

THE CORONADO EXPEDITION OF 1540-1542
A SPECIAL HISTORY REPORT PREPARED
FOR THE CORONADO TRAIL STUDY

by

James E. Ivey

Diane Lee Rhodes

Joseph P. Sanchez

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TABLE OF CONTENTS

TABLE OF CONTENTS. iii

LIST OF FIGURES. v

ACKNOWLEDGMENTS vii

CHAPTER 1: INTRODUCTION 1

CHAPTER 2: HISTORICAL OVERVIEW 5

CHAPTER 3: HISTORICAL AND ARCHEOLOGICAL RESEARCH

METHODOLOGY 17

HISTORICAL RESEARCH 17

ARCHEOLOGICAL RESEARCH 18

DEFINITION OF THE STUDY AREA 18

DEFINITION OF CORONADO SITE TYPES 20

Campsites 23

Artifacts 24

IDENTIFICATION OF CULTURE AREAS AND CHRONOLOGIES 27

ANALYSIS OF ARCHEOLOGICAL SITE FILES 28

CORRELATION OF ARCHEOLOGICAL FINDINGS AND ROUTE INFORMATION 30

CHAPTER 4: ROUTE ANALYSIS 31

INTRODUCTION 31

SPEED, DISTANCE, AND TIME OF TRAVEL 41

THE ROUTE FROM CULIACÁN TO CÍBOLA: DISCUSSION OF SECONDARY SOURCES 46

THE ROUTE FROM CULIACAN TO CIBOLA: ANALYSIS 52

THE ROUTE FROM CIBOLA TO CICUYE: DISCUSSION OF SECONDARY SOURCES 60

THE ROUTE FROM CIBOLA TO CICUYE: ANALYSIS 63

THE ROUTE FROM CICUYE TO CONA: DISCUSSION OF SECONDARY SOURCES 65

THE ROUTE FROM CICUYE TO CONA: ANALYSIS 72

THE ROUTE FROM CONA TO QUIVIRA: DISCUSSION OF SECONDARY SOURCES 85

THE ROUTE FROM CONA TO QUIVIRA: ANALYSIS 88

THE ROUTE FROM QUIVIRA TO MEXICO: DISCUSSION OF SECONDARY SOURCES 95

THE ROUTE FROM QUIVIRA TO MEXICO: ANALYSIS 96

CHAPTER 5: SUMMARY AND RECOMMENDATIONS 99

SUMMARY 99

RECOMMENDATIONS 102

SITES RECOMMENDED FOR FURTHER STUDY 104

Arizona 104

New Mexico 104

Texas 105

Oklahoma 105

Kansas 105

CHAPTER 6: SELECTED BIBLIOGRAPHY	107
PRINTED MATERIALS	107
OTHER SOURCES	
.	134
APPENDIX A: NEW MEXICO AND KANSAS SITES OCCUPIED DURING THE	
1500S	139
WESTERN NEW MEXICO (ZUNI SITES)	139
CENTRAL NEW MEXICO (ACOMA)	141
CENTRAL NEW MEXICO (RIO GRANDE VALLEY SITES)	142
Tutahaco	142
Tiguex	144
NEW MEXICO (THE GALISTEO PUEBLOS)	150
KANSAS (THE GREAT BEND ASPECT SITES)	151

LIST OF FIGURES

Figure 1	33
Figure 2	35
Figure 3	37
Figure 4	39



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CHAPTER 1: INTRODUCTION

In 1988, Congress amended the National Trails System Act to provide for a study to determine if the route of Coronado's expedition in the 1540s satisfies the criteria for inclusion in the national trails system. The legislation defined the study area (i.e., Arizona, New Mexico, Texas, Oklahoma, and Kansas) and directed the secretary of the interior to review all original Spanish documentation on the route, search for new primary data, and examine all information on the archeological sites along the route. The National Park Service (NPS) was selected to complete this project. Because of time and money limitations, the NPS researchers focused on routes Coronado himself might have traversed within the continental United States, and did not examine the travels of members of his group who explored other areas.

The NPS has prepared a national trail study report on the Coronado expedition route to assess the route's eligibility for national trail designation and present alternatives for commemoration and interpretation. A preliminary draft of the following background history report was used as a working paper to assist the NPS in the preparation of the trail study. The draft history report was sent to about 60 recognized experts on the Coronado expedition for review during the summer of 1990. Their comments have been incorporated into this final report.

Chapter 2 contains a short historical overview of the Coronado expedition and its people. Chapter 3 describes the research conducted during this project. The review of Spanish documentation and the search for new primary data were undertaken by the NPS Spanish Colonial Research Center in Albuquerque, New Mexico. New translations were made of some items. Selected bibliographic sources were analyzed for place names associated with the expedition. The Center also conducted archival research on primary documents and developed a historical dictionary of place names.

Chapter 3 also describes the research conducted by the NPS Denver Service Center on archeological sites, including relevant ethnographic data, which was begun in the spring of 1990. Because the location of the route was unknown, the researcher first collected and analyzed secondary sources about the entrada to define broad geographic research parameters.

Archaeologists, historians, and cultural geographers whose work has focused upon the entrada were contacted to elicit additional information on possible routes. Next, using the Spanish narratives in conjunction with published archeological data on sixteenth century sites, the researcher developed a "profile" of typical Coronado sites and diagnostic artifacts.

Data on applicable cultural areas and chronologies were then accumulated and analyzed, and used in the search through archeological site files in all five states. Sites that met the previously defined criteria were plotted on topographic maps.

The next step in the research process was to analyze the primary documents for details such as time, distance, and direction, and landmarks. This analysis was completed by the Denver Service Center and the National Park Service's Southwest Regional Office. Finally, data drawn from the historical, archeological and ethnographic research, and the analysis of primary documents were compared, analyzed, and integrated.

