, possibly washing into the estero and near the camp itself.

The natural distribution of the wreckage should be considered with respect to its distribution in the Indian midden sites. At the height of the southerly storm that wrecked the San Agustin, storm driven waves built up the water level inside Drakes Bay. This excess of water equalizes its level by flowing eastward out of the bay as a strong, longshore current. The early distribution of wreckage and flotsam was consequently on the beach immediately facing the wreck and for some distance to the east of it. Cermeño's men and the Indians from Limantour Spit probably intercepted most of this, which would have consisted of the lighter planking and members of the upper-works and furnishings, and also part of the goods washed out of the 'tween deck or through openings in the hull.

During the time that a flood tide flowed into Drakes Estero, a great part of the wreckage would have been carried in with it. This would in turn favor the east side of the channel because of the longshore drift, particularly if the flotsam is also driven by a southwest or west wind. Much of it would have entered the Limantour side of the estero where the channel would then carry it toward middens Mrn 232 and Mrn 307, where the largest percentage of 16th century ship spikes has been found, as well as the four iron rods.

In recent years the Guild has found relatively large sections of modern, wooden shipwreck on the Limantour spit. It is not unlikely that similar sections of Cermeño's ship also ended up on the spit. Although the wood may be entirely gone by now, some traces of the ironwork may yet be found under the dunes at the outer end of Limantour Spit.

THE SEARCH FOR FOOD

On November 30th, an investigation was held and recorded into the loss of the San Agustin. This was probably held only a day or two after the wreck. Because of the grim prospect for survival the expedition now faced, Cermeño also took council that day with certain people he was apparently required to consult with. Having taken their opinions, he stated in a declaration that it was agreed that it was advisable to go out in search of food because they had been unable to save any of the supplies or goods from the ship, . . . and for the further reason that there are almost eighty people to feed and no food to give them nor to carry in the launch which is being finished and in which they have to go, and as he has news that there is food near the camp with which they can be supplied, and having taken the opinions of those persons whom he had to consult, it was agreed that it was advisable for the good of all and for the service of the King to go in search of food.

The news that there was food near the camp may have come from the Indian settlement in the vicinity of the middens at DNG 1 or 2. From some information contained in Juan del Rio's declaration describing the foraging expedition, it appears that some Indians met with inland had formerly resided on the beach and had shared some of their food there with the Spaniards after the wreck: . . . These twenty Indians are those who took the Spaniards to their settlement nearby, where they gave them some of the food they had, acorns, a fruit the shape of a hazelnut, and other things to eat. This food offered to the Spaniards is not indigenous to the shores of Drakes Bay. It is not unlikely that these Indians revealed that it came from somewhere on the other side of Inverness Ridge.

With the resolution made to go inland, Cermeño's expedition must have been organized almost at once, as he departed from the camp on the same day, taking with him eleven Spaniards, four Negro slaves belonging to him, and seven Indian ship boys, part of those belonging to the ship. The names of all of the Spaniards are recorded. Included in the group was a man who may have been a passenger and a person of some importance, Don Garcia de Paredes; the pilot, Juan de Morgana, who it was added, offered to go with Cermeño; the ensign, Juan del Rio; Sergeant Gutierrez; Corporal Francisco Rolon; and Francisco de Bolaños, who later was a pilot on the Vizcaino expedition. All of those going out with Cermeño were armed in the best possible manner to defend themselves. In Cermeño's absence, it was arranged for Captain de Chaves to take command of the camp and supervise the work of completing the launch. Twenty armed Spaniards were left with him to guard the camp.

The expedition inland for food is briefly mentioned in Cermeño's account of the voyage and in the official Declaracion, but he regarded

the discovery of the character of the country seen inland to be of such importance that on December 6th, after having made two trips to the same place for food, he had four of the people who accompanied him make a declaracion of what they saw so that there would be a record of it. These were Juan del Rio, Juan Gutierrez, Juan de Morgana, and Domingo Francisco, a sailor. From the descriptions contained in the accounts, the location of the Indian settlements discovered inland where Cermeño found the food he required can be positively related to the bank of a fresh water marsh located at the northwest end of Olema Valley. During the later days of Spanish occupation a permanent body of water, known as Lake Olemas, covered the acreage which the marsh now occupies,¹ and on the banks of this and the stream leading into it are found trees and plants of the type mentioned in the accounts.

Although there is no description of the place where Cermeño started inland, this can be reasonably pin-pointed by two indications to the foot of the spur from Inverness Ridge which passes between Muddy Hollow and Laguna Ranch. The first of these is that according to the context of the accounts, the lagoon at Laguna Ranch was discovered on the return to camp; therefore, he could not have passed that point before going inland. The second is that the spur above mentioned is located at the first convenient crossing from Limantour Spit to the mainland.

A reconstruction of the route taken between Cermeño's camp and the Indian settlements inland must necessarily be conjectural, but it would be fairly safe to assume that he followed an Indian trail, not only for the greater ease of travel but also in the hope that it would lead to settlements where he could procure the food supplies required. Logically, there would have been a well traveled trail between the Indians at Lake Olemas and those on Limantour Spit and to the other settlements on the esteros. In a general way, these would follow routes that are direct and easily traversed. At Drakes Bay the ridges and flanks above the valleys provide the best route in most cases, and today the majority of the ranch roads follow this pattern.

It would not be too far amiss to assume that Cermeño's route followed the ridge of the spur leading from the beach to Inverness Ridge and then descended along a spur paralleling Haggerty Gulch. Probability favors the one on the south side, as following this and dropping into the valley at the foot of the spur, one would be near known Indian habitation on the shore of the Lake Olemas marsh and probably very near the place described

1. Sally Carrighar, Exploring Marin. Marin Conservation League, 1941.

by Juan del Rio:¹ .. having gone inland some three or four leagues, they discovered in a little valley some trees bearing a quantity of bitter acorns, From there he saw some smokes among some trees, and all being in accord they went toward them. Having reached the place where the smoke was, they found a number of Indians settled, perhaps 100 altogether, men, women, and children....These settlements are on the bank of a lagoon of fresh water.

Cermeño's introduction to these Declaracions adds the further information that he had gone inland four leagues,and had discovered three separate settlements of Indians - men, women, and children. They were in their houses, which are similar to low caves, on the bank of a branch of a river of sweet water where there are a number of trees bearing acorns and other fruit, the vedona, the shape of a hazelnut, and hazelnuts like the Castilian.² He estimated that there were 150 Indians and these at once declared themselves to be friends and made peace.

Today, along the banks of the marsh and the stream evidence remains of former Indian habitation, and here trees of the type mentioned in the accounts are to be seen; the California laurel with fruit similar to a hazelnut; the acorn-bearing live oaks in large numbers on the hillside and in the small valleys nearby. The distance from Limantour Spit to these sites, following the most likely route, is about 5 1/2 statute miles or about 3 3/4 of Cermeño's short leagues, whereas the direct distance from Drakes Bay inland is closer to 3 of Cermeño's leagues. The various accounts give considerable description of the character of the area near the Indian settlements, all of which describe the northwest end of Olema Valley to a remarkable degree as summed up by Juan del Rio:This witness went about inspecting the quality of the land and its character, and saw not only on the bank of the lake but in the little valleys many trees bearing acorns and many kinds of food, on which the natives lived, hazelnut trees like those of Castile

1. This conclusion is based on an intensive study of this aspect of Cermeño's expedition made by Robert W. Allen, Vice President of the Drake Navigators Guild, who formerly made his home on the foot of the spur referred to. In the course of his investigation he discovered extensive traces of Indian habitation in this area in the locations described in the accounts.

2. The trees with the bitter acorns correspond to the coast live oak, agrifolia, and the hazelnuts were undoubtedly found on the California laurel or bay. The tree bears a plum-like, 1 inch fruit, greenish to purple in color. The seed looks like a hazelnut when the pulp is removed and was eaten by the Indians, who heated it to make it palatable.

Plate X

NORTH END OF BEAR VALLEY RANCH. FRESH WATER LAGOON IN
FOREGROUND. TOMALES BAY IN DISTANCE

Plate XI

BEAR VALLEY RANCH. POINT REYES STATION IN DISTANCE
FRESH WATER LAGOON BEYOND TREES.

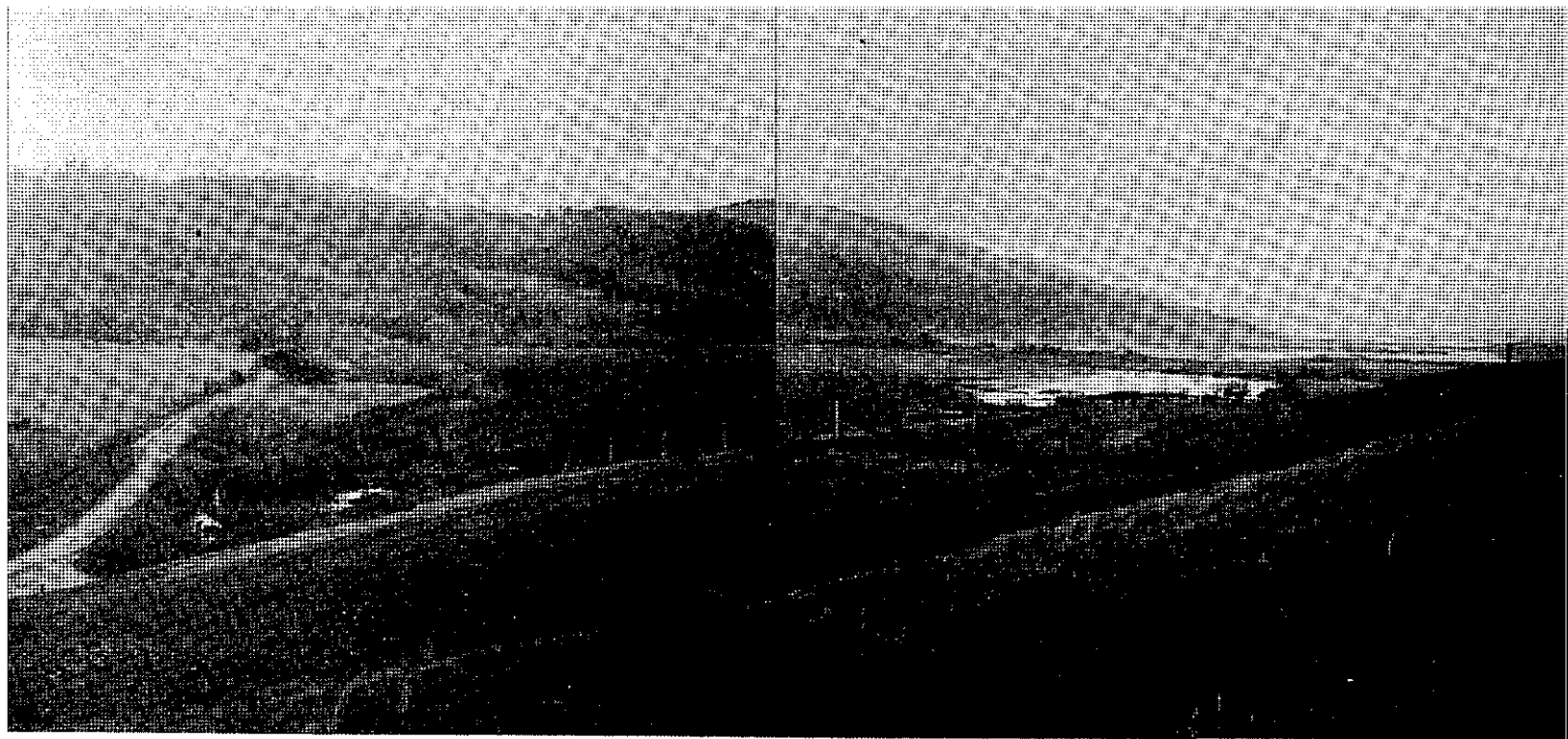
-Overleaf-



Robert W. Allen



Robert W. Allen



*ABOVE: NORTH END OF BEAR VALLEY RANCH
FRESH WATER LAGOON IN FOREGROUND
TOMALES BAY IN DISTANCE*



*BEAR VALLEY RANCH, POINT REYES STATION IN DISTANCE
FRESH WATER LAGOON BEYOND TREES*



Robert W. Allen

*OLEMA VALLEY, NORTH END
BEAR VALLEY RANCH*



Robert W. Allen

*OLEMA VALLEY
GIANT BAY
TREE BOLL*

and many herbs, such as thistles and other fragrant ones like those of Castile. ¹ He saw a number of partridges ² and a great quantity of deer horns. One of these which he measured was sixteen palms from tip to tip, with a number of points. ³ The country appeared to him to be well adapted to sow and reap any kind of seed, as it looked like the country of Castile and was of good character.

Suprisingly, very little attention seems to have been paid to Tomales Bay though Cermeño seems to make reference to it in his account: . . . There is also near where I went to seek food a branch of a river which runs into the sea". Presumably, he was using "river" in the same sense as used in his description of Drakes Estero.

It would have been logical for Cermeño to retrace his steps when leaving the Indian settlements at Olema Valley, though it is possible that he may have taken a different route to account for discovering the fresh water stream on the shore of the sea about a league before returning to his camp. However, by following the same route he could easily have seen the stream leading to Drakes Bay from the height of the spur above Laguna Ranch. Then on nearing the bay, he may have descended to it in order to ascertain its qualities as a watering place for ships or the camp.

The Declaracion recorded that on this day a quantity of thistles were brought back with which to sustain the survivors of the San Agustin. Having discovered that he could bring back a quantity of acorns and other food from the Lake Olemas villages, Cermeño went out with a second expedition on December 2nd with fifteen Spaniards with their arms in addition to the Negroes and Indians sent along on the first expedition. These were to bring back all of the food they could carry in order to provide further for the camp and particularly for provisioning of the launch.

1. Miss Alice Eastwood indentified the thistle as a species which grows near the coast, Cirsium edule, and suggested that the stems and leaves were cooked as greens, or possibly the seeds were eaten. She identified the herbs as probably being the yerba buena, Micromeria doublasii, and the wild pennyroyal, Monardella villosa, both of which are common in the region. Wagner, Spanish Voyages, p. 371.

2. Quail.

3. These were horns of the Roosevelt Elk.

DEPARTURE

On Friday morning, the 8th of December, the nearly eighty survivors from the San Agustin embarked in the launch, hopefully named San Buen-aventura, and started the 1500 nautical mile voyage to civilization. Apparently the course was laid to pass close to the Farallon Islands about a league on the mainland side; probably being abeam of the Southeast Farallon late in the afternoon. At nightfall the launch was hove-to awaiting daybreak, not far from the islands, as the distance made good was only 10 leagues or about 23 nautical miles.

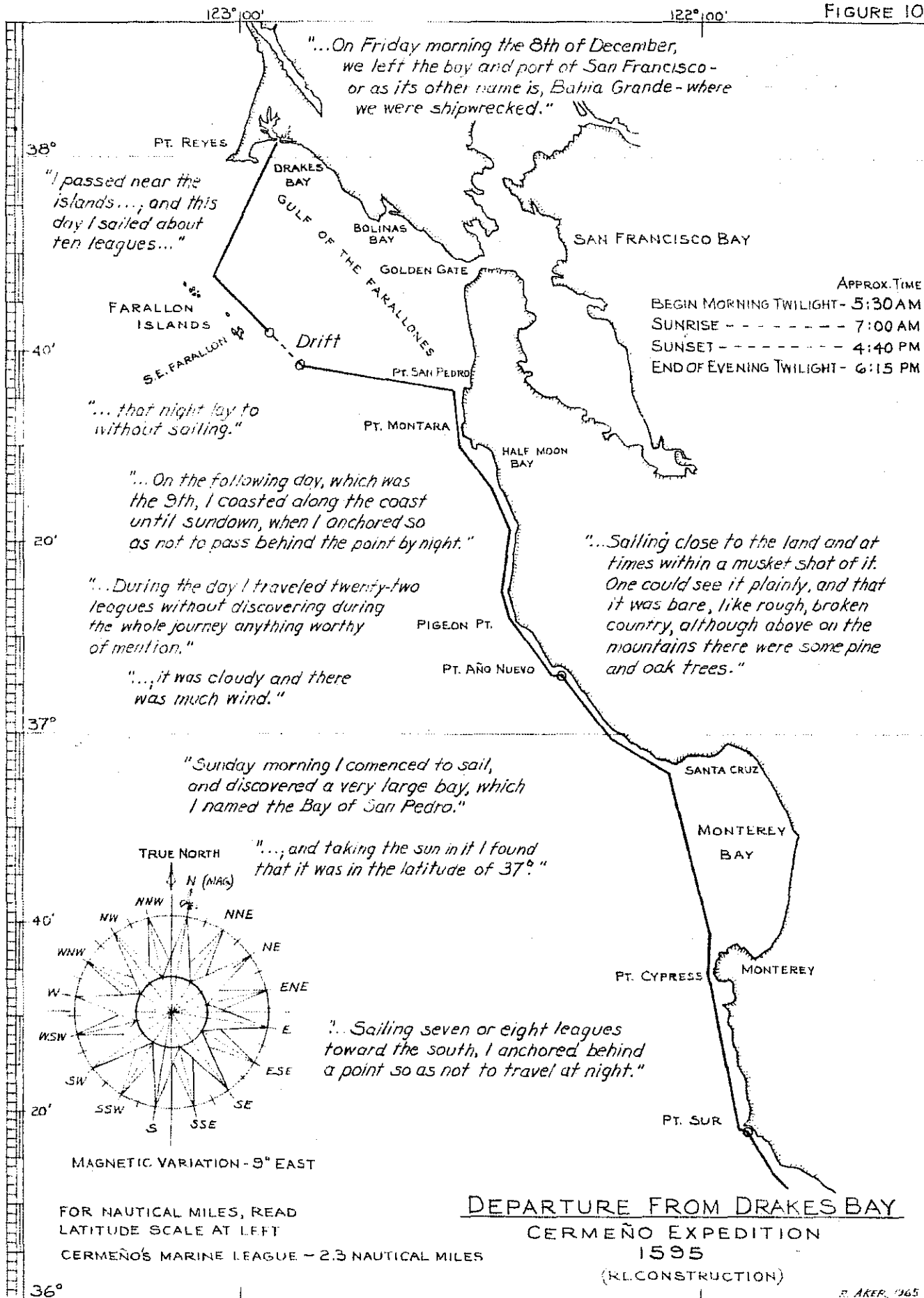
Why Cermeño did not explore the coast within the Gulf of The Farallones, but instead, kept well off shore, can only be surmised. Perhaps he thought that during his stay at Drakes Bay he saw all that there was to be seen in the vicinity and considered it more worthwhile to investigate the islands and check their position. The Farallones were later recognized by the Vizcaino expedition as a good navigational landmark by which the Manila galleons could recognize Point Reyes.