Chapter 4 presents the results of this analytic process, including a discussion of the routes advocated by the major secondary sources, and a short analysis of the integrated history, archeology, and ethnographic information for each portion of the route. This chapter is divided into five route segments: Mexico to Cibola; Cibola to Tiguex; Tiguex to Cona; Cona to Quivira; and the return to Mexico. A matrix of specific details regarding time, distance, and direction was developed from the primary Spanish

documents. This matrix has not been included with the history study, but is on file at the Denver Service Center, National Park Service, Denver.

Chapter 5 contains a brief statement of conclusions and recommendations, along with a list of sites suggested for further study by Coronado scholars contacted during this project. The selected bibliography of primary and secondary sources cited in this research project is included as Chapter 6. This bibliography is divided into two parts: Printed Sources, and Other Sources (which includes manuscripts and personal communications). Brief descriptions of sites that were occupied during the mid-sixteenth century, and which were in areas thought to have been visited by Coronado, are included as Appendix A.



CHAPTER 2: HISTORICAL OVERVIEW

In a very profound way, United States (western) history commenced with the arrival of Europeans from the Iberian Peninsula. Long before Englishmen landed on the shores of Virginia and the rocky littoral of Plymouth, Spanish explorers had already traversed the Atlantic coast from Labrador to the Strait of Magellan, and determined the extent of North America from Florida to California. Between 1539 and 1543, three Spanish expeditions explored the interior and western coast of the present United States. One expedition led by Hernando de Soto travelled from Florida to the Mississippi River and beyond. Francisco Vázquez de Coronado led an expedition from the west Mexican coast to central Kansas. The third expedition was led by Juan Rodriguez Cabrillo and explored the country from the west Mexican coast to possibly the Rogue River in Oregon. Collectively, these Spanish explorers determined the size of North America and assessed its abundant natural resources. Within this vast land lived many American Indian cultural groups, which the Spanish described in print for the first time within the Eurocentric context of the period.

Francisco Vázquez de Coronado led the first European undertaking to explore what would later form the greater United States' Southwest. Within 48 years after Columbus' 1492 landing, Coronado's men stood on the edge of Arizona's Grand Canyon and visited the Indian pueblos at Zuni, Hopi, Acoma, Pecos, and the villages along the Rio Grande. The expedition followed a series of routes from Compostela in western Mexico through portions of the present-day states of Arizona and New Mexico. One contingent explored westward from Zuni and crossed the Colorado River into California. From New Mexico, the expedition went east toward the Great Plains where it explored parts of Texas and saw and described the large buffalo herds. Moving north, the Coronado expedition crossed Oklahoma, and traversed southern Kansas as far as the Great Bend of the Arkansas River before reaching Indian villages in central Kansas. Thus, the

expedition became one of the epic stories of the Age of European Discovery.

From a world history perspective, the Coronado expedition represents a continuation of European expansion that dates to the thirteenth century when Marco Polo sparked the imagination of his countrymen to develop a route to the Orient. Wars, banditry, religious animosities and great distances did not deter Europeans from their quest to establish a trade route to the Far East where they might obtain spices, gold, and luxury items.

Spawned by a desire to find a water route to Cathay (China) and Cipangu (Japan), and encouraged by knowledge as well as legends and mythology from the ancient worlds of Greece and Rome, Italians, Portuguese and Spaniards took the lead in the fifteenth century in exploring the Mediterranean and Atlantic seacoast of Africa. Centuries of European exploration led to Christopher Columbus' voyage across the Atlantic. His discovery of a land mass between Europe and the Orient became an object of European curiosity and triggered further expansion.

Exploration of the Western Hemisphere became a priority among the leading powers of Spain, Portugal, France, and England. Hernando Cortes' conquest of the Aztec kingdom reinforced the European quest for legendary civilizations mentioned in Roman and Greek mythology. American Indian legends became interwoven with European mythology. Fabled cities of gold and silver took on Indian names like Quivira, and the story of King Midas with his golden touch soon gave way to the legend of El Dorado. Spanish, Portuguese, French and English explorers, like Jacques Cartier and Walter Raleigh, all searched for these legendary places.

As part of this massive effort to learn more about the Americas, the Spanish crown authorized the exploration of North America with

a three-pronged effort: De Soto in Florida, Cabrillo along the California coast, and Coronado in the continent's interior.

Like other pioneering efforts in the Age of European Discovery, the Coronado expedition served as part of a historical process that marked the New World with its distinct Indo-European character. The expedition is significant because 1) it prepared the way for eventual European settlement by following American Indian trails northward and documenting them for those who would follow; 2) it established a historical tradition (i.e. the first written history) from California to Kansas 3) it contributed geographical knowledge of North America (Coronado estimated the width of the continent to be 3,000 miles from sea to sea); 4) it contributed new information about American Indian cultures; and 5) it described North America flora and fauna.

The Coronado expedition was also significant for another reason. New ideas, material goods, livestock, and diseases introduced by the Spanish radically changed the cultures of indigenous Southwestern and Plains groups. Devastating changes occurred in these groups' complex religious, social, and political organizations, as well as in their population size and distribution. Thus, this Spanish entrada signified the end of prehistory in the American Southwest.

To understand the expedition, one must look at its leader, Francisco Vázquez de Coronado. Coronado was born in 1510 in Salamanca, Spain, to the nobleman, Juan Vázquez de Coronado and Doña Isabel de Lujan. In 1512, Juan Vázquez was appointed corregidor (magistrate and alcalde mayor) of Burgos in northern Spain. Because of legal entanglements, the father created a mayorazgo, (or tailed estate) in 1520, in which he assigned his estate to Gonzalo Vázquez de Coronado--Francisco's eldest brother. Following traditional rules of primogeniture, the mayorazgo prescribed that the estate would be passed down through Gonzalo's

first born male descendants. Francisco and Gonzalo's other two younger brothers, both named Juan Vázquez de Coronado, consequently had to seek their own positions in life. One brother became an adelantado in Costa Rica and the other a comendador of the order of St. John of the encomienda of Cubillas. With his social fate decided by the mayorazgo, Francisco Vázquez de Coronado bided his time for an opportunity.