The following day, Saturday, December 9th, Cermeño coasted the San Mateo County coastline, at times as close as a musket-shot, or about a quarter of a mile, from the shore, and by sundown he reached Point Año Nuevo, where he anchored. There was a strong wind and the day was so cloudy he was unable to take an observation for latitude. He states that he sailed a great deal; 22 leagues or about 50 nautical miles.

It is interesting to note that if the distance sailed this day is run back from Point Año Nuevo to a position near the Southeast Farallon, it indicates that Cermeño headed inshore as soon as he made sail in the morning, and that he probably closed with the coast near Point Montara. At that time he may have been within a dozen miles of the Golden Gate; yet from the time that he left Drakes Bay, he was never able to see that there was a strait leading into the inland sea now known as San Francisco Bay.

1. Since the number of hours of daylight between sunrise and sunset for this time of the year is slightly more than nine and a half, some indication of the launch's performance with a strong wind in the open sea can be obtained by assuming that Cermeño was under sail about ten hours; getting underway a half hour or so before sunup. By this reckoning, he would have averaged about 5 knots from the Southeast Farallon to Point Año Nuevo. December 10th, he crossed Monterey Bay with favorable weather and made slightly more than the distance sailed the day before; From Point Año Nuevo to Point Sur, close to 55 nautical miles with a moderate wind and sea. The reconstruction of

(continued on next page)



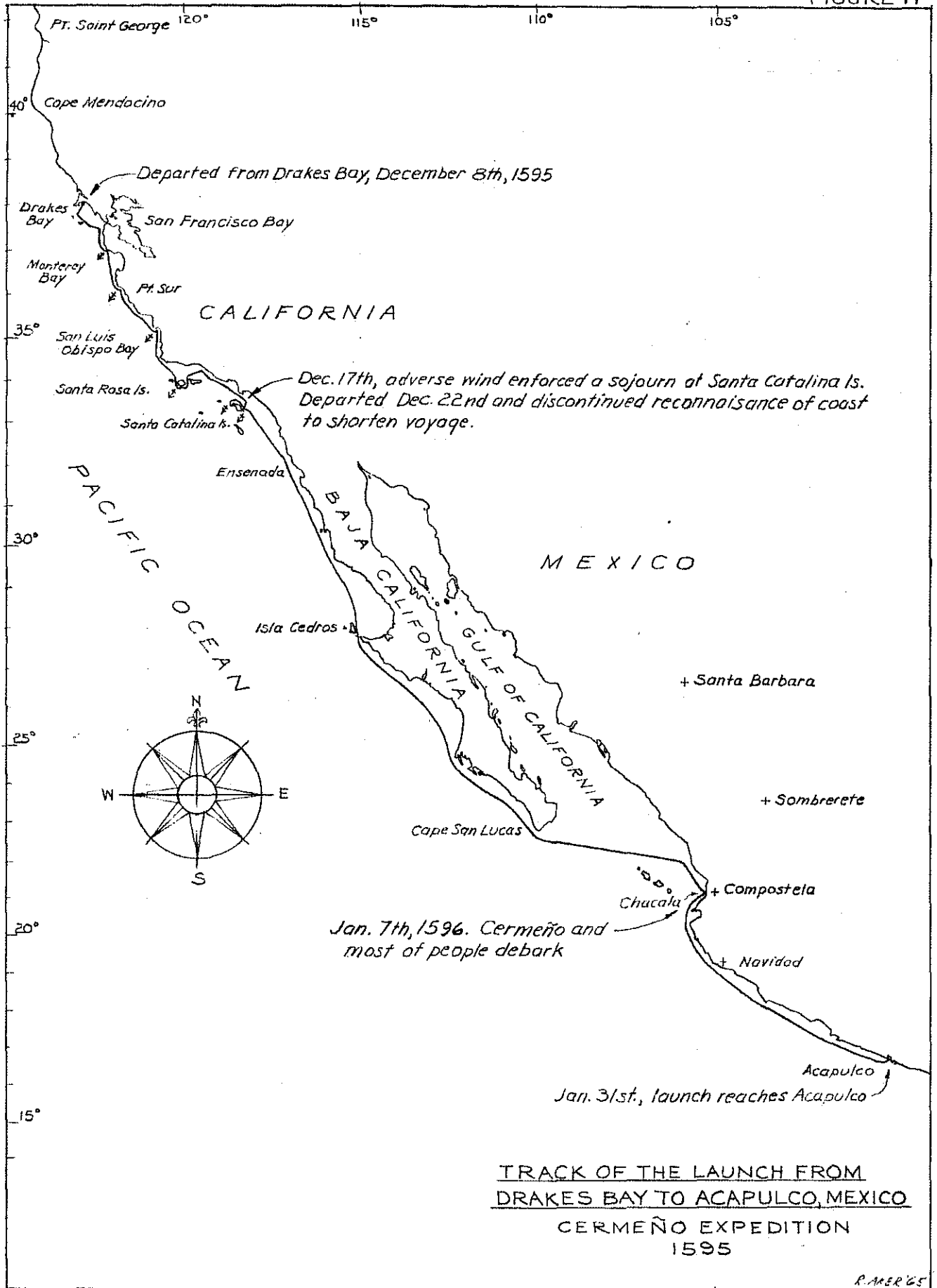
Ironically, Cermeño wrote that the land could be plainly seen, and the general aspect of the coastline is accurately described - bare near the sea, rough, broken country with pine and oak on the mountains. It is tempting to speculate that there is a hint of skepticism towards Morena's account of discovering the Strait of Anian when Cermeño wrote that he had sailed all of this day without discovering anything worthy of mention. It is probable that Cermeño's report was the reason for the scant attention paid to the Gulf of the Farallones by Vizcaino.

On Sunday morning Cermeño discovered and crossed Monterey Bay, which he named the Bay of San Pedro, and that evening anchored behind Point Sur. In spite of the hardship he and his people were now beginning to suffer, he faithfully attempted to reconnoiter the coast as much as he could until an adverse wind forced him to shelter a few days at Santa Catalina Island. After leaving this island on December 22nd, he was compelled because of food shortage and sickness among his people, to make the best speed possible by sailing at night as well as day, still keeping to the coast, but with no delays to explore bays, ports, or other features.

On the 7th of January Cermeño arrived at a ranch on the coast of Mexico about a league from Chacala, and he with most of his people disembarked. The launch, under the command of Juan de Morgana, was dispatched to Acapulco, arriving safely the 31st of January.

(continued from previous page)

the Mayflower's shallop, a 33 foot double ender, was found to average 5 knots on a reach in a 10 to 12 knot breeze and in heavier winds she occasionally reached 8 knots. See William A. Baker, Colonial Vessels,p.50.



TRACK OF THE LAUNCH FROM
DRAKES BAY TO ACAPULCO, MEXICO
 CERMEÑO EXPEDITION
 1595

APPENDICES

APPENDIX I

THE ACCOUNT OF SEBASTIAN RODRIGUEZ CERMEÑO

The following is that portion of Cermeño's own account of his voyage dealing with his exploration on the coast of Northern California and of his return to Mexico from Drakes Bay from the translation by Henry R. Wagner, published in the California Historical Society Quarterly, Vol. III, 1924. Wagner's comment on Cermeño's account, which is given in his book, "Spanish Voyages to the Northwest Coast of America in the Sixteenth Century," is pertinent here and quoted in part as follows:

"With few exceptions all the documents relating to this expedition will be found in two files in the Archives, 58-3-11 and 58-3-12, the first containing the correspondence of Velasco, and the second that of the Conde de Monterey. The latter with his letter of April 19, 1596, enclosed a copy of Cermeño's narrative, the Declaracion¹ made by him and the autos² of the information of the character of the land and the verification of the character of the country, both referring to the expeditions inland at Drakes Bay. There is another copy of Cermeño's narrative in 58-3-16, which differs slightly from the one in 58-3-12. It is undoubtedly a somewhat later copy and contains some errors. Both appear to be signed by Cermeño, they certainly have the same signature, which is not in either case in the same handwriting as the narrative. As there is no rubrica³ attached to the signatures, however, some doubt may be entertained as to whether they are really his. The name seems to be spelled Sermenyo or possibly Zermenyo. In his Declaracion the name invariably appears as Sermeño; in the correspondence, however, it is spelled Cermeño, and as that form has been long in use, it has been adopted in this book, in order not to occasion any confusion. For the same reason he is not referred to as Rodriguez, which was his real name, Cermeño, no doubt having been his mother's name."

" In the April, 1924, Quarterly of the California Historical Society, the writer published translations of Cermeño's narrative, with the exception of the first part of which a summary was made, and of the two autos about the character of the country at Drakes Bay. In the footnotes such extracts from the Declaration of Cermeño were embodied as added anything to his narrative."

-
1. A solemn statement made by witnesses not under oath, but subject to prosecution for perjury.
 2. A statement of a witness obtained under oath.
 3. A marking or writing in red to indicate authenticity.

Account of Rodriguez Cermeno, continued.

The first part of Cermeño's account was summarized by Wagner in abstract form to avoid a tedious narration of daily courses and distances from Manila to California. Cermeño's orders apparently required him to begin his exploration of the California coast at 42° latitude. On reaching 42° on October 22nd, he was more or less successful in running along this parallel until he reached the coast. Wagner begins Cermeño's full account on October 29th in full 42° latitude:

Sebastian Rodriguez Cermeno

"Here we encountered cloudy weather, a calm sea and a favorable wind. By night I did not sail as we were near the land and feared running ashore, and kept casting the lead continuously until Saturday morning, the 4th of November, when the land and coast of New Spain appeared. The land which appeared was between two capes, about twenty leagues apart. From the western part the coast trends north a quarter northeast.

"It was the hour of the angelus when we came within a league of the land, which appeared mountainous and heavily forested with trees which could not be distinguished. Among them were many pine trees growing very thickly near the sea and inland, which were made out as we went coasting along near the shore (to see) where there might possibly be found conveniences and a safe port in which to enter and make the launch with which to prosecute the reconnaissance. Many fires were seen that night on the coast and inland.

"Complying in every respect with the orders and instructions from His Majesty which I carried for the purpose, running along the coast, at five o'clock and before reaching the land I began to sound and found seventy fathoms, and went on until the lead showed twenty five fathoms, when we were a league from the land, as stated above.

"As it was now night, in order to see by daylight what the coast and the land had to show I ran close-hauled till after midnight, when I returned to get near the land; and running along it I found it very rough and dangerous, as there was a heavy surf breaking on numerous small islands and reefs near the shore, so that it was not possible to approach nearer the land.

"Coasting along about half a league from land, a reef was discovered which might be about a league in the sea, which was Cape Mendocino (This was so) because from there the coast runs southeast, and in the other direction, from the west (point) it runs north a quarter northeast. Following along with all sails set so as by daylight to see if a port could be discovered and reached in which to enter, a point of land was discovered with two small islands outside which seemed to make a port as it formed inside a small cove. While entering this it was seen that within where the ship would have to anchor were some low rocks, large and dangerous. This having been seen, the ship turned back and went coasting along while day lasted, and at night I ran out to sea.

"That night the wind came up strong from the northwest and the sea came on our beam, and from midnight on it blew so strong that it was necessary to strike the foresail. As the weather was severe, we kept getting near the land, and having reached it, a morro was discovered,

Account of Rodriguez Cermeño, continued.

which makes a high land and seemed like the Punta del Brazil of Tercera.

"Running along a musket-shot from the land, we saw a point which bore northwest, and entering by this we saw that there was a large bay. Here I went on casting the lead, with the bow headed north a quarter northeast, with the bottom of the sea of sand and clean, and went to seven fathoms, where I anchored. The point on the west side bore south-west quarter west, and the one on the east, south-southeast. The bay is very large and shaped like a horseshoe, and a river runs into it, and on the bar at high ^{tide} there are three fathoms of water, and from the bar outside to the entrance of the anchorage there is a distance of two shots of an arquebus.

"Having anchored in this bay, we saw in the middle of it three small islands which bore south-southwest, and to the south a small island of half a league in size. The islands trended northwest-southeast. The land is bare. The river above referred to enters into the land three leagues and has a narrow mouth, while above in some parts it is a league in width, and in others a half a league. On the west side it has two branches of half a league each, and on the east side one, the entrance of which is a matter of a quarter of a league from the bar. Entering by this one, you will find fresh water on the right side, which comes from another river with a plentiful supply of water, and where this falls in there are Indians settled. They are well set up and robust with long hair, and go entirely naked, only the women wearing skirts of grass and deerskins. Any place where there are sandbanks near the sea you can find drinking water by digging down a little distance."

"Having anchored in this bay on the 6th, shortly an Indian, one of those living on the beach, came out in a small boat made of grass which looks like the bullrushes of the lake of Mexico. The Indian was seated in the middle of this, and he had in his hand an oar with two blades with which he rowed with great swiftness. He came alongside the ship, where he remained a good while, talking in his language without anyone understanding what he was saying. Being addressed with kind words, he came closer to the ship, and there we gave him things such as pieces of silk and cotton and other trifles which the ship carried, and with which he returned to shore very contented. The next day, the 7th, four other Indians came out to the ship in the same kind of boats. They came aboard and did the same as the first one.

"In order to see the character of the land and put in hand what was contemplated, namely, the building of a launch to prosecute the discovery, I sent in the ship's boat twenty-two men, seventeen of them armed with arquebuses and three with shields, and the ensign and the sergeant. I went ashore with it and landed on the beach, where I found near by many Indians-men, women, and children, who had their dwellings there. These were pits made in the sand and covered with grass, in the manner of the Chichimecos Indians. They had bows and arrows, and we could find no other kind of iron with which to cut a

Account of Rodriguez Cermeño, continued.

weapon or anything else. The people were painted in certain parts, although the paint is not so thick as with the Chichimecos.

"The land seems fertile as far as three leagues inland, according to what I saw and what the other Spaniards saw whom I took with me to seek food, of which there was need on account of the loss of the ship. The soil will return any kind of seed that may be sown, as there are trees which bear hazelnuts, acorns and other fruits of the country, madrones and fragrant herbs like those in Castile. There is also near where I went to seek food a branch of a river which runs into the sea, and near the camp are other arroyos of fresh water about two musket shots from the sea. There are also in the country a quantity of crabs and wild birds and deer, with which the people maintain their existence. And this is put down in the declaration, and I have knowledge of it as a person who twice went inland to seek food, as we had none.

"On Friday morning the 8th of December, we left the bay and port of San Francisco - or as its other name is, Bahia Grande - where we were shipwrecked. This bay is in $38 \frac{2}{3}^{\circ}$, and the islands¹ which are in the mouth (of the bay) are in $38 \frac{1}{2}^{\circ}$, and from one point of the bay to the other there may be a distance of twenty-five leagues. I passed near the islands and about a league more or less from the land; and this day I sailed about ten leagues and lay to during the following night. On the following day, which was the 9th, I coasted along the coast until sundown, when I anchored so as not to pass behind the point by night.² Up to this point the coast runs northwest and southeast. I did not take the sun during the day because it did not appear; it was cloudy and there was much wind. During the day I travelled twenty-two leagues without discovering during the whole journey anything worthy of mention. Sailing close to the land and at times within a musket-shot of it, one could see it plainly, and that it was bare, like rough broken country, although above on the mountains there were some pine and oak trees. The land seemed to be unpopulated, as no people were seen on it in the day time, and at night there was no smoke nor fire.

"Sunday morning I commenced to sail, and discovered a very large bay, which I named the bay of San Pedro.³ It measures from point to point across the mouth a distance of fifteen leagues travel; and taking the sun in it I found that it was in the latitude of 37° . Sailing seven or eight leagues toward the south, I anchored behind a point⁴ so as not to travel at night.

-
1. The Farallon Islands.
 2. Probably Point Año Nuevo.
 3. Monterey Bay
 4. Point Sur.

APPENDIX II

THE DECLARATIONS OF SEBASTIAN RODRIGUEZ CERMEÑO

The accounts which follow are the translations from Henry R. Wagner's book, "Spanish Voyages to the Northwest Coast of America in the Sixteenth Century". These are of particular interest as being first hand accounts, termed here Declaraciones, made by Cermeño and others on the expedition to Pedro de Lugo, scrivener to the king, who appears to have accompanied this voyage acting in the capacity of a Notary. He identifies himself in the notations made for November 15th, on which date he was with Cermeño on an exploration of Drakes Bay.

Cermeño's own Declaracion transmitted to the scrivener begins at the time that his exploration of the California coast begins, November 4th, and continues as a running account until he reached Puerto de Chacala in Mexico with the launch. His account is concluded and signed; All this, I the scrivener, certify to, being present as witnesses Don Garcia de Paredes, Andres de Porras, and Juan del Rio, the ensign. Sebastian Rodriguez Sermeño, before me Pedro de Lugo, scrivener of the King. For this purpose I here make my sign in testimony of the truth.

Pedro de Lugo, scrivener of the King

After the wreck Cermeño had several of his people make Declaraciones to the scrivener at Drakes Bay (Puerto y Bahía de San Francisco) as to what they had witnessed with respect to the character of the land.

The events which followed Cermeño's arrival at Chacala are of interest as pertaining to the narratives, and Wagner's account of these is quoted as follows:

"The launch under the command of Morgana arrived at Acapulco January 31, with only four sailors, five Indians, and a Negro. The officials visited the boat, finding nothing on board and the men almost naked. Morgana gave under oath an account of the voyage and the loss of the ship, stating that a Franciscan and other persons on board had been drowned when she struck and went to pieces.

"The rest of the party having disembarked at Chacala, must at once have gone to Compostela, nearby, from where the officers or such as were able to travel, went to Guadalajara, where an investigation of the affair was made by the Audiencia. It is probable that at that time the various autos which had been made during the voyage were presented. Included in these were no doubt the Declaracion just translated, one made about the wreck and the various written demands on the Captain, now lost. After the officers reached Mexico City, the Viceroy, conducted another and found the officers were blaming each other for the disaster. He examined Cermeño in the presence of the master and the boatswain, who he said were both very expert, and although they agreed in some matters, they differed in others. On the whole, he felt that Cermeño had not failed to comply with his obligations, but if after further investigation

Declarations of Sebastian Rodriguez Cermeño, continued.

anyone in particular seemed to be to blame he wrote that he would punish him, although he felt very sorry for their sufferings and the loss of so much property. He was of the opinion that Cermeño had crossed the bays from point to point, and most of those where a port might be found at night, due, however, to the hunger and sickness which had made them hasten the voyage. On the whole, he considered that the intention of the King had not been complied with, and all thought that the voyage of discovery should not be made with a loaded ship on the return voyage from the islands, but upwards to the north from the coast of New Spain.

"In addition to the letter of the officials at Acapulco regarding the loss there is extant a letter from the Audiencia dated Mexico, March 5, 1596, stating that the vessel was lost in $28^{\circ}(38^{\circ})$, that twelve were drowned, and that all the goods were lost. Rivero, one of the oydores,¹ wrote the following day that seven men were drowned. Bolaños, who was probably either the master or boatswain,² afterwards accompanied Vizcaino, and in his Derrotero³ states (speaking of Pt. Reyes and the bay) that there was a very good refuge from the south and southeast winds in a corner at the southwestern part of a small bay, formed by the eastern extension of the point. He adds that the San Agustin was lost in the bay and that this was caused more by the fault of the Captain than by bad weather. It is to be regretted that the auto made after the loss has not been found."

The latitude given in the above paragraph as 28° in which the San Agustin was lost may not have been an error but rather a deliberate attempt to conceal the location of the wreck from salvagers.

In addition to the auto made by Juan del Rio, the ensign, at Drakes Bay, there are three more declarations almost identical to his. They were made by Juan Gutierrez, the sergeant, Juan de Morgana, and Domingo Francisco, a sailor. The sworn declaration made in

-
1. Hearer, a judge of the Audiencia or Supreme court of Mexico.
 2. Father de la Ascension, who also accompanied the Vizcaino expedition, describes Bolaños as being one of the sailors on the ship with Cermeño.
 3. Coast Pilot, a book containing descriptions of coast lines, harbors, dangers, information of winds, currents, tides, and other information of interest to mariners.

Declarations of Sebastian Rodriguez Cermeño, continued.

Acapulco by Juan de Morgana, Cermeño's pilot, was forwarded to the Viceroy by the royal officials of the port, February 1, 1596, but it is now lost. The statement concerning him was obtained from the letter which accompanied it.

Declaracion:

"In the ship, San Agustin, which arrived at Cabo Mendocino, on the new discovery of the coast of New Spain Saturday morning, November 4, 1595, before me Pedro de Lugo, scrivener of the King, our master, and the witnesses, Sebastian Rodriguez Sermeño, captain and chief pilot of this new discovery for the King, our master, in virtue of a royal provision dispatched for that purpose by Don Luis de Velasco, member of the Order of Santiago, viceroy, governor and captain-general of New Spain, declared: That in compliance with this provision he had been dispatched from the Puerto de Cabite of Manila by Don Luis Perez Dasmarias, governor and captain-general there, in the ship San Agustin, the property of Captain Pedro Sarmiento, who offered it for the purpose of making the discovery, as is recorded in the documents executed in the matter and which he has in his possession and to which he refers. Having set sail from that port, July 4, of this year, he had come prosecuting his voyage and a straight course and had gone up to the greatest latitude which the weather permitted.

"Having reached the latitude of 42° on a coast trending north-south and where the end of the land bore north a quarter northeast, the highest latitude reached, he went in pursuit of his voyage until the present day, November 4, when he came in sight of land, the coast of New Spain. Approaching this as much as he could on that day, until he came within two leagues of it, a little more or less, and having cast the lead for the first time, he found seventy fathoms of water. He went on casting the lead in this manner until he found himself in eighteen fathoms of water and about half a league from land. As night was coming on, he ordered the sails taken in and the ship remained beam to the sea until the following morning, the 5th of the month, when he hoisted them and went following along the coast. The night before, when he sighted land, he saw on it some smoke and fire. Proceeding, he saw that the coast was very bold and dangerous because of a heavy surf caused by the many small islands and reefs near the land. It was thus impossible for the ship to approach nearer shore. Coasting along about the same half a league from land a reef was discovered which might be about a league at sea. This which was Cabo Mendocino was rounded, and the ship again approached land as before. Having ordered two men to the tops to look about to see if there were any reefs ahead, a point of land was discovered with two small islands off it. This appeared to be a port as it made a small ensenada. While entering this, the men in the tops saw some great dangerous rocks where the ship would have to anchor. Shouting this out, the ship bore away and stood off to sea away from land, as night was coming on. While

Declarations of Sebastian Rodriguez Cermeño, continued.

sailing, a heavy wind and sea came up at ten o'clock, which made it necessary to lay the ship's beam to the sea. This was done with so much labor in the ship, that in the whole course of the voyage no such great storm was encountered as blew that night and until the following day, the 6th, when sail was made in the direction of land, with only the lower foresail and without the bonnet, both the ship and the men suffering greatly on account of the strong gale and the heavy sea.

"In view of the great danger in which the Captain and Chief Pilot was putting the ship and the men, as she was very small and almost open, making it necessary to devote two out of three watches to the pump, and terrorized at the danger of the day before while entering the port, the pilot master, and boatswain made a written demand on him to run with the wind and proceed on his voyage to Acapulco as it was impossible to prosecute the discovery by reason of the ship's being in such a badly battered state, as is on record more fully in the said demand which they made before Alonso Gomez, the scrivener of the ship. Notwithstanding this, Captain Sebastian Rodriguez kept on approaching land and the weather kept improving.

"Being now near land, like the day before, he went on following the coast. He ordered some men to the tops to look about and see what was ahead. About midday a point of high land was discovered which revealed a great ensenada, in which he entered, sounding with lead from forty fathoms down to five where he anchored the ship. This can be taken to be the depth of the whole bay, as after doubling the point this depth of five, six, and seven fathoms and no more was never lost. The bottom is clean and of fine sand. The ship anchored in the bay and port about a quarter of a league from shore. Along all the coast which the ship followed after discovering land until she anchored, there were many fires near the sea, and many forests of pines inland from which it may be concluded that it is inhabited by people.

"On the day in which the ship anchored in the bay, about four o'clock in the afternoon, many Indians appeared on the beach and soon one of them got into a small craft which they employ, like a cacate of the lake of Mexico. He came off to the ship where he remained quite a time talking in his language, no one understanding what he said. Some cotton cloth and silk things were given him and a red cap. He took them and went back to land. Early the next morning the 7th, four other crafts like the first came out from land to the ship, and in each one was an Indian. They came along side where they remained some time talking in their language. Captain Sebastian Rodriguez gave each of them some cotton cloth and taffetas and entertained them the best he could. They went ashore and the Captain at once embarked in the ship's

Declarations of Sebastian Rodriguez Cermefio, continued.

boat with twenty-two men, seventeen being harquebusiers with their arms. Accompanying him were Captain Francisco de Chaves and his ensign, the sergeant and the corporal and three men with shields. These went ashore with the Indians and landed on the beach of the port near some of their underground habitations, in which they live, resembling caves and like those of the Chichimecos Indians of New Spain. They are well-made people, robust and more corpulent than the Spaniards in general. They go naked without covering and with their private parts exposed, but the women cover theirs with straw and skins of animals. Their arms are bows and arrows. They wear their hair long and have no beards; any one who has any removes it. They are painted on the breast and on certain parts of the arms, but the paint is not so decorative as with the Chichimecos.

"On the same day that the Captain went ashore with his men, he asked all to witness that he took possession of the land and port in the name of the King, our master. He gave it the name 'La Baya de San Francisco,' and the Reverend Father Fray Francisco de la Concepcion of the Order of the barefoot Franciscans, who comes in the ship, baptized it. The Captain, with his ensign, Juan del Rio, carrying the banner, and the sergeant with the men in order went marching to a village which is about a harquebus-shot from the beach. Here all the Indian men and women, perhaps fifty all told without counting children, were looking on with great fright in seeing people they had never seen before. They were all very peaceable and their arms were in their houses, it not being known up to that time that they had any. They produced a seed the shape of an anise seed, only a little thinner, and having the taste of sesame, of which they make the bread they eat. Their food consists of crabs and wild birds, which are in great abundance near where they live, and many deer, as these have been observed going about. They are beyond comparison the largest that have been seen as will be apparent from the horns which were found, of which the Captain carries a sample.

"As the Captain with his men was proceeding the same day from the settlement, about half a league distant inland a band of Indians appeared who approached in a warlike manner, for as soon as they saw the Spaniards they performed a caracole and skirmished in a circle, like the Chichimecos, with loud howls. Shortly, one of them who carried a tall banner of black feathers began to advance towards where the Spaniards were, and having looked them over stopped to view the men. Two Indians, of the friendly ones who were being treated well, talked with them and soon they lowered their arms, put them on the ground, and came towards the Spaniards. The one who carried the banner brought and delivered it to the Captain and all the other Indians approached in an humble manner and as if terrorized, and yielded peacefully. He made much of them, embracing them and giving them some of the taffeta sashes which the Spaniards

Declarations of Sebastian Rodriguez Cermeño, continued.

wore. So the Spaniards came up to them, embracing them and they took their bows and arrows and gave them freely to the Spaniards. They all had their faces painted and annointed in black and red. The Captain and the Spaniards went on until they reached a hill from which the Indians had come down, in order to see if there was any other settlement. On arriving at the top they saw coming an Indian man and a woman who was carrying a child. The Indian had some acorns for his food. These, without showing any fear or running away, came up to the Spaniards and the Captain made much of them and entertained them. The Indian treated the Spaniards to his acorns and the Captain declared that no one should do them any harm or take anything away from them. This done, they returned, going around the whole hill and down to the beach with all the men. Here he fixed his camp and made an entrenchment for defense and to put in hand at once the launch which had to be made for the discovery, having journeyed this day about three leagues. Here Indians from nearby kept coming and the chief talked a long time. When he had finished the Captain made much of them, giving to each pieces of cotton and silk. They remained a good while and then went away without doing anything. All were naked like the rest.

"November 15, the Captain embarked in the ship's boat with eight armed Spaniards, and I, the scrivener, went with them. He went up an arm of a river, one of three which empty into the bay and port, to discover what was in them. This one makes a bar on which at high tide there were about three fathoms of water, and from the shoal outside to the anchoring place the distance is two harquebus-shots. One of the rivers is large and enters the land about three leagues. The mouth is narrow and near it there is a settlement of Indians of the same class as those above mentioned. A little farther on there is another of a few people near the water and at quite a distance from these there is another of naked Indians who had their dwellings on a hill. They did not appear to have any arms. This river in places may be about a league wide and in others a half a league. On the west side there are two branches of a half a league each, and on the east side one about a quarter of a league from the bar. On entering this, there is on the right side sweet water which comes down from a copious river, at the entrance of which Indians are settled with their women, well-made people and robust as has been stated. Water good for drinking purposes can be found by digging down a little in any place where there are sand banks near the sea.

"November 30, the ship San Agustin having been lost with the food supply in her, the Captain left the camp with eleven Spaniards and some Indians and slaves with their arms on an expedition inland to hunt for food to sustain those who had survived the wreck, as there was nothing to eat. Having journeyed three leagues they found three villages of Indians of the same class and character as those above described, who

Declarations of Sebastian Rodriguez Cermeño, continued.

were settled somewhat apart from each other on an arm of a river of sweet water on the banks of which there were many trees bearing acorns, hazelnuts of Castile, and other fruits of the country, madrones, thistles and fragrant herbs. From here they brought that day and on another day, December 2, a quantity of thistles with which the men were sustained and which was to be taken in the launch.

"Friday morning, December 8, the day of the Limpia Concepcion de Nuestra Senora, Captain Sebastian Rodriguez departed from the Puerto y Bahía de San Francisco which is in $38^{\circ} 40'$, the islands outside being in $38\frac{1}{2}^{\circ}$, in the launch which he built for the discovery named the San Buenaventura. He passed close to the islands on the mainland side about a league away. This day he sailed about ten leagues, and that night lay to without sailing. The next day, Saturday, December 9, he went sailing along the coast until sundown, when he anchored in order not to pass behind a point after nightfall. All this coast up here trends northwest-southeast. No observation was made of the sun because it did not appear, as the day was cloudy and there was a strong wind. He sailed a great deal, perhaps twenty-two leagues, without discovering in all this distance anything worth noting down. In going along very close to land, frequently only a musket-shot from it, all that may be seen is bare land near the sea and pine and oak timber in the high country. No smokes or fire appeared. After departing from this port on Sunday morning the 10th, he made sail with favorable weather and discovered a very large ensenada which bore to the east and southeast, all a bold coast. This day he observed the sun at midday in 37° . From the mouth of the ensenada the land bore to the south."

(The voyage continues to Acapulco)

"All this, I, the scrivener, certify to, being present as witnesses Don Garcia de Paredes, Andres de Porras, and Juan del Rio, the ensign. Sebastian Rodriguez Sermeño, before me Pedro de Lugo, scrivener of the King. For this purpose I here make my sign in testimony of the truth."

Pedro de Lugo, scrivener of the King.

DECLARATION- LOSS OF SHIP AND DECISION TO SEARCH FOR FOOD

"In the port and bay of the new discovery of Cabo Mendocino in the camp of Santa Fe, November 30, 1595, before me Pedro de Lugo, scrivener of the King, our master, Captain Sebastian Rodriguez Sermeño, the chief pilot of the discovery, declared: That by reason of the loss of the ship San Agustin which he brought, while at anchor in the said

Declaration - Loss of Ship and Decision to Search for Food, continued.

port, and which Captain Pedro Sarmiento offered to the King in the City of Manila, without having been able to save any of the food supplies or other property on board as is recorded in the investigation made this day, and for the further reason that there are almost eighty people to feed and no food to give them nor to carry in the launch which is being finished and in which they have to go, and as he has news that there is food near the camp with which they can be supplied, and having taken the opinions of those persons whom he had to consult, it was agreed that it was advisable for the good of all and for the service of the King to go in search of food, leaving in the camp in his place as lieutenant, Captain Francisco de Chaves, a person worthy of full confidence, to give the orders and commands necessary to finish the work lacking on the launch and other things which might occur during his absence, and twenty armed Spaniards to remain with him, guarding the launch and the camp, all of whom should obey him and follow his orders as if he were the captain himself. He took with him to hunt for food and bring it back Don Garcia de Paredes and the pilot, Juan de Morgana, who offered to go with him, Juan del Rio, his ensign, Sergeant Juan Gutierrez, Corporal Francisco Rolon, Francisco de Bolaños, Juan Bautista, Francisco de Cea, Sebastian Perez, Gonzalo Hernandez, Pedro de Chaves, four slaves of the Captain whom he offered to take for the service of the party (leaving behind the other three who were sick), and seven Indian ship boys, part of those on the ship, all equipped in the best possible manner with their arms to defend themselves. Thus the Captain departed from the camp with all these men with this design, for it was advisable to do so for the well-being and maintenance of all the men in the camp. Sebastian Rodriguez Sermeño thus arranged matters and signed this before me, Pedro de Lugo, scrivener of the King.

"After this had occurred, Captain Sebastian Rodriguez returned from his search for food for the men he had in his camp, having discovered on the day he set out a place near it from which he could bring a quantity of acorns and other things with which he could relieve the necessities which at present all the men lacked, as they had nothing to eat. He found it in a settlement of 150 Indians who at once declared themselves to be friends and made peace. Where they were settled there were a number of trees which bear acorns and other foods and fruits with which they could sustain themselves. He decided, December 2, to send out to bring in this food, and for that purpose appointed Juan del Rio, his ensign, who shall take with him fifteen Spaniards with their arms to bring all the food they could, besides the Indians and Negroes sent along for the same purpose. Thus he provided and ordered and signed with his name, and as it was deemed advisable for the Captain to go to carry out what was agreed to in this auto, he went personally. To this I certify, Sebastian Rodriguez Sermeño."

Before me, Pedro de Lugo, scrivener of the King.