In 1535, Antonio de Mendoza was appointed viceroy to Mexico. With Viceroy Mendoza's political friendship and patronage, Francisco Vázquez de Coronado's prominence rose in Mexico City. He became the viceroy's protegee. By the summer of 1538, Francisco Vázquez, had been appointed a member of the Mexico City council and was made an organizer and charter member of the Brotherhood of the Blessed Sacrament for Charity--a charitable society founded to aid the needy and educate orphan girls. Soon after, he married the wealthy heiress Beatriz de Estrada. She was the daughter of the deceased royal treasurer Alonso de Estrada (rumored to be a son of the late King Ferdinand). His mother-in-law, doña Marina, presented the newly weds with a large country estate--half of Talpa. In addition, Francisco Vázquez had by his own right acquired the lands of Juan de Burgos, who had returned to Spain. Thus, in a few short years Francisco Vázquez had climbed the political and social ladder of colonial New Spain. Due to the imprisonment of Nuño de Guzman, governor of Nueva Galicia, north of Mexico City, Viceroy Mendoza appointed Francisco Vázquez de Coronado to the vacant governorship in 1539. His star appeared to be in continual ascent.

Meanwhile, Alvar Nuñez Cabeza de Vaca and his three companions, survivors of the ill-fated Panfilo de Narvaez expedition to Florida (1528), had been rescued in Sonora in 1536 and taken to Mexico City. There they reported on their shipwreck in the Gulf of Mexico and what they had seen in their eight years of wandering between the Texas coast and Sonora. Their stories inspired a series of

expeditions northward, one of which Governor Francisco Vázquez de Coronado led.

In the spring of 1539, Fray Marcos de Niza and a small party composed mainly of Mexican Indian guides and Estevan Dorantes, also known as Estevan the Moor, began travelling north to verify stories concerning possible rich civilizations such as Quivira and Topira. In the autumn of 1539, Niza returned with the news of the death of Estevan, who had been killed at one of the cities of Cibola. There is a lot of historical debate over whether or not Fray Marcos de Niza actually saw Cibola because his account of the journey is often ambiguous, particularly with regard to the route taken and the time of travel. A number of historians believe that de Niza did not have time to reach Zuni, and merely reported what he had heard of Cibola from his Indian guides after Estevan was killed. However, his accounts about Cibola were carefully written and do not seem particularly misleading with regard to his having seen any cities of gold. Of Zuni, he wrote in superlative terms and style:

I proceeded on my journey until coming within view of Cibola, which is situated in a plain, at the base of a round hill.

This pueblo has a fine appearance, the best I have seen in these regions. The houses are as they had been described to me by the Indians, all of stone, with terraces and flat roofs, as it seemed to me from a hill where I stood to view it. The city is larger than the city of Mexico....When I told the chieftains who were with me how well impressed I was with Cibola, they told me that it was the smallest of seven cities, and that Totontecac is much larger and better than all the seven, that it has so many houses and people that there is no end to it (Niza 1940:78-79).

Little in his writing suggests a city of gold; however, what he reported orally apparently was a different story. Viceroy Mendoza, confident of the existence of "another Mexico", ordered that a large expedition be organized to explore and verify the existence of the "Seven Cities of Gold" in the Kingdom of Quivira, possibly just beyond Cibola. Because of his rivalry with Hernando Cortes,

who had petitioned to lead the expedition, Viceroy Mendoza was anxious to appoint one of his own trusted followers. For that reason, he selected Francisco Vázquez de Coronado to lead the expedition to Cibola. Royal approval of Vázquez de Coronado to lead the expedition arrived on January 6, 1540, as he and the viceroy proceeded to plan for the expedition.

In late February 1540, Viceroy Mendoza reviewed the expedition at Compostela, south of Culiacán. Over 230 mounted men and 62 foot soldiers formed the main body of the Spanish troops, with others scheduled to join them on the way. Meantime, an advance guard under Melchior Díaz traveled northward to scout the trail ahead. By the end of February the main body of troops, including over 800 Mexican Indians (the number would later swell to just over 1,000), prepared to leave Compostela for Culiacán, the next staging area. The expedition's personnel included a number of colonial and international notables.¹ Three Spanish women listed as wives of foot soldiers accompanied the troops. Although the muster roll does not indicate his name, a surgeon travelled with the expeditionary force. A seawing of the expedition commanded by Hernando de Alarcón, consisting of two ships loaded with artillery, provisions, and munitions, travelled north in the Sea of California to the Colorado River. Six friars, aside from Marcos de Niza, participated in the expedition. The muster roll lists the names of five Portuguese, the most notable of whom was Andres do Campo. Do Campo remained on the Great Plains until the death of Fray Juan de Padilla. He then escaped to Panuco on the northeast coast of Mexico). Three, possibly four, Italians were included on the muster roll. Three Frenchman also accompanied the expedition.

¹Some authors suggest that one of the purposes of the entrada (besides the quest for gold and conversion of the Indians) was to absorb the unemployed, the transients, and the new arrivals to Mexico who had been unable to earn their livelihood as settlers (Hammond and Rey 1940a:6, 14).

Other expedition members included a Scot, a German, an Englishman, and a Fleming. There may have been additional people that were born in foreign countries, but the expedition's documentation does not establish their cases.

The march from Compostela to Culiacán, the last Spanish frontier outpost in the north, took almost a month. The large, unwieldy, expedition was slowed by the thickly forested mountains and by hostile Indian groups, who had previously felt the devastating blows of the Spanish conquest. Not only did Coronado's men have to herd 1,000 head of horses, they had to tend to 600 pack animals and other stock that included sheep, goats, pigs, and cattle. After reaching Culiacán, Coronado decided to advance with approximately 75 horsemen and 25 foot soldiers, some Mexican Indians, and a small herd of livestock. Tristan de Luna y Arellano took charge of the main army, which advanced to Cíbola at a slower pace.²

Led by native guides and accompanied by Fray Marcos de Niza, Coronado's expedition crossed one river valley after another through Sonora as it followed old Indian trails to Cíbola. The traditionally accepted route is that after leaving Culiacán the expedition passed near Pericos, an ancient settlement in country that opens into broad, flat, coastal plains. North beyond this area, the guides led the group through a series of rivers and into a narrow canyon, which they followed for some distance before reaching Corazones.