DECLARATION-DESCRIPTION OF INTERIOR AT DRAKES BAY

"In the port and bay of the new discovery which was named "San Francisco", Captain Sebastian Rodriguez Sermeño, chief pilot of the discovery, on December 6, 1595, declared:

"That he had gone inland some four leagues to hunt for and bring back food for the maintenance of the men under his charge, who were without it by reason of the loss of the San Agustin, from which nothing could be saved, and had discovered three separate settlements of Indians - men, women, and children. They were in their houses, which are similar to low caves, on the bank of a branch of a river of sweet water where there were a number of trees bearing acorns and another fruit, the vedona, the shape of a hazelnut, and hazelnuts like the Castilian. There were other trees bearing fruit, thistles, and odoriferous herbs like those of Spain. The land is well fitted and appropriate for growing any kind of seed which may be sown in it, by reason of the quality of the soil and the temperature as without any artificial aid it produces what has been noted. Since it is advisable that those persons who accompanied him and saw it should declare what they know about it, and in order that there may be a record of this and of the character of the country seen and discovered, and an information about it should be received, he therefore so provided and signed it, Sebastian Rodriguez Sermeño."

Before me, Pedro de Lugo, scrivener of the King.

Juan del Rio, Cermeño's ensign, adds some additional information to the first of the above forays.

"This witness went with Captain Sebastian Rodriguez inland the first time with twelve other Spaniards and some Indians with their arms to hunt for some food to sustain the men who survived the wreck of the San Agustin, as the whole food supply had been lost in her, not a thing being saved, and having traveled inland some three or four leagues, they discovered in a little valley some trees bearing a quantity of bitter acorns. From there he saw some smokes among some trees, and all being in accord they went towards them. Having reached the place where the smoke was, they found a number of Indians settled, perhaps (100 ?) altogether, men women, and children. Some of them had bows and arrows. While they were with them, twenty other Indians came up, who were settled on the beach near where the launch was being built and the camp. These had left because some wood had been taken from them, which they had gathered up from what came from the ship. They had taken up their bows and arrows to defend themselves from the Captain, Don Garcia de Paredes, and Juan de Morgana, the pilot, who had gone to take the wood away from them. Some people coming up on our side to help them, the Indians fired some arrows at the Spaniards and one of them planted an arrow in the breast of a Spaniard which

Declaration- Description of Interior at Drakes Bay, continued.

wounded him. They then fled, and the food which they had, about a sack and a half of dry, bitter acorns, was taken away from them. If it had not been for this, all the men would have suffered and died. These twenty Indians are those who took the Spaniards to their settlement nearby, where they gave them some of the food they had, acorns, a fruit the shape of a hazelnut, and other things to eat. These settlements are on the bank of a lagoon of fresh water. This witness went about inspecting the quality of the land and its character, and saw not only on the bank of the lake but in the little valleys many trees bearing acorns and many other kinds of food, on which the natives lived, hazelnut trees, like those of Castile and many herbs, such as thistles and other fragrant ones like those of Castile. He saw a great number of partridges and a great quantity of deer horns. One of these which he measured was sixteen palms from tip to tip, with a number of points. The country appeared to him to be well adapted to sow and reap any kind of seed, as it looked like the country of Castile and was of good character. About a league before reaching camp on their return, the Captain discovered a stream of very good sweet water on the shore of the sea. This witness drank of it and it was good. This is the truth and what he knows under his oath; he affirmed and ratified it and declared that he was forty-six years of age, a little more or less, and did not sign because he did not know how."

Before me, Pedro de Lugo, scrivener of the King.

APPENDIX III

THE ACCOUNT OF FATHER DE LA ASCENSION

Although Father de la Ascension was not with Cermeño, he did accompany Vizcaino when the latter made an exploration of this coast to continue the work begun by Cermeño. One of Cermeño's sailors, Francisco Bolaños, was Chief Pilot with Vizcaino, and with him Father de la Ascension wrote a derrotero, or coast pilot, for the California coast. He was in a good position to obtain his information first hand from Bolaños relative to the loss of the San Agustin. The abstract of the account which follows is from Henry R. Wagner's book, "Spanish Voyages to the Northwest Coast in the Sixteenth Century", Chap. XI, p. 249. Wagner writes that very few clues to the date of its composition can be obtained. It is not the diary which he kept on the voyage, but it bears every evidence of having been written for publication some little time after the return.

Fr. de la Ascension

"The reason why the General entered the Puerto de San Francisco was to examine and sound it, and to see if he could find any trace of the ship San Agustin, which had been wrecked there in 1595 by being driven on the coast by a wind blowing directly on shore. This ship had been despatched from the Philippines on the exploration which this fleet was now making and which is treated of in this account, by Governor Gomez Perez de las Marinas, at the order of His Majesty and the then viceroy of New Spain, Don Luis de Velasco. Aboard that ship was a small fragata¹ in sections which, on sighting Cabo Mendocino, was to be set up in the first port found and provided with men and everything necessary to make this exploration, as it was a business easier to so carry out since they would have the northwest wind in their favor. The Governor committed the matter to the pilot, Sebastian Rodriguez Cermeño, giving him an instruction about what he had to do and charging him to perform the task with very great care and fidelity, as His Majesty had sent an order that it should be done in all events. While they were setting up the fragata in this port an onshore wind came up which drove the ship upon the coast, and she was lost with what property she contained. One of the sailors on the ship was Francisco de Bolanos, now the chief pilot of the Capitana² of our fleet. He recognized the port and had the Capitana enter it, claiming they had

-
1. A fragata was a small, three mast, single decked sailing vessel sometimes provided with oars which could be used in case of necessity. They were usually about twenty to thirty tons burden.
 2. The Capitana was a ship of 200 tons named the San Diego. Her tonnage makes her of similar size to Cermeño's San Agustin and Drake's Golden Hind.

Account of Father de la Ascension, continued.

left on shore on that occasion a quantity of wax and many cases of silks, and that it might be that something of the great quantity then lost might be found on the coast. The Capitana anchored in the port behind a point of land which was named "Punta de los Reyes". Because of anxiety about the Fragata,¹ no men were landed, and in consequence the Capitana sailed out on the following day to continue her voyage and to search for her."

-
1. The Fragata referred to here was Vizcaino's consort which, under stress of weather, had failed to note that his ship, termed the Capitana, had changed course in the early morning hours to put into Drakes Bay. She consequently continued to sail northward on the exploration of the coast, assuming that the separation was temporary but neither vessel was subsequently able to rejoin the other and each continued to make an independent exploration.

APPENDIX IV

THE BOLAÑOS-ASCENSION DERROTERO

The following is an excerpt of a sailing direction or derrotero, for the west coast of North America prepared by Francisco de Bolaños and Father de La Ascension on the Vizcaino expedition of 1602-03 for the returning Philippine galleons. Bolaños was chief pilot of Vizcaino's flagship. According to Father de La Ascension, he had been a sailor on the San Agustin, when Cermeño's expedition, was exploring this coast. The derrotero provides a supplementary description of Drakes Bay contemporary with Cermeño's expedition, written by a man who participated in it and who undoubtedly drew upon his experience gained from that expedition.

The Bolaños-Ascension Derrotero

"A true and certain derrotero by which to navigate from Cabo Mendocino, that is, from the latitude of 42° to the Puerto de Acapulco along the coast of the South Sea, made at the time the exploration from Cabo Mendocino to the Puerto de Acapulco was performed by orders of the Conde de Monte Rey, viceroy of New Spain, in the year 1602, by Sebastian Vizcaino, general of the fleet which made the exploration, and compiled by Father Fray Antonio de la Ascension, a barefoot friar of Nuestra Señora del Carmen, who accompanied the exploration as second cosmographer.

In the latitude of 42° there is a massive cape, apparently a cliff, rising out of the sea. (In the margin: Cabo de San Sebastian in 42° .) From this the coast of lower land runs south about eight leagues, where the land makes another point, massive and bare, with some white bluffs which rise out of the sea. This point in almost $41\frac{1}{2}^{\circ}$, is called "Cabo Mendocino".

From here the coast runs south-southeast to the latitude of $39\frac{1}{2}^{\circ}$, of medium elevation, very heavily wooded and with some small bare hills on the shore of the sea. At this latitude a low point of white cliffs rising out of the sea extends out. From here the coast runs southeast a quarter south to $38\frac{1}{2}^{\circ}$, where the land makes a point of medium height separated from the coast so that at a distance it appears to be an island. It is called "La Punta de los Reyes" and is a steep morro. On its northeast side this furnishes a very good shelter, making it a good port for all ships. It is in the latitude of $38\frac{1}{2}^{\circ}$. Note that in anchoring in this port, called "San Francisco", for shelter from the south and southeast winds, you have to do so at the end of the beach in the corner on the west-southwest side. On the northeast side there are three white cliffs very near the sea, and in front of the one in the middle an estero enters with a very good mouth without breakers. On going in this, you will soon encounter

The Bolaños-Ascension Derrotero, continued.

friendly Indians, and can easily find fresh water. To the southwest of this port are six or seven small white farallons, some larger than others, occupying a space of a little more than a league in circumference. Whoever comes from six leagues off Cabo Mendocino bound for this port, on a course southeast a quarter south, will come to the Punta de los Reyes and will see the farallons, a good landmark to recognize it. Here it was that the ship San Agustin was lost in 1595, coming on a voyage of exploration. The loss was caused more by the man commanding her than by the force of the wind.

"From the Punta de los Reyes about fourteen leagues southeast a quarter south there is a point. Before reaching it the country consists in places of sierra, bare to the sea and of medium height with some cliffs, but soon the country inside becomes massive and wooded until you reach a point of low land in $37\frac{1}{2}^{\circ}$ named the "Punta de Año Nuevo". From this point the coast runs to the east, forming a large ensenada which ends at a point of low land heavily covered with pine groves down to the sea itself. This was named "Punta de Pinos" and is in 37° . From Punta de Año Nuevo it is about twelve leagues southeast to this point."

"On nearing this point, a massive range is seen to the southeast....."

This description continues south to Acapulco, Mexico.

APPENDIX V

ACCOUNT OF PEDRO DE UNAMUNO

DESCRIPTION OF INDIAN TRAILS NEAR SAN LUIS OBISPO

On October 18, 1587 Pedro de Unamuno anchored in the vicinity of San Luis Obispo with a small fragata in which he had come from the Philippines with the intention of making an exploration of the west coast of North America. Here he observed his latitude to be $35\frac{1}{2}^{\circ}$, the highest point he was able to reach on this coast, and from here he made a partial exploration southward to Acapulco.

The following abstract is from Unamuno's account, the full translation of which may be found in "Spanish Voyages to the Northwest Coast of America in the Sixteenth Century" by Henry R. Wagner. This portion of the account is of interest in showing the extent and nature of the Indian trails encountered by Unamuno and his landing party, and it seems likely that a similar condition would have existed at Drakes Bay at the time Drake and Cermeño visited that area. There was undoubtedly a well defined trail leading from Drakes Bay to the inland villages mentioned in the Drake and Cermeño accounts, and it seems probable that this was followed by both expeditions.

Pedro de Unamuno

"Sunday, October 18, on the morning watch, we put in toward land and as day dawned we discerned a high land to the south, with some three pine trees on the highest part which serve as a landmark. At the north (of this land) we saw the smoke of numerous fires at the foot of the hill in some pine woods near the sea. To the north of this a point of land extended about northwest-southeast, and within this point there was a large bay toward the east, which seemed to have harbors in it. We consulted those on board, especially Fr. Martin Ignacio de Loyola, commissary to China, and found that all were of the opinion that we should put into the bay and see what was there, since it was for this purpose that we came. We therefore stood in for the bay. On reaching it we saw to the east a long sandy beach middling wide, for which we steered, and there the vessel anchored in twenty-seven fathoms, bottom of fine sand mixed with mud. There is much thick grass around and near the ship, growing out of more than fifteen fathoms of water. These plants are thick and have great leaves and stems, and are the same which sailors say they have seen a hundred leagues at sea floating like great rafts. It is this grass, which grows along all this coast to beyond Isla de Zedros, in latitude full $28\frac{1}{2}^{\circ}$. It does not grow in rivers, as some have declared, but along the coast, as just

Account of Pedro de Unamuno-Description of Indian Trails near San Luis Obispo, continued.

stated. In this port there is an unlimited quantity of fish of different kinds, trees suitable for masts, water, firewood, and abundant shell-fish with all of which a ship in need could supply itself.

"As just stated, we anchored in this port October 18, the day of San Lucas, and we therefore named it Puerto de San Lucas. While thus anchored, about two harquebus-shots off the beach, we observed the sun between eleven and twelve o'clock noon, and found the port to be in full $35\frac{1}{2}^{\circ}$. After a little while we saw two Indians on land, on a slope at the base of a hill, whence they looked us over at their pleasure.

"On seeing these Indians, a council was held of those on board and, all being assembled, it was considered what should be done, and whether some soldiers should land and explore the neighborhood of the harbor. All were agreed that the Captain with twelve soldiers and some Indians, armed with swords and shields should land and look the ground over and make a reconnaissance of the vicinity of the port. Having left orders aboard ship as to what was to be done, and having elected alcaldes and regidores, that there might be someone to take possession of the port and whatever else might be discovered, I landed with twelve soldiers with their coats of mail and harquebuses, Fr. Martin Ignacio in advance carrying a cross in his hands, and with some Luzon Indians with their swords and shields.

"When we landed in the harbor, a consultation was held as to what direction should be taken, whether toward the place where the Indians had been seen shortly before, or toward the pine woods where some fires had been seen that morning, as there were many trails leading in different directions. We decided to go toward the place where the two Indians had been seen, because the trail that way seemed to be the most trodden, and so we began our march in that direction. Having reached the top of the hill toward the east-northeast, we saw a good-sized river in a plain below, and many beaten trails leading in every direction, but saw no sign of the Indians we had previously seen on the slope. Considering the diversity of the trails leading in every direction, it was agreed to follow one of them, which led southeast toward a high hill from whence what lay about could be seen. With Father Martin leading, his cross in his hand, we set off towards it, two of our Indians ahead as scouts. When we had marched a quarter of a league the Indians discovered people, and having reported that they had seen five persons, went after them. At the same time we hastened our pace in order to

Account of Pedro de Unamuno-Description of Indian Trails near
San Luis Obispo, continued.

speak with them, and meanwhile decided to send Diego Vazquez Mexia, the sergeant, and another soldier with the two Indians to entertain them with pleasant words and show them peace and good will, if they could overtake them. The sergeant went ahead with the scouts after the five persons and although he made every effort they could not be overtaken, for they were high up on the hill. They were naked and fleet, and although the rest of the party advanced at a good gait, they had time to get into a pine wood by way of another hill. We found two bundles like baskets wrapped up in two deerskins on a steep slope along the trail to the hill. We found nothing in them but two deerskins, little pelts, like rabbit skins, cut and fashioned like a chain, and a few flowers like wild marjoram, which must serve them for food or drink, as no other seed was found. There were two women among the five persons they had seen, according to the report of the Indian scouts, for they carried two children on their backs. We took one of the two deerskins, leaving in its place two handkerchiefs with their other plunder. Our men were not allowed to take anything of theirs. This done, we went up to the top of the hill, where we halted and looked about to see what could be seen.

"Viewing what lay around, we saw nearby another hill about three harquebus-shots away. I ordered Joanes de Arrajeta and Cristobal Infanson to go with their swords and shields and two Indians and climb the hill, which was on our right hand, and from there to look about to see if there were any settlements or other indications of people, and to find out if there were any minerals in the hill. They went and looked in every direction as far as they could see, and prospected the hill for minerals. They then came down to where the rest of us were and reported that they could see no settlements, people, nor smoke, nor had they been able to find any mineral in the hill, but that there were many trails, among which was one that seemed to be the most trodden leading up the river in an easterly direction..

"The party having rested, we descended the hill toward the river, and coming to the bank tried the water which we found very good, as it came down between sandy banks. From there we went up a small hill towards the north, where the river formed a great lake. So near was the sea that there seemed to be a bar and a harbor there, but when we reached the place it was seen to be the dammed-up water of the river, the outlet to the sea being blocked by a great quantity of sand. Nevertheless, there must be some discharge under the sand, otherwise the river water would soon cut away the sand. As it was already late, we returned toward the ship and when we came near, we found on and about a little hill a great quantity of very large pearl-oyster shells and others of numerous shellfish."

. Account of Pedro de Unamuno.

Unamuno stayed in this harbor until October 21st. From the full context of the account it is evident that Unamuno was anchored in San Luis Obispo Bay between Shell Beach and Avila. His soundings are probably intended to be in feet rather than fathoms, as stated, and it should be noted that the ship was anchored near beds of kelp. The river found this day to dead-end on the beach would have been the San Luis Obispo Creek.

The next day after coming to anchor, October 19th, Unamuno took an exploration party ashore consisting of a friar, twelve armed soldiers and eight armed Philipinos and marched inland two hours before dawn. Interestingly, it was related that when day dawned, they had traveled two leagues. In all, Unamuno travelled about six leagues inland and apparently reached the outskirts of the city of San Luis Obispo late in the afternoon, marching in easy stages with a siesta from midday until three o'clock in the afternoon. At San Luis Obispo it was decided not to go on with so few men and supplies, and the expedition accordingly turned about and marched two leagues toward the ship before making camp for the night, thus marching a total of eight leagues in all.

APPENDIX VI

THE "SAN AGUSTIN" AND THE LANCHAS, "SAN BUENAVENTURA"

Little is known of the physical details of the San Agustin beyond the fact that she was a small vessel of not over two hundred tons, considerably smaller than the ships ordinarily used in the annual Manila-Acapulco traffic. She was furnished in Manila by Pedro Sarmiento, a well known Philippine captain. From a letter concerning the shipments from Manila for that year it is known that the San Agustin carried one hundred and thirty tons of cargo on Cermeño's voyage. On the Pacific crossing, August 13, a hurricane forced a deckload of chests, hencoops and big earthen jars of provisions to be cast overboard. From depositions taken upon the return of Cermeño's people in Mexico, it can be ascertained that there had been some ninety persons, more or less, embarked in the ship, a number of whom were passengers, besides soldiers, servants and the ship's crew. In addition to all of the above, the ship also carried a disassembled launch which was intended to be set up at the first opportunity when the coast of California was reached, so that a detailed exploration of the coast could be made.

From this little information we can obtain, at least a general idea of the size and appearance of the San Agustin. Her tonnage would make her about the same size as Drake's Golden Hind, which was rated by Spanish witnesses to be of about two hundred Spanish tons. Her length between stem and stern post would have been about eighty feet, breadth about twenty-two or twenty-three feet, and her draft about thirteen or fourteen feet.

In order to accommodate the large number of people on board, the ship would have required a 'tween deck and undoubtedly had a fore-castle and half deck aft with a cabin above that for the captain or pilot. We would probably find a commodious waist with solid bulwarks within which the deck cargo mentioned had been carried, as also the ship's boat. It is an interesting comparison that the Golden Hind's complement of people on board was at times only slightly less than the San Agustin's, that is, about eighty persons.

Most of the San Agustin's hold was probably taken up with cargo and a quantity of ballast beneath this, though also in here would be carried the bulk of the provisions and water, the powder magazine and in the forward end, the anchor, cables, ship's stores, spare sails and other equipment pertaining to the operation of the ship.

Although the largest part of the 'tween deck was likely to have been occupied by the San Agustin's people, it is probable that some cargo and goods were carried here also, perhaps the personal property of the passengers and others on board. Nothing is said about any

The "SAN AGUSTIN" and the lancha, "SAN BUENAVENTURA, continued.

armament belonging to the ship, and it would seem likely that this would be restricted to a few light pieces that could be carried on the upper deck. Hence, the 'tween deck would have been unencumbered by the ordnance that would usually be mounted here. We would probably find several gun parts on this deck, but these would be closed and tightly caulked for the voyage.

Under the half deck we would find a number of cabins for the passengers and officers of the ship with a 'great cabin' aft where they could dine. Also, under the half deck and in the forecabin it seems likely that there would have been mounted a few light guns for the defense of the ship, perhaps a half dozen at the most.

The Spanish and Portuguese ships were not encumbered with the cook rooms required by the English ships. All that was needed was a fireplace consisting of a hearth or bed of sand where each person cooked for himself and this was located on either side of the mainmast in the waist.

The San Agustin's rig would have been the usual three mast, square rig for that period, consisting of lower courses and topsails, spritsail and lateen mizzen.

The ship's boat apparently had a capacity of twenty-three, and it is interesting to compare it with Drake's boat which was stated to have been capable of carrying not above twenty persons. Both were probably in the neighborhood of eighteen or twenty feet in length.

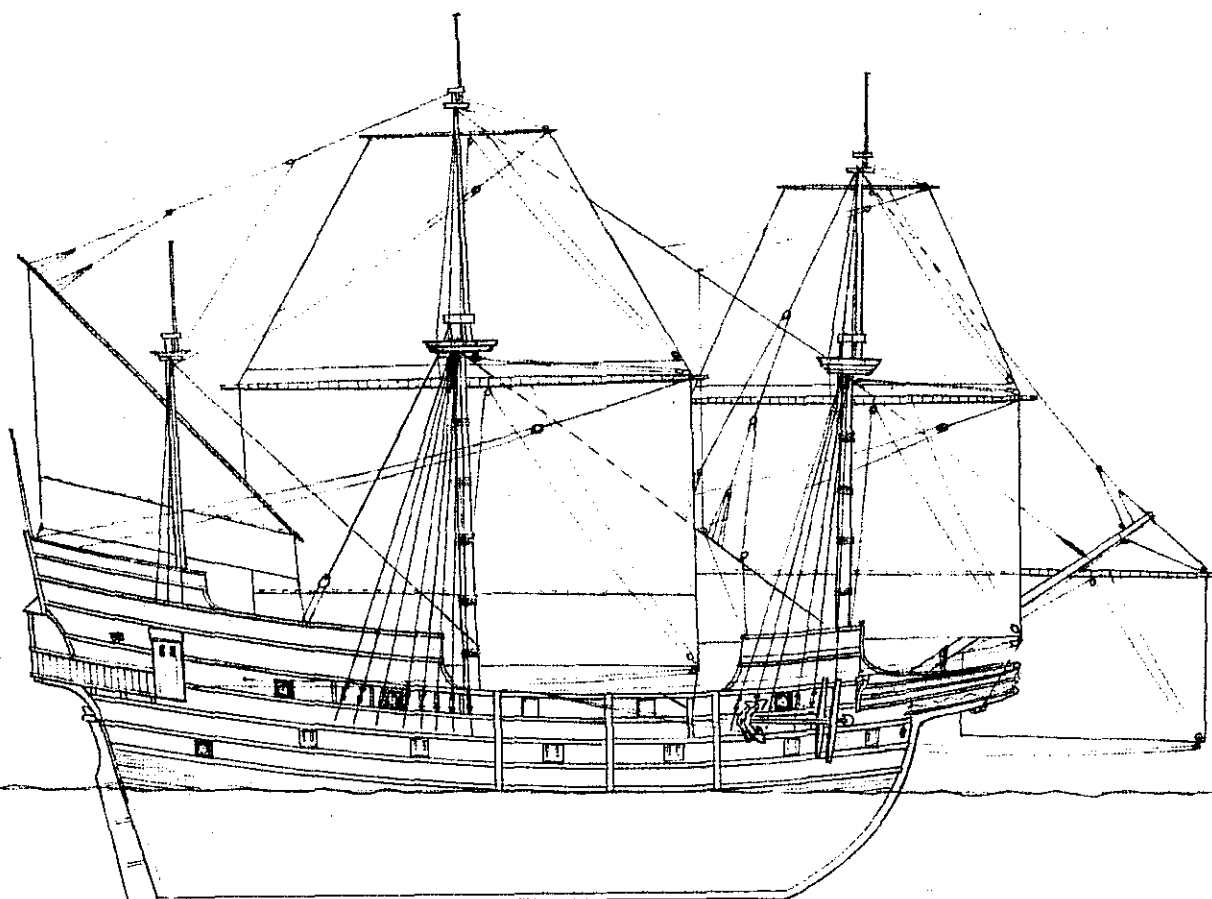
The launch which Cermeño brought over with him on the San Agustin is best described by Father de la Ascension in his account of the Vizcaino expedition: Aboard that ship was a small fragata in sections which, on sighting Cabo Mendocino, was to be set up in the first port found and provided with men and everything necessary to make this exploration, as it was a business easier to carry out since they would have the northwest wind in their favor.

Although Fr. de la Ascension describes the craft as a fragata, which was a small sailing vessel sometimes propelled by oars or sweeps, the Cermeño accounts always refer to it as a lancha, which in English would be the equivalent of a launch or a ship's tender. The lancha would have been designed as a large, open boat between thirty and forty feet in length; essentially a rowing boat but also fitted with masts and sails that could be set up or taken down as necessary. The boat was probably intended to be towed by the San Agustin when it was not engaged in its work of exploration close inshore and from which inlets and harbors could be sounded and charted.

The "SAN AGUSTIN" and the lancha, "SAN BUENAVENTURA, continued.

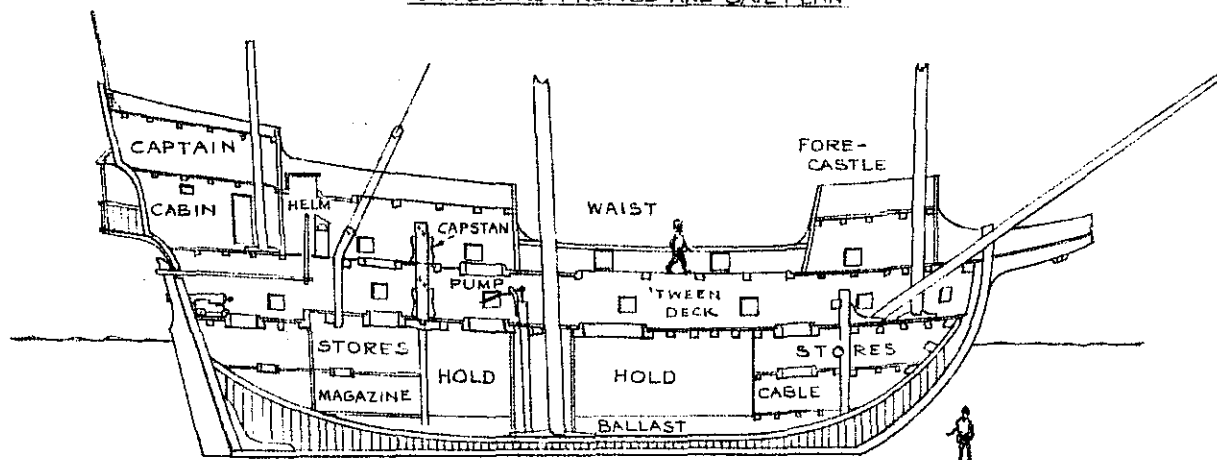
It is quite possible that when the San Agustin was lost, the lancha was modified to accomodate the survivors of the wreck for the trip to Mexico. This may have consisted in raising the sides and partly or entirely decking it over to provide shelter from the elements. At least, in the accounts, there doesn't seem to be any complaint of exposure.

The lancha had to be of such size that it could be easily handled under oars, light of draft so that it could easily work close inshore with minimum hazard from shoals, or be beached if necessary to make a landing. Yet it would have to be seaworthy enough to remain at sea with the San Agustin as it was necessarily too large to be taken on board, and it would have to sail well enough to keep up with her under average conditions of wind and weather. The lancha was large enough to carry the entire compliment of eighty odd persons, a dog that was ultimately eaten, the supply of food and water and some cloth and silk, apparently carried for barter with the Indians along the way as the food supply was insufficient for the entire trip. In addition, there appears to have been a fire hearth on which to cook the food, particularly the acorns obtained from the Indians which could not be eaten otherwise. Cermeño's lancha was appropriately named the San Buena-ventura.



SCALE OF FEET
0 10 20 30 40 50 60 70 80

OUTBOARD PROFILE AND SAIL PLAN



SCALE OF FEET
0 10 20 30 40 50 60 70 80

LONGITUDINAL SECTION

THIS DESIGN, IN THE ABSENCE OF PICTURES OR DESCRIPTIONS OF THE "SAN AGUSTIN," IS BASED ENTIRELY ON PROBABILITY, RELATIVE TO THE STATED TONNAGE, NUMBER OF PERSONS ON BOARD, CARGO CARRIED AND CHARACTERISTICS OF SPANISH SHIPS FOR THE PERIOD.

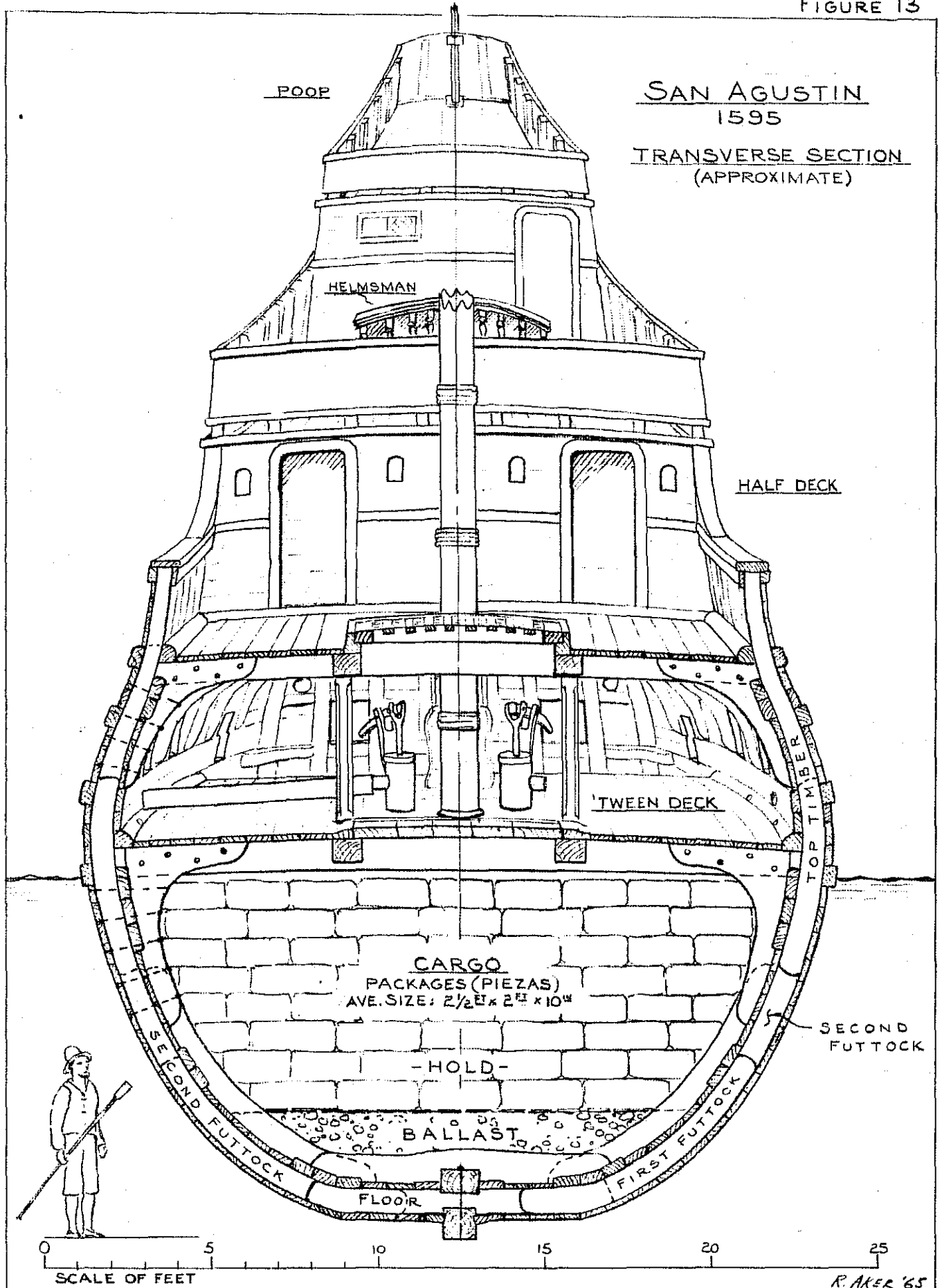
SAN AGUSTIN
RECONSTRUCTION OF SHIP USED ON THE CERMEÑO EXPEDITION TO CALIFORNIA AND LOST AT DRAKES BAY IN NOVEMBER, 1595.