From Corazones, the expedition continued northward. After reaching Chichilticalli, the fatigued men and animals rested for two days to prepare for their march through the mountainous, unpopulated country ahead. The expedition moved northward until it was a day's

² Tristan de Luna later launched the ill-fated colonization of Mobile Bay in 1560-1561.

march from the first village of Cíbola³. After accidentally intruding on the Zuni's sacred pilgrimage, an advance guard of the expedition led by Garcia López de Cárdenas was attacked by the Zuni on July 6, 1540. The next day at the first village, called Granada (probably today's Hawikku), the fatigued and starving explorers attempted to unsuccessfully convince the Zuni of their friendly intentions. Coronado, believing he and his men might perish from lack of food and water, decided to attack the village. The battle was a military draw. After the Zunis retreated from Granada, they permitted the Spaniards to enter their other villages. The expedition camped in the Zuni area during the summer of 1540 while awaiting the arrival of the main army.

Cíbola served as Coronado's base of operations. Coronado sent forth small exploration parties from there. Led by Indian guides, each party reported new European discoveries: Pedro de Tovar reached Tusayan, one of the Hopi villages; and Garcia López de Cárdenas reached the Grand Canyon and peered into its depths, seeing the Colorado River below.

Shortly after Coronado's arrival at Cíbola, an Indian known as Bigotes (Whiskers) came from Cicuye (now Pecos) to Cíbola, a distance of around 130 miles, to trade skins and hides with the Zuni. (The Pecos Indians had, in turn, traded with the Plains Indians like the Teyas or Querechos whose buffalo hunting territory extended for several hundred miles out from Pecos.) Bigotes, a leader of important rank in his village, had heard of the Spaniards and brought gifts of hides, shields, and headpieces. It is no surprise that the news of Coronado's arrival had travelled so rapidly, because the Indian tribes throughout the Plains and the Southwest were sophisticated travelers and traders, with extensive

³The province of Cibola was comprised of six, perhaps seven, Indian pueblo villages. Descendants of the people of Cibola are the Zuni Tribe who now occupy the Zuni area of New Mexico.

communications networks and long established trade routes (Castañeda 1940:213).

Intrigued by the handsome leader Bigotes and his stories of the great beasts on the plains, Coronado sent Hernando de Alvarado and 20 companions eastward to explore and report on the area. Alvarado reached the edge of the Great Plains after passing several significant land marks, including the malpais, Acoma, Tiguex (the Indian province centered around present day Albuquerque), and Pecos pueblo. Reporting that the valley of Tiguex was well populated and contained many pueblos, Alvarado sent messengers back to Coronado advising him to come and winter there.

Meanwhile, during the fall of 1540, Tristan de Luna y Arellano brought the main force up from Corazones and rendezvoused with Coronado at Tiguex. About a month later, Melchior Díaz, in command of a small contingent of men at Corazones, received instructions from Vázquez de Coronado to rendezvous with Alarcón's ships in order to bring up the much needed supplies and armaments. With twenty-five men, Díaz proceeded to the Gulf of California, thence northward, but was unable to rendezvous with Alarcón. The Indians along the Colorado River had heard of the battle at Hawikku even before the Spaniards arrived on the California coast. They told Díaz of strange men and their boats who had buried a message under a tree. Díaz discovered a tree carved with these words: "There are letters at the foot of this tree" (Castañeda 1990:112). Digging up the buried message, Díaz learned that Alarcón had departed after waiting in vain for a period of time because his ships were rotting. Díaz's men crossed the Colorado River on rafts, and retraced their trail back to Corazones, the "Valley of Hearts." Díaz died on January 18, 1541, however, before reaching Corazones.

In the late fall or early winter of 1540, Coronado and a small detachment of his army moved toward the lower Rio Grande valley of

New Mexico by way of the province of Tutahaco, south of Tiguex. The rest of the army, led by Arellano, moved eastward near the towering rock of Acoma to the Rio Grande valley. By late 1540, the army had established a winter camp at a location believed to be near present-day Bernalillo.

The situation at Tiguex, while at first friendly, soon turned antagonistic. It is no wonder there were problems because the winter was much colder and snowier than the Spaniards had anticipated. Seeking warm shelter, they took over and occupied several of the pueblos, and requisitioned food and clothing from the inhabitants without consideration for Indian needs. Eventually a full scale war broke out between the natives and the explorers, resulting in the destruction of most of the Tiguex pueblos by burning. Some of the Indians fled to the mountains, while others were killed defending their pueblos. None of the 12 villages of Tiguex were repopulated during the time Coronado's army occupied the valley.

Relationships between the explorers and Cicuye (Pecos pueblo) also soured because the Spaniards held Bigotes captive, thinking he had knowledge of gold. Later, royal officials investigating the causes of the war held Coronado and other officers responsible for their actions against friendly natives. Indeed, Garcia López de Cárdenas received a fine and prison sentence for seven years for his abuse of military power against the natives during the Tiguex War.