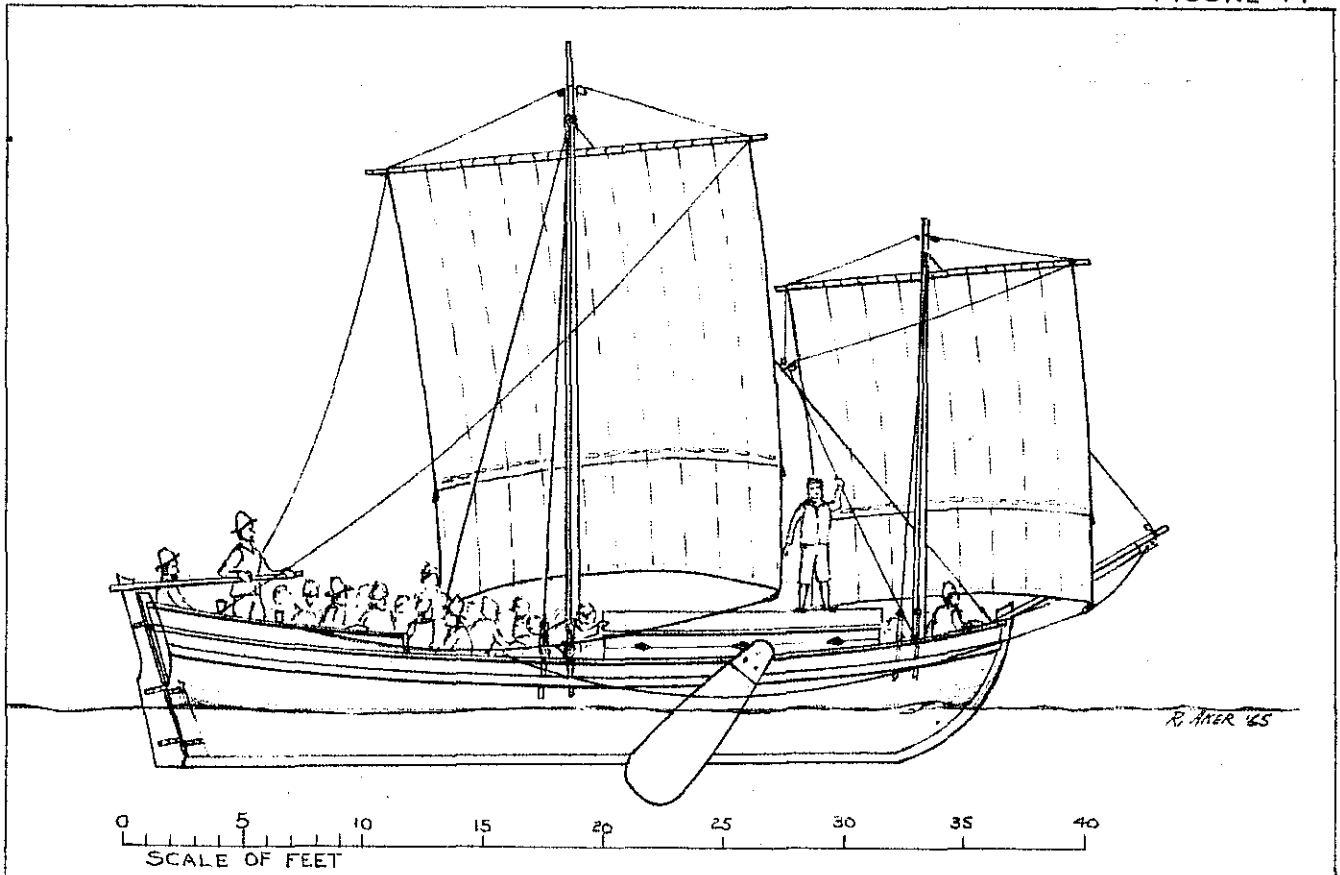
TONNAGE - APPROXIMATELY 200 TONELADA

R. Aker '65

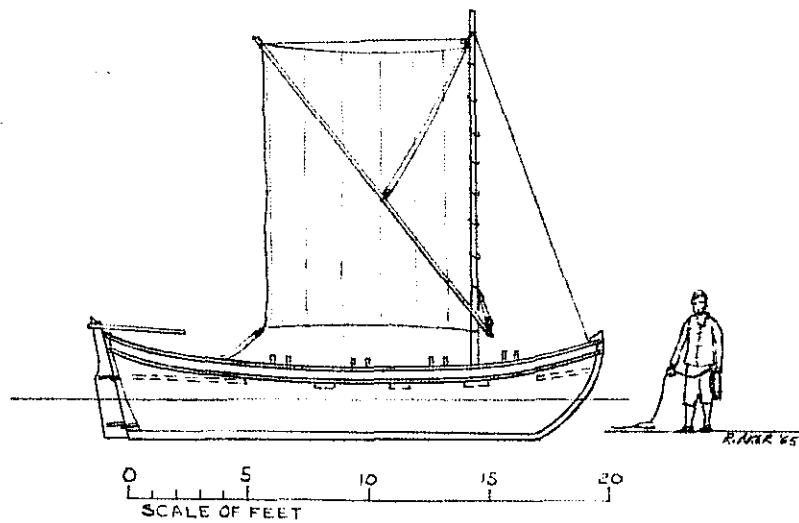
Drake Navigators Guild

FIGURE 13





LANCHA, "SAN BUENAVENTURA"
DIMENSION UNKNOWN
CAPACITY - ABOUT 80 PERSONS



SAN AGUSTIN - SHIP'S BOAT
CAPACITY - 23 PERSONS

CERMEÑO EXPEDITION
1595

APPENDIX VII

UNITS OF MEASURE USED BY CERMEÑO

Several units of measure are mentioned in the accounts which must be understood in order to reconstruct Cermeño's explorations. Most of the distances given were probably estimated by sight, or at sea, were related to the speed of the ship or the distance sailed from one point to the next. On land, the distances in leagues may have had a relationship to the distance that a man could walk or march in an hour. In general, most of the given distances are found to be remarkably close to the actual distances wherever a comparison can be made.

Marine league: Although the Spanish and Portuguese marine league is generally taken to be four Roman miles of 5,000 feet to the mile, or $17\frac{1}{2}$ leagues to a degree of latitude (approximately equivalent to three present day nautical miles per league), this league is not compatible with the distances described by Cermeño. Nearly all of his distances are much too large by this unit. However, because of his experience as a pilot, it is unlikely that he was consistently in great error, and a shorter league is consequently indicated.

By converting Cermeño's leagues into nautical miles on the basis of his given distances between known landmarks, it is found that his league measures between 2.2 and 2.4 nautical miles. From this it may be taken as evident that he was using the old Spanish league of 3 Roman miles to the league.¹ At ten stadia, or 5,000 feet per Roman mile, this league

-
1. At the close of the 15th century, Portuguese and Spanish seamen took the length of one degree of an arc of a great circle on the surface of the earth, or one degree of latitude, to be 70 Roman miles, or $17\frac{1}{2}$ leagues of four Roman miles. The basis of this was the determination of the earth's circumference by the ancient Greek astronomer, Eratosthenes - 252,000 stadia, 10 sea stadia being taken as equal to 1 Roman mile. Early in the 16th century, however, the Spaniards adopted Ptolemy's determination of the earth's circumference at 180,000 stadia in order to bring the Moluccas, or spice islands, within their half share of the world. By Ptolemy's measure the Spaniards reckoned $16\frac{2}{3}$ leagues of 3 Roman miles, or 50 Roman miles, to a degree of the great circle. Late in the 16th century or early 17th they reverted back to the league of 4 Roman miles, and it was this one that was used by Vizcaino in 1602-03. In the second half of the 16th century, the English adopted the 3 mile league but reckoned 20 leagues, or 60 miles, to a degree of a great circle. The 60 mile degree survives today in almost universal use, but the length of the mile was increased to compensate for the true circumference of the earth. In the 16th century and later, the true length of a degree of arc on the earth's surface was not known because of the practical difficulties of determining it. At this time it was much shorter than its true value.
See David W. Waters, *The Art of Navigation in England in Elizabethan and Early Stuart Times*, pp. 64-65.

Units of Measure used by Cermeño, continued.

equalled 15,000 feet, but expressed in terms of the U. S. Standard foot, it was somewhat shorter, depending upon the variations in the measure of a foot from one region to another. For example, by using the Roman foot, .967 of the U. S. Standard foot, the league would measure 2.386 present day nautical miles; or by using the Spanish Toledo foot, .899 of the U. S. Standard foot, the league would measure 2.218 nautical miles. By comparison, the Spanish league used to lay out the California ranchos,¹ which was equal to 5,000 varas (Spanish yard of 2.781 feet), would measure 2.287 nautical miles. Roughly speaking, Cermeño's marine league may be reckoned to have been equivalent to about 2.3 nautical miles.²

Land League: Although no distinction is made in the accounts between the league Cermeño used at sea and the one which he used on land, it quickly becomes apparent that the latter is much shorter than his marine league. At the present time no reference to a league corresponding to this one has been found, but there is evidence that it may have been in general use during this period. A similar league appears to have been used by Pedro de Unamuno at San Luis Obispo, and there is also some evidence that it was used by the Vizcaino expedition.

For practical purposes, an approximation of the league used on land by Cermeño at Drakes Bay can be established by converting his descriptive measure of Drakes Estero into any convenient modern unit of measure by which it is then possible to correlate other details of his inland explorations. Of Drakes Estero, Cermeño wrote: ... The river above referred to enters into the land three leagues and has a narrow mouth, while above in some parts it is a league in width, and in others a half a league. On the west side it has two branches of half a league each, and on the east side one, the entrance of which is a matter of a quarter of a league from the bar. Drakes Estero enters the land approximately 7,200 yards, one third of which equals 2,400 yards, or 1.36 statute miles approximately for Cermeño's league. Disregarding the 800 yard wide mouth of the estero, which was said to be narrow, and following the context of the description, at least two prominent parts of the estero are roughly half of 2,400 yards and the middle could easily be judged to be as wide as 2,400 yards. Also, on the west side of Drakes Estero there are two branches which can be considered to be half of that distance if we assume that the bend in Creamery Bay was not seen from Cermeño's boat, as at a distance from within the estero it is screened by the configuration of the land.

The Unamuno expedition marched inland a distance of five and a half to six leagues from San Luis Obispo Bay to the foot of a high hill located on the outskirts of the city of San Luis Obispo, a distance of about seven statute miles. Taking the average of the distances recorded going inland and returning, Unamuno's league would have been about 1.22 statute miles.

-
1. Found by U. S. Surveys to measure 2.633573 statute miles.
 2. Cabrillo, in 1542, appears to have also used the 3 Roman mile league on his voyage to California.

Units of Measure used by Cermeño, continued.

The league used by the Vizcaino expedition with references to distances on shore was also much shorter than the marine league, although not as easy to relate to the landmarks described as in the case of Cermeño and Unamuno. At San Diego, California, Father de la Ascension, writing of a reconnaissance of the shore, describes the hill on Point Loma as being "...about three leagues long and a half a league wide."¹ The ridge is actually about six statute miles from the end of the point to Mission Bay, but the width of the point is about 0.6 mile wide adjacent to where the ships were anchored inside Ballast Point. Though the described length of this landmark is disproportionate to its width and is given as an approximation, Father de la Ascension could not have been greatly deceived by its width, which is close to the equivalent of the short league under discussion here. At Monterey, the pine grove between the port of Monterey and the Carmel River is described as being "...more than two leagues across," a fair indication again of the short league.² In both of these instances Vizcaino's and Cermeño's marine leagues are too large for satisfactory correlation.³

Shorter distances in the Cermeño accounts are expressed in musket-shots and arquebus-shots. The exact intent of the expressions is uncertain, as whether extreme range, or effective range. The values should be considered as tentative. They may be too small.

Musket-shot: A distance of approximately 1,450 feet.

Harquebus-shot: A distance of approximately 500 feet.

The depth of water was expressed in brazas, the Spanish fathom. The U.S. and English fathom measures 6 feet.

Braza: Spanish fathom measuring 5.492 U.S. feet, or 0.915 U.S. fathom.

-
1. Wagner, Spanish Voyages..., p. 232.
 2. Ibid., p. 242.
 3. The land league used appears to have been the old leuga, or leuca, which was equal to a Roman mile and a half. Assuming the Spanish foot to be roughly nine tenths of the U. S. foot, this league would be about 2,250 yards. The double leuca, or three Roman mile league, was introduced into the Spanish peninsula by the Goths and Visigoths and was originally the rasta of the Teutonic tribes, but the older, shorter, measure appears to have lingered in use without distinction in name from the newer. The shorter measure, or leuga, originated with the Celts of Gaul. See M. Oppenheim, ed., The Naval Tracts of Sir William Monson, Vol. iv, pp. 159-160.

APPENDIX VIII

THE ACCOUNT OF N. DE MORENA

The following account was published by Father Jeronimo de Zárate Salmeron in his "Relation of Events in California and New Mexico up to 1626," and was translated and published in The Land of Sunshine, February, 1900. In the course of transmission from one person to another, Father Salmeron mistakenly relates that Drake had entered the Pacific Ocean through the Straits of Anian, the hypothetical passage between the North Atlantic and the North Pacific Ocean, which is obviously a misinterpretation for the Strait of Magellan, often merely referred to as "the Strait."

In addition, the translator of the account gives the impression that Drake had left Morena in the Strait of Anian by assuming that the word paraje in the text, meaning place or residence, is a misprint for pasaje, whereas the use of pasaje, meaning passage or strait, tends to be redundant. The word paraje as printed twice was doubtlessly intended, and thus the meaning is that Drake had left Morena at the place where the strait was found. Drakes Bay, at the north end of the Gulf of the Farallones, where Drake landed, lies within the context of the description. It should be noted that Morena is credited with the discovery of the strait, or "arm of the sea", as it was called.

Narrative of the Pilot Morera,¹

Who Passed from the North Sea to the South Sea, Through the Strait.

"The Father Fray Antonio de la Ascension, a friar of the Bare-foot Carmelites, one of the three who went with Sebastian Vizcaino to the discovery of Cape Mendocino, gave me this narrative as a thing secure, wherefore I put his name here; and he says:

"A foreign pilot, named N. de Morena, who steered the Englishman from the sea of the North [the Atlantic]² to that of the South [the Pacific] through the strait of Anian, gave this narrative to Captain Rodrigo del Rio, Governor that then was of New Galicia. When the Captain Francisco Draque [F - D -] returned to his country, this pilot - who had come emerging from the Strait in his company - was very sick, and more dead than alive; and to see if the airs of the land would give him life, as a dead thing they put him ashore. The which [pilot] in a few days recovered health and walked through that land for the space of four years. He came forth to N. M., and from there to Santa Barbara in Chihuahua, and then passed to the mines of Sombrerete in search of said Rodrigo del Rio. And the said pilot recounted to him the following:

"Having given a long narrative of his much wandering, he told him how the said Englishman, Francis Drake, in the passage [text paraje, stopping place; apparently a misprint for pasaje] of the

-
1. As spelled in the title of the original text.
 2. Brackets are the translators.

The Account of N. de Morena, continued.

Strait of Anian, had put him ashore, for the reason aforesaid, and that after he had recovered health he had travelled through divers lands, through many provinces, more than 500 leagues of mainland, until he came far enough to catch sight of an arm of the sea which divides the lands of New Mexico from another very great land which is on the side of the West. And on the coast of that sea were many and great settlements, among the which is a nation of white people, the which are accustomed to go horseback, and fight with lance and dagger. It is not known what nation this may be. The said Father Fray Antonio says he believes they are Muscovites. I say that when we see them we shall know who they are. This pilot told how this arm of the sea runs from north to south; and that it seemed to him it went on to the northward to connect with the harbor where the Englishman had put him ashore. And that on that sea coast he had seen many and good harbors and great inlets; and that from the point where they put him ashore he would venture to get to Spain in 40 days in a good ship's-tender; and that he must go to get acquainted with the Court of England. [Apparently quoting what Drake said to him.]

"He offered himself to take the said Rodrigo del Rio to the passage [again paraje] of the arm of the sea which he discovered; and said that he could easily cross him over to the other side.

"This arm of the sea is held to be an assured thing. It is that of the Gulf of California, called Mar Rojo [Red Sea]; and the land which is on the other side is that of the Californias. As they told me it, so I set it down, without quitting nor adding anything of my own part. [literally of my house.]"

.

Morena's conclusion that the Gulf of California might go on to connect with the harbor where Drake had put him ashore makes it fairly evident that he found his "Strait of Anian" in what we now know as San Francisco Bay. Had he merely stated that he had been left at the strait only, one might have some doubt about what waterway he was referring to, or even to the veracity of his story. However, there is no other waterway with a southerly branch of such a magnitude as to give the impression of possibly joining with the Gulf of California, aside from the Strait of Juan de Fuca, which neither Drake or Morena could have seen. It would seem likely that Morena had confirmed his opinion of an interconnecting passage with San Francisco Bay after reaching the gulf. Although this could have come from a visual impression, it is also quite possible that he had come to his conclusion from stories related by the Indians living near the head of the gulf. It may be expected that these people

The Account of N. de Morena, continued.

would have described the estuary of the Colorado River and the river itself as continuing a great distance or indefinitely to the north. The information that the Spaniards had gained from the Indians in this area in the course of the expedition of Don Juan de Onate in 1604 is remarkable for the knowledge that they had of geography and people far removed from them.¹

The mention of harbors and inlets on the coast of the sea makes it apparent that Morena followed the California coast south rather than traveling inland. From Marin County he could easily have crossed San Francisco Bay by means of the Indian reed canoes which were found crossing the bay extensively by explorers in later years. Upon reaching the San Francisco shore it is likely that he had proceeded more or less directly to the coast and did not see the full extent of the south bay. As a pilot, it would be natural for him to be interested in the navigation of the Golden Gate, and he would probably follow this out to the headlands and resume his journey southward from there.

There is no clear indication as to what point Morena reached the Gulf of California and crossed over, except the statement of Father Salmeron that he came forth into New Mexico, or what is now the State of Sonora. Morena, being professionally familiar to some extent with navigation and cartography, would have some knowledge of the configuration of the peninsula of Lower California and the Gulf, and it is quite likely that he would have obtained information from the Indians as to where he should go inland long before he reached the end of the peninsula. It is now known, for example, that the Indians on the coast traded with those at the mouth of the Colorado River.²

In addition, on both the Cabrillo and the Vizcaino expeditions, while in the vicinity of San Diego and Ensenada, the Spaniards learned from Indians about people similar to themselves living in the interior who were, no doubt, also Spaniards engaged in overland expeditions or living in New Mexico.

Morena stated that he had walked over 500 leagues until he caught sight of the Gulf of California, or an "arm of the sea," as he called it. It is an interesting point that by dividing Cermeño's land league (approximately 2,400 yards per league), into the actual distance from Drakes Bay, south along the coast to a point in the vicinity of Ensenada, and thence across to the head of the Gulf of California, the distance in these leagues is approximately 500 leagues.³

-
1. See the account of Captain Gerónimo Marqués to the country and Sea of California. Wagner, Spanish Voyages.....,p.266.
 2. Wagner, Spanish Voyages.....,p. 409.
 3. About 680 statute miles or 498 leagues, more or less.

The Account of N. de Morena, continued.

Further indication that Morena did not go to the end of Lower California is suggested by the use of the word "mainland" in the relation of his travels, as though not including peninsular Lower California; ... , more than 500 leagues of mainland, until he came far enough to catch sight of an arm of the sea.

On the eastern side of the Gulf of California, Morena again apparently followed the shore until he reached some point where he learned that he could find a Spanish settlement. Beyond the statement that Morena related his narrative to the Governor of New Galicia, there seems to be no further trace of him or of his fate after reaching Mexico.

Some indication that Morena had been with Drake is indicated in a communique by the Alcalde, or Mayor, of the Port of Guatulco, Mexico, Gaspar de Vargas, written April 13, 1579, the day on which Francis Drake entered the port; ... At dusk I returned to the town for the third time to ascertain whether I could obtain some information as to who the men are. All that I have been able to find out is that the men on the ship belonging to Juan de Madrid think that the name of the pilot of the ship is Morera.¹

It may be expected that the discovery of a strait such as the Golden Gate would have been a carefully kept secret. Even Father de la Ascension in writing his chronicle of Vizcaino's voyage gives no indication of Morena's story although he speculates extensively in there on an account of a strait crossing North America from the Gulf of Saint Lawrence which was expected to open on the west coast somewhere near 40° latitude.² He was either very careful to not reveal the Morena story or else it was never disclosed to him, possibly not even to Vizcaino, until several years after the voyage when those who were responsible for its safekeeping were satisfied that it had been proven to be without foundation and therefore harmless.