As the winter of 1541 gave way to spring, Coronado prepared to depart for Quivira. He proceeded to Pecos, where he made an uneasy peace and freed Bigotes before departing for the Great Plains. The Pecos offered a guide whom the Spaniards named El Turco (the Turk). It is not clear whether El Turco, a Plains Indian, had been instructed to lead the Spaniards as far as possible and lose them in the Great Plains, or if he was guiding them to the large settlements along the Mississippi River. Moving towards the

Buffalo Plains, the army had to stop and build a bridge over a fast flowing river. After encountering two groups of Indians--the Querechos and the Teyas--hunting bison on the plains, Coronado and his army continued on to an area with deep barrancas. Coronado decided there that he and 30 horsemen and a few foot soldiers would proceed to Quivira; the rest returned to the Rio Grande valley. Once out of the canyons, Coronado and his "chosen" followers headed northward. In this segment of the route, the expedition crossed into Oklahoma and finally arrived at what is now believed to be the Great Bend of the Arkansas River. The Spaniards executed the Turk there for lying about the route and the existence of Quivira.

Coronado proceeded some distance beyond the Great Bend, possibly reaching central Kansas, before he turned back to the Rio Grande via a shorter, more direct route. After returning to Tiguex, Coronado suffered a head injury when he fell while racing his horse with Captain Rodrigo de Maldonado. Apparently his saddle girth broke, and he suffered a concussion when he was trampled by Maldonado's horse. Coronado would later report to his superiors that he had turned back because of his injuries, although his men believed that he had simulated his injuries in order to force the return of the entire expedition. The group retraced its trail back to Mexico City and reported to Viceroy Mendoza. Several of the Mexican Indians chose to remain behind at Hawikku when Coronado left; they were still at the Zuni villages by the time the next Spanish expedition reached the area.

In the end, the expedition raised more questions about the north country than it answered. However, the expedition's legacy is that it inspired further exploration, and eventually Spanish settlement, of the north. Coronado's epic journey led to the establishment of a new Spanish route directly from Mexico City which resulted in the development of the Camino Real de Tierra Adentro--the Royal Road of the Interior. The 1,200-mile Camino Real connected Mexico City in the south and later Santa Fe in the north. Fifty-six years after

Vázquez de Coronado's reconnaissance, Juan de Oñate led settlers into New Mexico. A little more than a decade later, in 1610, the Spanish established Santa Fe. Over two centuries later, Anglo-American traders from Missouri would retrace some of the Spanish routes to the Great Plains, and establish a commercial route known as the Santa Fe Trail (later the Santa Fe-Chihuahua Trail.)

CHAPTER 3: HISTORICAL AND ARCHEOLOGICAL RESEARCH METHODOLOGY

HISTORICAL RESEARCH

Historical research for the Coronado National Trail Study was undertaken by the National Park Service's Spanish Colonial Research Center at the University of New Mexico in Albuquerque. First, all pertinent literature related to the Francisco Vázquez de Coronado expedition of 1540-1542 was searched for both modern and historic place names, and an index of names was compiled. Next, this index was expanded into a historical dictionary of place names associated with the expedition that could be used in conjunction with modern maps to help identify the expedition's possible route or corridor.

The historical place names dictionary is organized by broad geographical topics. These topics include: mountains, ridges, hills, canyons, valleys, plains, and passes; rivers, creeks, dams, and bodies of water; pueblos and other related places; and other geographical references and peculiarities such as Spanish settlements and modern day place names. Each dictionary entry contains latitudinal and longitudinal readings, citations for the source of the place name, and a brief description or explanation. Because of their length, the analytic index and the historical dictionary of place names are not included in this report. Copies of the two documents are on file at the NPS Spanish Colonial Research Center.

Finally, archival research was conducted in ten Spanish colonial archives and library collections in Spain, Mexico, and the United States to identify primary source materials related to the expedition. These archives and libraries include:

- Archivo General de Indias (AGI), Sevilla, Spain
- Archivo General de Simancas (AGS), Simancas, Spain
- Archivo Historico National (AHN), Madrid, Spain
- Real Academia de Historia (RAH), Madrid, Spain
- The Biblioteca Nacional (BN), Madrid, Spain
- The Panhandle-Plains Historical Society, Canyon, Texas
- The Huntington Library, San Marino, California

- Bancroft Library, Berkeley, California
- University of New Mexico Library, Coronado Room, Albuquerque,
New Mexico
- University of Texas Latin American Collection, Austin, Texas

The Coronado period documents were collected and analyzed with regard to the expeditions' personnel, route and material culture. These documents are included in the bibliography, Chapter 6.

ARCHEOLOGICAL RESEARCH

The Coronado National Trail Act provided for examination of all information on archeological sites along "the trail." To identify relevant archeological sites which were in the right place at the right time was a formidable task because the exact route of the Coronado expedition is unknown. Research focused on: a) those sites showing Spanish presence during the sixteenth century; b) American Indian sites that may have been occupied during Coronado's entrada; and c) abandoned sites such as Chichilticalli that were mentioned in the Spanish accounts. Research was limited to those routes Coronado himself would have traversed in the continental United States, excluding Mexico. Areas explored by other members of Coronado's party were not analyzed.

Two basic assumptions were made at the beginning of the study. It was presumed that Coronado's expedition was led by Indian guides, probably following pre-existing trails. While indigenous plants, animals and peoples of the Southwest probably have changed since Coronado's time, it was assumed that the general topography has not changed significantly.

DEFINITION OF THE STUDY AREA

To help define the geographical parameters for archeological research, the major historical and archeological studies of the route were collected. Numerous authors have retraced Coronado's journey, citing various permutations of topography, geography,

botany, ethnography, archeology, place names, and prehistoric Indian trails as clues to the route. All of these studies were analyzed to determine how valid the routes seemed to be, and how well the author's arguments appeared to "fit" the narratives.

Unfortunately, there is a singular lack of agreement among scholars as to the route taken by Coronado. Many of these studies examined only a portion of the route. Some early writers were "armchair travelers" who lacked knowledge of area geography. Other writers apparently did not read carefully or have access to the original Spanish documents. Translation errors compounded the problem. Area boosterism also played a role in the choice of some routes, as did the expertise or professional interest of the writer.

The majority of the scholars agree that Coronado's expedition entered the states of Arizona, New Mexico, Texas, Oklahoma, and Kansas. A few writers would limit the entrada to Arizona, New Mexico, and Arizona, while others added Nebraska, Missouri, Colorado, South Dakota, and Iowa to the five states outlined in the legislation. The location of routes leading north from the Mexico border to Cibola ranged anywhere from Arizona's Santa Cruz River on the west to the Animas valley of New Mexico on the east -- an area some 140 miles across. There was a 200 mile north-south variation in the suggested routes through Texas.

To enable researchers to define a broad corridor through which the expedition may have passed, routes identified in the secondary accounts that seemed to be most historically feasible were transcribed onto a series of overlays for 1:1,000,000 USGS state topographic maps.

To identify specific route details, the primary documentation (including various published translations of the entrada letters, journals, and accounts) and information collated by the Spanish Colonial Research Center was examined. A matrix was developed to

aid in evaluating the many potential routes. This matrix identified for each Spanish narrator the time of travel, place, distance, direction, and composition of the group the author was accompanying (e.g., the main army or a small advance guard).

Ethnohistoric accounts were also collected and analyzed to see if connections could be made between the expedition and American Indian oral history, or between cultural attributes and descriptions of native peoples given in the original Spanish narratives.⁴ This evidence, however, was scanty. Many American Indian groups encountered by Coronado's expedition subsequently emigrated from one locale to another, or were decimated by disease and warfare. Villages were abandoned and new ones built, place names were changed or forgotten, and the numerous Spanish tribal designations are no longer applicable. Each succeeding Spanish entrada renamed geographical features and native groups and villages, creating a plethora of names for one group or area.

DEFINITION OF CORONADO SITE TYPES

After developing a broad study corridor, the NPS researcher next defined the profile or characteristics of "typical" Coronado entrada sites, and listed and described artifacts that might be diagnostic of the entrada. Information needed to be collected on what a Spanish site of this time would look like, who the explorers were, and what they would have brought along or lost along the way.

Studies of Spanish material culture and other sites of the period located elsewhere were examined to identify salient clues to the

⁴Unfortunately, time and financial constraints limited research to published accounts, and precluded the collection of oral histories from American Indian tribes like the Zuni and the Acoma. Many Indian groups have rich oral traditions that preserve much of their past history, and which can provide a much-needed alternative perspective on the Spanish entrada.

route. Reports on the De Soto sites and those excavated at St. Elena⁵, as well as sixteenth century Spanish shipwreck sites off the coast of Texas, were particularly useful. Experts in fifteenth and sixteenth century archeological sites were also consulted.

There are, however, some basic differences between the Coronado expedition and other entradas of the time. Coronado never made connections with his supply ships--his expedition was a long journey overland, often through desolate terrain. After an initial shakedown in Mexico, Coronado's army traveled light, apparently planning to live off the land (with the exception of domestic livestock brought along for food).⁶ The sorts of artifacts associated with architecture and special activities found at these other 16th century sites would not be expected in a Coronado site.

Several other factors make it difficult to identify Coronado sites. A large contingent of Indians from what is now Mexico and Indian guides from the various pueblo and plains groups accompanied the expedition, and brought their own equipment and supplies. Camping areas for each of these groups would reflect their own distinctive culture.

Food (stored in native pottery vessels) clothing, and other subsistence goods were also procured along the route from various Mexican and American Indian groups. Thus, the physical remains from the Coronado expedition could include native pottery, weaponry, and personal items, as well as game animals, fire hearths, and other items--a feature and artifact assemblage

⁵ St Elena was part of the colonial capital of Spanish Florida located on Parris Island, South Carolina, from 1566 to 1587.

⁶For example, with the exception of the food and arms which they carried on their backs, the advance group took only a few necessary items weighing less than a pound (Coronado 1940b:163).

identical to thousands of prehistoric sites across the Southwest. Subtle differences in artifact distribution and campsite arrangement between Spaniards and Indians are not easy to detect.

The narratives describe Coronado's group as an army. To twentieth century Americans, the term "army" implies a hierarchical organization whose equipment, personal gear, and camping patterns would be fairly proscribed and uniform. This was probably not characteristic of the Coronado expedition. This heterogeneous group was probably not as tightly regimented as a military expedition, and thus did not create the orderly, stereotypic patterning of archeological features left behind by an organized army. The group included soldiers, priests, women, and dilettantes, each with their own baggage. These individuals and various small groups were privately funded, came from varying backgrounds, and used different weaponry and equipment. Because the frontier of New Spain was a long way from the European continent and from Spanish supply bases, equipment was often antique or makeshift.

Location of sixteenth century Spanish artifacts at a site also does not necessarily mean that Coronado was in the area. American Indian groups often obtained obsolete Spanish equipment and weaponry, which they may then have transported hundreds of miles, especially on the plains. Because of its rarity, the weaponry or equipment, probably obsolete in European terms, may have been treated as an heirloom to be passed down in a family. Perhaps a century or more later, these treasured metal objects would become part of the grave goods interred with the owner in areas far removed from the place of acquisition, or reworked into practicable weapons and tools like metal arrow points.

Other sixteenth and early seventeenth century Spanish explorations and colonization efforts left behind many of the same types of artifacts, still further obscuring the archeological remains. In

addition, the majority of the past archeological work in the Southwest has not focused on the Coronado period, but rather on the prehistoric or Spanish Colonial period sites.

Campsites

Sites associated with the Expedition would probably cover a fairly large area (because of the size of the group), but artifacts and traces of the camp would be very scattered and shallow (excepting the winter encampment). In the Southwest, where soil formation is extremely slow, it is difficult to differentiate between several repeated visits to an area by small groups and a single, short visit by a larger group.

At a large camp site, there might be clustering of different camping patterns and artifacts throughout the area because each of the different ethnic and class groups would probably tend to camp together. This was apparently true of the winter encampment: it is thought that Coronado and his men occupied one of the pueblos, while the herders, Indian guides, and the rank and file of the army camped nearby. Campsites left by scouting parties would probably be small and ephemeral in nature, except where cairns or other markers were left to mark the way for the more slowly moving army.