-
1. See letter of Gaspar de Vargas, Zelia Nuttall, New Light on Drake, p. 214.
 2. In his prologue, Fr. de la Ascension said, in effect, that after the death of Philip II (1598), his son, Philip III, found among his father's secret papers the sworn declaration of some foreigners who were driven by adverse wind through the Strait of Anian from the coast of Bacallaos, or Tierra Nova, (the Island of Newfoundland) and that while seeking shelter from the storm they entered a copious river, on which they came to a populous and rich city named Quivira. It was in the latitude of 40°, almost on the same parallel and in the same neighborhood as Cabo Mendocino, which the ships come to sight in sailing from the Philippines to New Spain. The discovery of this city was

(Continued on next page.)

The Account of N. de Morena, continued.

However, at least two documents of the late 16th century seem to contain veiled knowledge of Morena's strait; one being a letter embodying an account of a strait written by Father Martin de Rada and the other being instructions given to Vizcaino by the Viceroy of Mexico, Conde de Monterey, for his exploration of the northwest coast in 1602. On the basis of the former document, it is of particular interest that Cermeño could have been informed of details of a strait associated with the Golden Gate when he sailed on his voyage of discovery to the west coast in 1595.

The first document is a letter written to the King of Spain from Manila, June 27, 1597, by Hernando de los Rios Coronel.¹ The purpose of this letter dealt chiefly with a plan for occupying Formosa but included some speculation on the military advantages which the discovery of a passage across North America would have for sending reinforcements to the Philippines from Spain. Among two possible routes that he recommended to be discovered was a strait described by Father de Rada, whose written account Coronel found in the Philippines. De Rada had gone to the islands in 1564, one of five Augustinian friars accompanying the expedition of Lopez de Legaspi.² He wrote a book on latitude and longitude, now lost according to Henry R. Wagner, who believed that it might have contained the account.

Father Martin de Rada's version of the strait, which he said had been given to him by a Basque named Juanes de Rivas, who was possibly a seaman, is singular among the many 16th century theories for a passage through or across North America. Although his account bears no direct evidence linking it to Morena, his description of the western entrance to the strait is curiously unique to the entrance to San Francisco Bay. The detailed similarity could only remotely have been contrived through invention or interpretation of an unrelated discovery.

(Continued from preceding page.)

cited by Fr. de la Ascension as one of the motives for Vizcaino's voyage. He was undoubtedly mistaken in some details of the story, but it is probably the same or similar to one that was related to Luis de Velasco, the elder, about 1550 when he was Viceroy of Mexico and to others that were current from that time on, each varying slightly from one version to the other. See Wagner, Spanish Voyages..., p. 180-181 and p. 125.

1. Translated in The Philippine Islands, by Blair & Robertson. See Wagner, Spanish Voyages..., p. 177.
2. Most prominent among the five friars was Fray Andres de Urdaneta, who had instructions to assist in determining the return route from the Philippines to Acapulco, one of the most important objectives of the expedition. Urdaneta praised Martin de Rada as a great mathematician, astrologer and cosmographer and a man of great common sense. See Wagner, Spanish Voyages..., p. 120.

The Account of N. de Morena, continued.

De los Rios Coronel was a man of scientific attainments who had gone out to the Philippines about 1588 and was one of the most able officials in the islands. At the time of writing his letter to the King he was composing a book on the use of the astrolabe. The earliest indication of Coronel's knowledge of the strait is contained in his statement that in the first year that Gomez Perez Dasmaringas came to the Philippines as Governor, about 1590, or early in 1591, he treated with Coronel about sending him to discover the strait. Dasmaringas was killed in 1593 when the Chinese crew of his galley mutinied, and his son, Luis Perez Dasmaringas, assumed the remaining term of his office as Governor. His son made the contract to furnish Cermeño with a ship in the Philippines for the exploration of the California coast in compliance with the provision ordered by the Viceroy of Mexico, Luis de Velasco.

Knowledge of Morena's discovery could have reached the Philippines in 1585 with Francisco Gali, who similarly had been sent to make an exploration of the west coast from the islands. As previously mentioned in the text, the mission was frustrated by Gali's untimely death soon after arriving there and was not satisfactorily concluded by his successor, Pedro de Unamuno.

The second route suggested by Coronel was probably based on the same story of discovery of a strait as that in Fr. de Rada's account and was believed by Wagner to have been given to Coronel by Fray Andre de Aguirre, who was also one of the five friars accompanying the Legaspi expedition. Fr. de Aguirre, in turn, may have obtained it from Fray Andre de Urdaneta, prior of the fleet, who related a similar story in a Memorial in 1560 regarding the best method of reaching the Philippines from Mexico.¹ There is some further foundation for these stories in that a very similar one to Coronel's second account was recorded by Baltasar de Obregon as being given under oath to Viceroy of Mexico, Luis de Velasco, the elder, by a man named Juan Juarez, who also related that he was aboard the ship which made the discovery.² It appears evident that each of these stories was based upon some as yet unidentified French or Breton voyage following the Cartier explorations of the Saint Lawrence River between 1534 and 1542.

Although this strait (Saint Lawrence River) may have been believed by some to communicate with the Pacific Ocean, it is notable that only in Fr. de Rada's account is the western outlet defined. Considering the wide circulation of this story of the strait, it is not too improbable that in the seafaring community it was familiar to Morena, and it may have caused him to believe that he had actually found the western outlet when he chanced on the Golden Gate and San Francisco Bay.

1. Wagner, Spanish Voyages..., p. 125.

2. Ibid., p. 125-126.

The Account of N. de Morena, continued.

Extract from letter of Hernando de los Rios Coronel to the King of Spain, Manila, Philippine Islands, June 27, 1597.

Account of Father Martin de Rada:

"A Basque named Juanes de Rivas, a good man and native of San Sebastian, told me that while on a voyage to the whale fishery in Terra Nova,¹ he gained information that in the year 1545 some Bretons, after sailing northwest a hundred leagues from Punta de Breton, which is about eighty leagues west of the Punta de Bacallaos, in 49° or 50° (he said 52°), fell in with a strait by which, according to the story, some Portuguese had gone to India and China, and back again from Ucheo to Lisbon, which they reached in forty five days.² Believing that the King would reward them, they gave him an account of it, but he put them in prison and the pilot and master died there. One of these Portuguese who was in the ship came to New Spain afterwards and went with Francisco de Ibarra on the discovery of Nueva Vizcaya.³ Ibarra decided to go and look for this strait, but they fell out. The Basque and the Portuguese became friendly, and conferring with each other about what each one knew and had seen, they said that from the Cabo de Breton⁴ you go to the north-west until you strike the mainland,⁵ then following the coast down towards the southwest, in which

-
1. The Island of Newfoundland. In 1578, Antonie Parkhurst, in a letter to Richard Hakluyt, stated that at that time between 20 and 30 vessels came to Newfoundland from Biscay for the whale fishery alone. The Basques were judged to be the most skillful in the fishery. The animals were hunted in shallows, much as in later times, but the oil was "tryed out" at a base on shore. See letter of Antonie Parkhurst, Hakluyt, The Voyages of the English Nation to America... See also George Francis Dow, Whale Ships & Whaling, p. 3-5.
 2. Probably a misinterpretation of the Portuguese voyages of the Corte-Real brothers to Labrador, 1501-1502. At that time the North American continent was presumed to be an extension of Asia.
 3. Francisco de Ibarra was the son-in-law of Luis de Velasco, the elder. The Portuguese probably accompanied Ibarra in 1554 when the latter set out from Zacatecas in Mexico to explore for mines in the region north of there called Nueva Vizcaya and may have contemplated an additional exploration far enough north to intercept the strait. See Hubert Howe Bancroft, History of Mexico, Vol. II, p. 597-598.
 4. Cape Breton Island, Nova Scotia.
 5. The Gaspé Peninsula in the Gulf of St. Lawrence.

The Account of N. de Morena, continued.

direction it runs,¹ the entrance is struck, which, although seemingly very small, is very large and deep. Getting out into this China Sea, the coast of which runs towards China in a west-southwest direction, they said that on the side of the strait towards the South Sea (some letters lost) of the north, there are many small islands, although a better statement would be that they were on the north side coming from China. Besides this landmark, by following the coast the strait cannot be missed. They gave as landmarks that on the left side the Chinese shore is very high, with pine trees, and on the other side it is very low, but also wooded. They said that in the strait the wind was of no service, but that the currents draw them into it and take them out. They said that the so-called "Islas de Bacallaos"² is all one island (unless, perhaps, there are some small islands close to it), to the Cabo de Gata, which is in 62°, where there is a deep passage to enter the great bay.³ They said that the Punta de Bacallaos is in 50°, and that the coast runs along from this island to the Cabo de Breton, about eighty leagues,⁴ and that what is called 'Cabo de Breton' on the maps is the large island itself, and is nearer the Punta de Bacallaos than the Cabo de Gata."

"It can also be inferred that these seas communicate with each other, because those who sail from these islands see on the coast of New Spain a great number of whales in the latitude of 42°, ⁵ which must enter by that strait. Therefore, by this way Your Majesty can place what force you wish (some letters lost). Although this navigation, on account of the high latitude seems to entail some difficulty, there is none, because leaving (some letters lost) in March when they reach this latitude it is hot, and (some letters lost) the seas are calm and the winds are from the northeast, which are those required, and you can come here with much ease"

"The other route and sailing is by way of New Mexico, in the latitude of 45°. Of this, a friar of the order of San Augustin, intelligent in cosmography, the prior, who died in the convent here, gave me an account, saying that at the time when Don Luis de Velasco, the elder, was governing New Spain, a Basque gave him in his presence an account of it, stating that he had seen, while on a journey with a French corsair, that they entered an

-
1. This is with reference to the north and northwest shore of the Gaspé Peninsula.
 2. The Island of Newfoundland.
 3. This is probably in reference to the Strait of Belle Isle which opens into the Gulf of Saint Lawrence, which was sometimes known as the "Great Bay."
 4. The south coast of Newfoundland.
 5. The California Gray Whale (*Rhachianectes glaucus*).

The Account of N. de Morena, continued.

arm of the sea above the coast of Florida¹ during a storm, and having sailed many days towards the west found the arm of the sea to end in the latitude of 45°. They then saw a half a league from there another arm of the sea. They built a brigantine, and sailing through this they fell in with a well-populated city, whose inhabitants gave them whatever they needed, and made some houses of boards for them on the beach. They remained there until, on account of some incivility of a soldier to a woman, they were ejected from the country and returned. From this it is inferred that the two seas are close together in that place, and if Your Majesty would order New Mexico to be Pacified (some letters lost) the navigation from here would be easy, keeping ships in both seas. Padre Sedeno, rector of the Company of Jesus, who died about two years ago, also told me about this, and said that while he was in Florida, Pedro Melendez² had communicated with him about it many times.

"These two discoveries would be very easy to make from these islands, and at little more cost than from Spain, as the entrances from there are difficult to find, while from here they cannot be missed, nor does any impediment offer. The first year that Gomez Perez Dasmarinas came here as Governor, he treated with me about sending me with a ship to discover this strait, but because of the expedition which he decided to make to Maluca, he postponed it, and as he was afterwards killed so unfortunately, everything came to a stop, but I believe that if he had lived he would have advanced the affairs of these parts very much, and would have served Your Majesty well in view of the valor and zeal which he displayed."

From the context of Father de Rada's account, Juan de Rivas and the unidentified Portuguese envisioned a strait crossing North America in a southwest-northeast direction based upon their personal knowledge of the gulf and river of Saint Lawrence and some unspecified information defining the western outlet on the Pacific coast. Their concept visualized the land mass of Asia as extending continuously eastward and north of the American continent in the manner that some of the cosmographers of that day believed it did. In consequence, they termed the northern shore of their strait the "Chinese shore." The North Pacific Ocean was then of unknown extent and was believed to be much smaller than it is. Considering that de Rada was probably recording this story in the Philippines, it is being spoken of simply as an extension of the sea in that area, that is, this China Sea.³

-
1. To the Spanish in the 16th century, Florida included all of the Atlantic seaboard from the peninsula of Florida to the Gulf of Saint Lawrence.
 2. Pedro Menéndez de Avilés, the commander of the Spanish expedition that was sent to depose the French from Florida in 1565 and who founded the City of St. Augustine.
 3. At least one early map names the sea between Asia and North America the Golfo Chinan. See Zaltieri Map of 1566, Wagner, Cartography of the Northwest Coast of America, Vol. 1, p. 57.

The Account of N. de Morena, continued.

Noteworthy is the mention of many small islands described as landmarks by which the western entrance of the strait could be found. Although the description that they were on the side of the strait toward the South Sea of the north may be ambiguous, depending upon its interpretation, the statement that they were on the north side coming from China is specific. Coupled with the landmarks given for the strait itself, the relationship of strait and islands is strikingly characteristic of the entrance to San Francisco Bay with the Farallon Islands lying offshore.

Although the Farallones are geographically located south of the Golden Gate, they actually lie north of a course from China or the Philippines as it would be laid down on a Mercator chart, that is, about west-southwest. The analogy would be particularly true for the 16th century concept of the Pacific Ocean.

From the context of the account, the strait is described as though approaching it from the west, and the landmarks are coastal landmarks by which it could be found by following the coast alone, as was stated. The left side, that is, the north or Chinese shore, was very high, with pine trees, as is the north shore of the Golden Gate with its steep bluffs reaching a height of more than 900 feet and with high country northward with fir and redwood forests on the coastal slopes. On the other side, or San Francisco shore, it is very low, but also wooded, which is relatively true, for the heights are less than 400 feet and diminish to the dunes and flat slopes of the Sunset District on the coast. Also wooded may be compared to the brush and scattered laurel and oak which once dotted the San Francisco side.

If Cermeño had been given this much information in 1595 when he sailed for the west coast, whether based on the Morena account or not, then his action in sailing out to the Farallones from Drakes Bay raises an interesting point of speculation, for then it would have appeared logical for him to find this strait by standing into the coast south of these islands just as the ships from the Philippines would do to guide themselves by those landmarks. The reconstruction of Cermeño's course from Drakes Bay indicated that he lay-to overnight just south of the Southeast Farallon and stood in for the shore the next morning instead of sailing directly for Point Año Nuevo down the coast. Though coming close to the Golden Gate by this means, he was never in a good position to discern that there was a strait, and failing to see one, his disillusionment is apparently reflected in his comment for that day.

It is tempting to draw a parallel with the Golden Gate and the description of the strait being seemingly very small, is very large and deep, but the context of the account clearly makes this the eastern entrance, unless it can be inferred that de Rivas and the Portuguese considered the whole strait to be of that character to where it disembogued on the Pacific coast.

The Account of N. de Morena, continued.

In this respect, it becomes a matter of interest to determine what part of the Saint Lawrence River was referred to by the above description. In following the coast down toward the southwest on the northern side of the Gaspe Peninsula, the nearest approach to an entrance is at Cap Chat, but this has a width of 25 nautical miles and, though very large and very deep, it could hardly be seemingly very small. From that point on, there is no significant narrowing until the Isle de Orleans is reached, but in all probability, the place where the entrance is struck was at Quebec, where the river abruptly becomes a narrow, deep strait about a third of a mile wide.¹

The description that in the strait the wind was of no service, but that the currents draw them into it and take them out is probably based also on a personal knowledge of the Saint Lawrence River, which is a salt water estuary as far as the Isle de Orleans. As far inland as Quebec, the range of tide is large, being between 10 and 14 feet at neap and spring tides respectively, thus requiring a sailing vessel to be navigated largely in accordance with the tidal currents.

Father de Rada may have ascribed a latitude for the western opening of the strait, but if it had been anything near 38° , Cermeño had positively indicated that nothing was to be found there worth mentioning by the time Coronel wrote his letter to the King in 1597. Instead, Coronel implies that the strait might be found near 42° latitude by inferring that whales known to abound in great numbers in the Gulf of Saint Lawrence had passed through the strait and emerged near that latitude on the west coast. Since he does not otherwise assign a latitude to the western entrance to the strait, it is possible too that he privately entertained doubts of Cermeño's discoveries below 42° , as it is known that in Mexico there was a feeling that Cermeño had seen very little from the launch.

Instructions to Vizcaino:

The second document mentioned as containing an indication of Morena's discovery is a set of instructions issued to Vizcaino by the Viceroy of Mexico, the Conde de Monterey, for the voyage to the northwest coast which was made in 1602-03. Although Vizcaino's primary objective was an exploration of the northwest coast, Monterey gave him, in addition, the option of exploring the head of the Gulf of California on his return if he had time and resources.

-
1. From Quebec the river is navigable by seagoing vessels to Montreal and varies in width from about a mile to three miles. It is surprising that Cartier's discovery that the river ended in rapids above Montreal was apparently unknown to de Rivas and the Portuguese, thereby ruling out any possibility for a through strait. The fact seems to be borne out in the account credited to Fr. Aguirre, however, as the river ceases to be navigable in about 45° latitude as stated in his account.

The Account of N. de Morena, continued.

In the instructions for the latter objective, No. 23, there is a curious restriction on passing beyond latitude 37° or 38° , or even going to 37° if there was any sign that the gulf turned east, or east-southeast, or west, or west-southwest within ten or twelve leagues (30 to 36 nautical miles) of reaching that latitude. Significantly, San Francisco Bay lies within those latitudes, and the reference to the gulf turning there could conceivably refer to the Golden Gate, which trends west-southwest, and to San Pablo Bay, which turns east, and to Carquinez Strait, which trends east-southeast to southeast.

Although it might be pointed out that in 1582 Sir Humphrey Gilbert published a map in a discourse on the Northwest Passage showing the head of the Gulf of California as branching northeast to link with the Saint Lawrence River and northwest to possibly enter the Pacific Ocean at 39° latitude, he located the branch in 34° , unmistakably with reference to the junction of the Colorado and Gila rivers.

Monterey had made it clear after Vizcaino's voyage that he was not in favor of discovering a Northwest Passage, and it appears evident in his instruction that he was fearful of one being found. His instruction No. 22, included here, allows Vizcaino to proceed beyond Cape Mendocino in about 41° for one hundred leagues (about 300 nautical miles) only if the coast was found to continue to run toward the west. One theory of that time held that from Cape Mendocino the coast would trend to the east until it reached what is now known as Hudson Strait. This was probably the route by which Francis Drake had hoped to return to England after his raid on the west coasts of South and Central America. The limitation of distance beyond Cape Mendocino which Vizcaino was permitted to go had the additional effect of keeping him well below the strait which Juan de Fuca said he found between 47° and 48° .

Instructions to Vizcaino

No. 22. The precise command which you carry is to discover, inspect and map all the ports, bars, bays and ensenadas, capes and points from the Cabo de San Lucas to Cabo Mendocino, without failing to bring back a fit clear statement of anything important regarding these. In some meetings which I have held with some expert and experienced persons it has seemed advisable that, once you have inspected and discovered Cabo Mendocino, you have a fair wind and one neither very contrary nor one which by its force might endanger your breaking your masts or losing your rigging, you should employ reasonable diligence in exploring as far as Cabo Blanco, which is in 44° . As the coast is neither known nor has been seen and in consequence there is nothing certain about it on the maps, if you should find that from Cabo Mendocino to Cabo Blanco it runs toward the west you shall reconnoiter it for a hundred leagues and no more. Having accomplished this, even though the winds be favorable, do not go farther, but take the return route to Cabo San Lucas.

The Account of N. de Morena, continued.

Instructions to Vizcaino, continued.

"No. 23. Once having reached the Cabo de San Lucas, after accomplishing the discovery which you have under your charge, if you have wind and it is not from the north and you have sufficient food to accomplish an entry into the Californias you will do so, following the coast from cape to cape, examining the ports and ensenadas from the Cabo de San Lucas, entering by the mouth and coming back as far as the Puerto de la Navidad, unless the southwest winds do not give out. In such case you will take advantage of them, and go on as far as the wind permits, inspecting the quality of the country and the climate, and seeing if the inhabitants, of whom I have heard a great deal, wear clothes or make any show of numbers or of quality, until you reach 37° or at most 38°, unless previously the sea had shown signs for ten or twelve leagues of turning to the east or east-southeast or west or west-southwest. In such a case, when you discover this, no matter where you may be, you will turn about and return to the coast of Navidad or Salagua, inspecting everything as far as the well-known ports of this New Spain.

APPENDIX IX

TIDE PREDICTIONS FOR NOVEMBER

AND DECEMBER, 1595

DRAKES BAY, CALIFORNIA

Data compiled by
U. S. Department of Commerce
Coast and Geodetic Survey
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
Rockville, Maryland

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
WASHINGTON SCIENCE CENTER
ROCKVILLE, MD. 20852

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

September 7, 1965

IN REPLY REFER TO:
2323-161-SIP 2


Mr. Raymond Aker
Drake Navigators Guild
2605 Waverley Street
Palo Alto, California 94306

Dear Mr. Aker:

Your letter of August 17, originally sent to our San Francisco Regional Office, has been forwarded to us for reply. Although we do print a limited amount of astronomical data in our tide tables, this agency is not responsible for specialized data of that nature. We are therefore referring your request for the moon's phases for the months of November and December 1595 to the Nautical Almanac Office, U. S. Naval Observatory.

In response to your request for predicted tides for that period, we are enclosing predictions referred to a datum of mean lower low water. Naturally, these predictions must depend on the assumption that there have been no substantial changes of land features in that area and that normal weather conditions were prevalent. We hope they will be of help to you.

Sincerely yours,


William D. Barbee
CDR, USESSA
Chief, Marine Data Division

Enclosure

NAVY DEPARTMENT
U. S. NAVAL OBSERVATORY
WASHINGTON, D.C. 20390

2 November 1965

Dear Mr. Aker:

Your letter of 17 August to the U. S. Coast and Geodetic Survey has been referred to the U. S. Naval Observatory for reply.

The following table contains the Gregorian dates and Greenwich civil times of the phases of the moon for the months of November and December 1595.

Phases of the Moon 1595
Gregorian Calendar
Greenwich Civil Time

| <u>New Moon</u> | <u>First Quarter</u> | <u>Full Moon</u> | <u>Last Quarter</u> |
|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| Nov. 1 ^d 22 ^h | Nov. 8 ^d 21 ^h | Nov. 17 ^d 02 ^h | Nov. 24 ^d 17 ^h |
| Dec. 1 08 | Dec. 8 16 | Dec. 16 19 | Dec. 24 00 |
| Dec. 30 21 | | | |

These times are accurate to within one or two hours.

Sincerely yours,

R. L. Duncombe
R. L. DUNCOMBE
Director
Nautical Almanac Office

Mr. Raymond Aker
President
Drake Navigators Guild
2605 Waverley Street
Palo Alto, California 94306

DRAKES BAY, CALIFORNIA, 1595

TIMES AND HEIGHTS OF HIGH AND LOW WATERS
NOVEMBER

| DAY | TIME H.M. | HT. FT. | DAY | TIME H.M. | HT. FT. | DAY | TIME H.M. | HT. FT. |
|-----|--------------|------------|-----|--------------|------------|-----|--------------|------------|
| W 1 | 0310 | 1.5 | S11 | 0021 | 0.9 | T21 | 0304 | 4.0 |
| | 0930 | 6.1 | | 0717 | 5.0 | | 0629 | 3.6 |
| | 1615 | -0.6 | | 1336 | 2.0 | | 1150 | 5.3 |
| | 2253 | 4.7 | | 1912 | 4.0 | | 2003 | -0.4 |
| T 2 | 0353 | 2.0 | S12 | 0102 | 1.2 | W22 | 0356 | 4.1 |
| | 1005 | 6.2 | | 0748 | 5.2 | | 0733 | 3.5 |
| | 1704 | -1.0 | | 1417 | 1.5 | | 1248 | 5.0 |
| | 2355 | 4.6 | | 2010 | 4.0 | | 2053 | -0.2 |
| F 3 | 0437 | 2.5 | M13 | 0137 | 1.6 | T23 | 0441 | 4.2 |
| | 1045 | 6.2 | | 0817 | 5.2 | | 0850 | 3.4 |
| | 1755 | -1.1 | | 1435 | 1.0 | | 1359 | 4.6 |
| | | | | 2103 | 4.0 | | 2146 | 0.0 |
| S 4 | 0059 | 4.4 | T14 | 0210 | 1.9 | F24 | 0518 | 4.5 |
| | 0523 | 2.8 | | 0843 | 5.3 | | 1014 | 3.1 |
| | 1125 | 6.0 | | 1527 | 0.6 | | 1534 | 4.4 |
| | 1849 | -1.0 | | 2153 | 4.0 | | 2235 | 0.3 |
| S 5 | 0203 | 4.4 | W15 | 0243 | 2.3 | S25 | 0553 | 4.9 |
| | 0615 | 3.1 | | 0906 | 5.3 | | 1131 | 2.4 |
| | 1212 | 5.7 | | 1559 | 0.2 | | 1708 | 4.1 |
| | 1945 | -0.7 | | 2243 | 4.1 | | 2325 | 0.7 |
| M 6 | 0311 | 4.3 | T16 | 0315 | 2.6 | S26 | 0628 | 5.3 |
| | 0718 | 3.4 | | 0928 | 5.4 | | 1237 | 1.6 |
| | 1307 | 5.3 | | 1632 | -0.1 | | 1835 | 4.0 |
| | 2043 | -0.4 | | 2332 | 4.0 | | | |
| T 7 | 0416 | 4.4 | F17 | 0348 | 2.9 | M27 | 0013 | 1.1 |
| | 0834 | 3.4 | | 0948 | 5.3 | | 0702 | 5.7 |
| | 1412 | 4.7 | | 1707 | -0.3 | | 1335 | 0.7 |
| | 2144 | -0.1 | | | | | 1949 | 4.1 |
| W 8 | 0514 | 4.6 | S18 | 0023 | 4.0 | T28 | 0101 | 1.6 |
| | 1009 | 3.4 | | 0420 | 3.1 | | 0737 | 6.0 |
| | 1534 | 4.4 | | 1009 | 5.3 | | 1427 | -0.1 |
| | 2244 | 0.2 | | 1746 | -0.4 | | 2058 | 4.2 |
| T 9 | 0602 | 4.7 | S19 | 0115 | 4.0 | W29 | 0148 | 2.0 |
| | 1140 | 3.0 | | 0457 | 3.3 | | 0815 | 6.3 |
| | 1655 | 4.2 | | 1035 | 5.4 | | 1518 | -0.7 |
| | 2336 | 0.6 | | 1828 | -0.4 | | 2202 | 4.3 |
| F10 | 0642 | 4.8 | M20 | 0209 | 4.0 | T30 | 0235 | 2.4 |
| | 1249 | 2.6 | | 0537 | 3.5 | | 0845 | 6.4 |
| | 1807 | 4.0 | | 1108 | 5.4 | | 1607 | -1.2 |
| | | | | 1914 | -0.5 | | 2302 | 4.4 |

DRAKES BAY, CALIFORNIA, 1955

TIMES AND HEIGHTS OF HIGH AND LOW WATERS

DECEMBER

| DAY | TIME H.M. | HT. FT. | DAY | TIME H.M. | HT. FT. | DAY | TIME H.M. | HT. FT. |
|-----|--------------|------------|-----|--------------|------------|-----|--------------|------------|
| F 1 | 0323 | 2.8 | M11 | 0654 | 5.3 | T21 | 0304 | 4.4 |
| | 0936 | 6.4 | | 1351 | 1.1 | | 0727 | 3.2 |
| | 1656 | -1.3 | | 1955 | 3.6 | | 1251 | 5.0 |
| | | | | | | | 2019 | -0.2 |
| S 2 | 0001 | 4.4 | T12 | 0039 | 2.2 | F22 | 0343 | 4.6 |
| | 0411 | 3.0 | | 0725 | 5.3 | | 0840 | 2.9 |
| | 1020 | 6.2 | | 1427 | 0.6 | | 1402 | 4.5 |
| | 1745 | -1.3 | | 2055 | 3.7 | | 2104 | 0.2 |
| S 3 | 0058 | 4.4 | W13 | 0121 | 2.6 | S23 | 0421 | 4.9 |
| | 0505 | 3.2 | | 0753 | 5.4 | | 0958 | 2.4 |
| | 1105 | 6.0 | | 1504 | 0.2 | | 1530 | 4.0 |
| | 1834 | -1.1 | | 2150 | 3.8 | | 2151 | 0.7 |
| M 4 | 0153 | 4.5 | T14 | 0200 | 2.9 | S24 | 0500 | 5.2 |
| | 0559 | 3.3 | | 0822 | 5.4 | | 1115 | 1.7 |
| | 1153 | 5.6 | | 1539 | -0.2 | | 1707 | 3.7 |
| | 1924 | -0.8 | | 2239 | 4.0 | | 2238 | 1.4 |
| T 5 | 0247 | 4.5 | F15 | 0238 | 3.1 | M25 | 0538 | 5.6 |
| | 0703 | 3.3 | | 0850 | 5.6 | | 1223 | 0.9 |
| | 1247 | 5.2 | | 1615 | -0.4 | | 1838 | 3.7 |
| | 2012 | -0.4 | | 2328 | 4.1 | | 2331 | 1.9 |
| W 6 | 0339 | 4.6 | S16 | 0317 | 3.2 | T26 | 0618 | 5.9 |
| | 0817 | 3.3 | | 0917 | 5.6 | | 1324 | 0.1 |
| | 1346 | 4.7 | | 1653 | -0.6 | | 1959 | 3.7 |
| | 2100 | 0.1 | | | | | | |
| T 7 | 0426 | 4.7 | S17 | 0015 | 4.1 | W27 | 0024 | 2.4 |
| | 0942 | 3.1 | | 0357 | 3.4 | | 0703 | 6.2 |
| | 1456 | 4.1 | | 0949 | 5.6 | | 1419 | -0.5 |
| | 2147 | 0.5 | | 1731 | -0.8 | | 2109 | 4.0 |
| F 8 | 0509 | 4.8 | M18 | 0102 | 4.1 | T28 | 0117 | 2.8 |
| | 1103 | 2.8 | | 0438 | 3.4 | | 0748 | 6.3 |
| | 1617 | 3.8 | | 1023 | 5.7 | | 1512 | -1.0 |
| | 2231 | 1.0 | | 1812 | -0.8 | | 2209 | 4.2 |
| S 9 | 0546 | 5.0 | T19 | 0143 | 4.2 | F29 | 0213 | 3.0 |
| | 1213 | 2.2 | | 0527 | 3.4 | | 0834 | 6.4 |
| | 1736 | 3.6 | | 1105 | 5.6 | | 1601 | -1.2 |
| | 2313 | 1.4 | | 1853 | -0.7 | | 2305 | 4.3 |
| S10 | 0622 | 5.1 | W20 | 0225 | 4.2 | S30 | 0306 | 3.1 |
| | 1307 | 1.6 | | 0622 | 3.4 | | 0922 | 6.3 |
| | 1849 | 3.5 | | 1153 | 5.4 | | 1649 | -1.2 |
| | 2357 | 1.8 | | 1936 | -0.5 | | 2353 | 4.4 |
| | | | | | | S31 | 0401 | 3.2 |
| | | | | | | | 1008 | 6.1 |
| | | | | | | | 1733 | -1.2 |

BIBLIOGRAPHY

- BAKER, J.N.L. A History of Geographical Discovery and Exploration. Boston, Houghton Mifflin Company, 1931.
- BAKER, WILLIAM A. Colonial Vessels, Some Seventeenth Century Ship Designs. Barre, Mass., Barre Publishing Company, 1962.
- BANCROFT, HUBERT HOWE. History of Mexico. San Francisco, The History Company, 1888. 6 Vols.
- _____. History of California. San Francisco, The History Company, 1884-1890. 7 Vols.
- BROWN, LLOYD A. The Story of Maps. Boston, Little, Brown and Company, 1949.
- DEBENHAM, FRANK. Discovery and Exploration, an Atlas History. New York, Doubleday and Company, 1960.
- ELDRIDGE, ZOETH S. History of California. New York, The Century History Company, 1915.
- _____. The March of Portola and the Log of the San Carlos. San Francisco, The California Promotion Committee, 1909.
- HAKLUYT, RICHARD. The Voyages of the English Nation to America (1598-1600). Edited by Edmund Goldsmid, Edinburgh, E. & G. Goldsmid, 1889.
- HEIZER, ROBERT FLEMING. Archaeological Evidence of Sebastian Rodriguez Cermeño's California Visit in 1595. San Francisco, California Historical Society, 1942. (Reprint from California Historical Society Quarterly, XX Number 4, December, 1941.
- _____. Francis Drake and the California Indians, 1579. Berkeley and Los Angeles, University of California Press, 1947.
- HOLMES, MAURICE G. From New Spain by Sea to the Californias, 1519-1668. Glendale, California, The Arthur H. Clark Company, 1963.
- LAND OF SUNSHINE. The Magazine of California and the West. Edited by Charles F. Lummis. Vol. 12:3, Los Angeles, February, 1900.
- LAUGHTON, L.G. CARR. English and Spanish Tonnage in 1588. The Mariner's Mirror, Vol. 44, No. 2, May 1958, 151-154.
- MONSON, SIR WILLIAM. The Naval Tracts of Sir William Monson in Six Books. Edited by M. Oppenheim. London, The Navy Records Society, 1902-1914. 5 Vols.
- NUTTAL, ZELIA. New Light on Drake. London, The Hakluyt Society, 1914.

- OKO, CAPTAIN ADOLPH S. Francis Drake and Nova Albion. California Historical Society Quarterly, XLIII Number 2, June, 1964.
- PENZER, N.M., editor. The World Encompassed and Analogous Contemporary Documents concerning Sir Francis Drake's Circumnavigation of the World, with an Appreciation of Achievement by Sir Richard Carnac Temple, Bt. London, The Argonaut Press, 1926.
- SHURZ, WILLIAM LYTLE. The Manila Galleon. New York, E. P. Dutton and Company, Inc., 1939.
- SKELTON, R.A. Explorer's Maps. London, Routledge and Kegan Paul, 1958.
- TAYLOR, E.G.R. The Haven Finding Art. New York, Abelard-Schuman Ltd., 1957.
- _____. Tudor Geography, 1485-1583. London, Methuen and Company, 1930.
- THOMPSON, EDGAR K. English and Spanish Tonnage in 1588. The Mariner's Mirror, Vol. 45, No. 2, May 1959, p. 154.
- UNITED STATES COAST PILOT. California, Oregon, and Washington. Washington, D.C., U. S. Coast and Geodetic Survey, 1917.
- VON DER PORTEN, EDWARD P. Drakes Bay Shell Mound Archaeology, 1951-1962. Point Reyes, Drake Navigators Guild, 1963.
- WAGNER, HENRY R. Sir Francis Drake's Voyage Around the World. San Francisco, John Howell, 1926.
- _____. Spanish Voyages to the Northwest Coast of America in the Sixteenth Century. San Francisco, California Historical Society, 1929.
- _____. Cartography of the Northwest Coast of America to the Year 1800. Berkeley, University of California Press, 1937. 2 Vols.
- _____, ed. The Voyage to California of Sebastian Rodriguez Cermeño in 1595. California Historical Society Quarterly, III Number 1, April, 1924, 3-24.
- _____. Creation of Rights of Sovereignty through Symbolic Acts. Pacific Historical Review, VII Number 4, December, 1938, 297-326.
- WATERS, DAVID W. The Art of Navigation in Elizabethan and Early Stuart Times. London, Hollis and Carter, 1958.