Other sorts of features were also left behind by the explorers. Wooden crosses set into piles of stone were placed at strategic areas along the route to claim the land for Spain and as part of the expedition's missionary efforts (Niza 1940:79). Wooden stakes were driven into the ground to tether the horses (Mendoza 1940c:157).

Coronado's group followed their Indian guides along pre-existing trails for much of the route. Occasional traces of these prehistoric routes are still visible across Arizona and New Mexico

and include cairn markers, rock berms, handholds cut into the rock, and footpaths. De Niza remarked that he took a "wide and much used road" across the first part of the despoblado. Along this route he saw old shacks, probably temporary wooden shelters, and many signs of old fires (Niza 1940:75).

Area geography is also important to consider. Camp areas were probably on fairly level ground, within easy reach of water and forage for the large livestock herds, and horses. Some prehistoric routes, particularly in the Mogollon Rim area and the malpais, were essentially single track foot paths, and would not be suitable for mounted horsemen and large herds of cattle and sheep.

Considering all these factors, some possible indicators of the Coronado expedition would be campfire traces, crude rock walls or other corral measures for livestock, cairns and crosses, bridges, and graffiti, situated in areas where wood or buffalo chips, water, and forage were available.

Artifacts

The Spanish narratives specifically mention many of the items taken by the expedition. Castañeda (1940:238) noted that pottery and gourds used for cooking and food storage were broken by a hailstorm on the plains. Livestock included goats, mules, sheep, horses, and cows. Estevan took dogs with him to Cibola, along with a variety of trade items and "green plates" (Alarcón 1940:141). Other items taken for trade with the Indians included pearl beads, glassware, pater nosters, jingle bells, and cloaks and other items of clothing (Castañeda 1940:217). Additional supplies and equipment were doubtless taken by the expedition's tailor, the doctor, and the priests. A bugle was certainly taken along by the army bugler (Hammond and Rey 1940a:13). Because some women accompanied the army, feminine clothing and personal items might be among the archeological remains. In addition to the livestock, food items

brought from Mexico included raisins, sugar, oil, and wine (Coronado 1940c:176). Although some of these products may have been packaged in wooden containers, the oil and the wine were probably in glass or metal containers.

The expedition's muster roll suggests a wide variety of weaponry was taken along on the journey. Much of the equipment was armor of Castile and "arms de la tierra." Aiton (1939:11) translates this phrase as "arms of the country" while Hammond and Rey (1940a:88) read this as native arms or native weapons. The ethnocentric Spaniards may have been making a distinction between high quality arms produced by Old World craftsmen versus weapons made in Mexico or other parts of the New World that were poorer in quality. Alternatively, "arms de la tierra" may have been used to describe American Indian weaponry like the bow and arrow that some Spaniards had by this time adopted for their own use.

Many different types of armor were listed in the muster list including: horse armor; coat of mail; appurtines; armor for the head; breeches; zaraguelles; plate armor; mail loin guards; gorget armor for throat; head armor of the country; gauntlet; corselet (armor for upper body); helmet or casco; casque with chin piece; army helmet to cover the head; and sallet with beaver (a form of helmet). The muster list also includes weapons such as crossbows, harquebuses, one and two-handed swords, daggers, lances, and other odd pieces. Coronado's armor was gilded and had a "fine helmet ornamented with plumes" (Hammond and Rey 1940a:8).

The expedition also had six or seven bronze pedreros, or stone mortars. By the time the Spanish reached Tiguex, the mortars were in poor condition, and four of them were left at Zia Pueblo for safekeeping (Hammond and Rey 1940a:8; Castañeda 1940:233).

These assorted weapons and armor were similar to those described in early Spanish manuals that talk about how to outfit an expedition.

The manuals discuss such things as health and medicines, recruitment of priests, and types of weapons and armor to bring along. For example, the *Milicia y Descripcion de las Indias* (Vargas Machuca 1892) states that:

In the Indies, Spaniards principally used cross-bows, chain mail, plate armor (breast plates), small muskets, rodela (oval or heart-shaped leather shields)...after much experience the best and most advantageous were muskets quilted cotton vests, broad swords, cotton helmets [sic] (headgear) and visors, rodela, lances, partial horse armor, leather jackets, and mail coats.⁷

Crossbows were used at one of the Zuni towns, at Pecos, and at pueblo(s) along the Rio Grande. Probably some of the crossbow bolts were made of a ferrous material, but others may have been made of copper in the New World. By the time of the next Spanish entrada, the harquebus had begun to replace the crossbow. However, use of the crossbow may have persisted well into the seventeenth century in this frontier region (Williams 1991:2).

Unfortunately, crossbow bolts were not always correctly identified by early-day archaeologists, and past archeological excavations often lacked good stratigraphic controls or in-depth reports that would allow researchers to isolate the Coronado expedition remains from later entradas.

Another potentially diagnostic artifact that can be tightly dated to the Coronado time period is trade beads, especially the Nueva Cadiz Variety.⁸ Although no Nueva Cadiz beads have been

⁷Translation contained in a letter from Byron A. Johnson, Albuquerque Museum, to Diane Rhodes, NPS. Typescript in NPS files.

⁸Nueva Cadiz beads are "cane beads of square cross-section, with or without a twist; most commonly they are in various shades of blue....Dating for any variety of Nueva Cadiz ranges from mid-16th to mid-17th century....these [blue] square cross-section cane beads have only been found in the New World, in Spanish contact sites..." in Peru and the Caribbean. These beads were evidently introduced to the New World as trade items shortly after Pizarro conquered Peru in 1532-15-33. (Liu and Harris 1982:1-6).

identified for sites like Pecos and Zuni, other trade beads from this general time period have been found at Zuni.

In summary, artifacts that might suggest the presence of the expedition include: horse gear like horseshoe nails and bridle and stirrup pieces; metal tools for fitting horseshoes, and repairing of leather goods and clothing; non-perishable clothing parts like rolled copper aglets and Damascine buttons; personal and religious items like ceramic mess kits, jet Rosary beads, and simple lead and brass crosses; domestic animal bone (horse, sheep, cattle)⁹, and other food refuse; pottery, gourds, and other storage and cooking vessels; trade goods like beads, small bells, glass dishes, metal knives, and pearls; and weapons, particularly crossbow bolts and lead shot.

IDENTIFICATION OF CULTURE AREAS AND CHRONOLOGIES

After site indicators were established for the Coronado expedition, the next step was to identify cultural areas and chronologies for the period 1450 to 1650, and determine prehistoric diagnostic traits, features, and artifacts for each segment of the study route. This broad time range was selected because of the specific lack of dating information on most archeological sites. Researchers familiar with these selected areas were contacted to elicit further information.

Defining the relevant prehistoric culture areas and time periods was one of the most difficult parts of the project. For example, dating of prehistoric American Indian sites in southeastern Arizona is based upon ceramics. But there are over 2,000 different types of pottery identified just for this area. A short distance north

⁹Coronado (1940a:43) took pigs along on his 1539 expedition to Topira, but there is no mention of these animals in the narratives of the 1540 expedition.

into the Mogollon and Anasazi areas, the site types and diagnostic artifacts of the period change, as do site types and diagnostics for groups across the central and southern plains. Fortunately, staff at state and university repositories helped point out regional overviews that defined cultural chronologies.

In general, ceramics proved to be the primary dating indicator in the Southwest--the late polychromes and Opata, Piman, and Yaqui wares in Arizona, and the Glaze E wares along the Rio Grande. Special attention was paid to artifacts found a long way from their place of origin, such as burnished wares (possibly from Mexico) in Texas, Mexican obsidian in New Mexico, and Hopi yellow ware in southern Arizona sites. Tepee rings and large sites with late puebloan ceramics and late arrowpoints were often clues to sixteenth century sites in the central plains. The Tierra Blanca and Garza complex sites were a good indicator of this time period. The Great Bend Aspect sites in Kansas had their own special characteristic array of sites and artifacts. Carbon 14 dating was also helpful in defining sites that were occupied around the time of the entrada.

ANALYSIS OF ARCHEOLOGICAL SITE FILES

After having identified key geographic and diagnostic parameters, the researcher examined and analyzed area site files. Research in each of the five states (Arizona, New Mexico, Texas, Oklahoma, and Kansas) proceeded in a slightly different manner. Arizona does not maintain one overall numerical list or repository of site data for the state's archeological resources. As a result, the NPS worked with U. S. Forest Service, Bureau of Land Management and Bureau of Indian Affairs to elicit information on sites in their areas. Archeological site files at the Arizona State Museum at the University of Arizona in Tucson, Arizona State University in Tempe, the University of Northern Arizona and the Museum of Northern

Arizona in Flagstaff, and at the Amerind Foundation in Dragoon, Arizona, were investigated.

In New Mexico, sites in the right time range and approximate locations were identified using the computerized system at the Laboratory of Anthropology in Santa Fe. Pueblos that were thought to have been inhabited during Coronado's time were identified and the site files examined.

Information for sites in Texas, Oklahoma, and Kansas was obtained from the state repositories. In Texas, site information was collected from the Texas Archeological Research Laboratories, in Austin, and West Texas State University, in Canyon. The Oklahoma Archeological Survey, part of the University of Oklahoma at Norman, and the Kansas Historical Society in Topeka, provided information on their states respective archeological sites.

Libraries at the various institutions were searched for any additional information. Numerous archaeologists throughout the region were contacted to elicit additional information on potential sites and artifacts, and thus further refine the list of potential sites.

Individual site files and forms were examined for all of the states, and area summaries or special surveys (e.g., reservoirs, river basin, highway) were checked whenever possible. Sites that were potentially in the right place and at the right time, and/or had the right artifacts were plotted on USGS 1:100,000 topographic maps. Sites of special interest were color coded to show the presence of Puebloan, Spanish, Mexican, or late polychrome pottery, trade goods, metal, and identified proto-historic sites.

CORRELATION OF ARCHEOLOGICAL FINDINGS AND ROUTE INFORMATION

After analyzing the primary sources for time, distance, and direction of travel, and identified landmarks, the NPS compared the findings with the site archeological data to determine if any general correlations existed. Areas where the patterning of existing settlements, encampments, and ruins, with the landmarks time, distance mentioned in the narrative were noted. Conclusions drawn from this part of the research and recommendations for further study are in chapter 5.

CHAPTER 4: ROUTE ANALYSIS

INTRODUCTION

Chapter 4 compares the various secondary accounts of the entrada and discusses a few of their relative merits. The chapter also analyzes information on the route included in letters, journals, and trial records from the 1500s. Maps of the five states showing the broad zone of uncertainty (i.e. an area within which the various proposed expedition routes are contained) are at the back of this study.

Most of the several hundred books, articles, and manuscripts written about the Coronado expedition were collected and studied for this report, but only the major secondary accounts of the journey are included in this chapter and on figures 1 to 4. Time and space limitations prevent exhaustive critiques of the various documents and secondary accounts, but a few general remarks have been included to aid the reader in evaluating each of the route proposals. Commentary is also included on the various aspects of time, distance, and landmarks in the Spanish accounts.

The many secondary accounts of the entrada share only limited areas of agreement, chiefly because the Spanish documents are vague and contradictory, and lack crucial details. Few physical traces of this epic journey have been identified by archaeologists or through ethnohistoric accounts. Thus, Park Service researchers sought other factors that might help identify the route and reduce areas of uncertainty.

Secondary accounts of the entrada discuss a variety of factors mentioned in the narratives, including landmarks and topography, historic place names, descriptions of indigenous Indian tribes, settlements and trails, and animals and vegetation. However, other



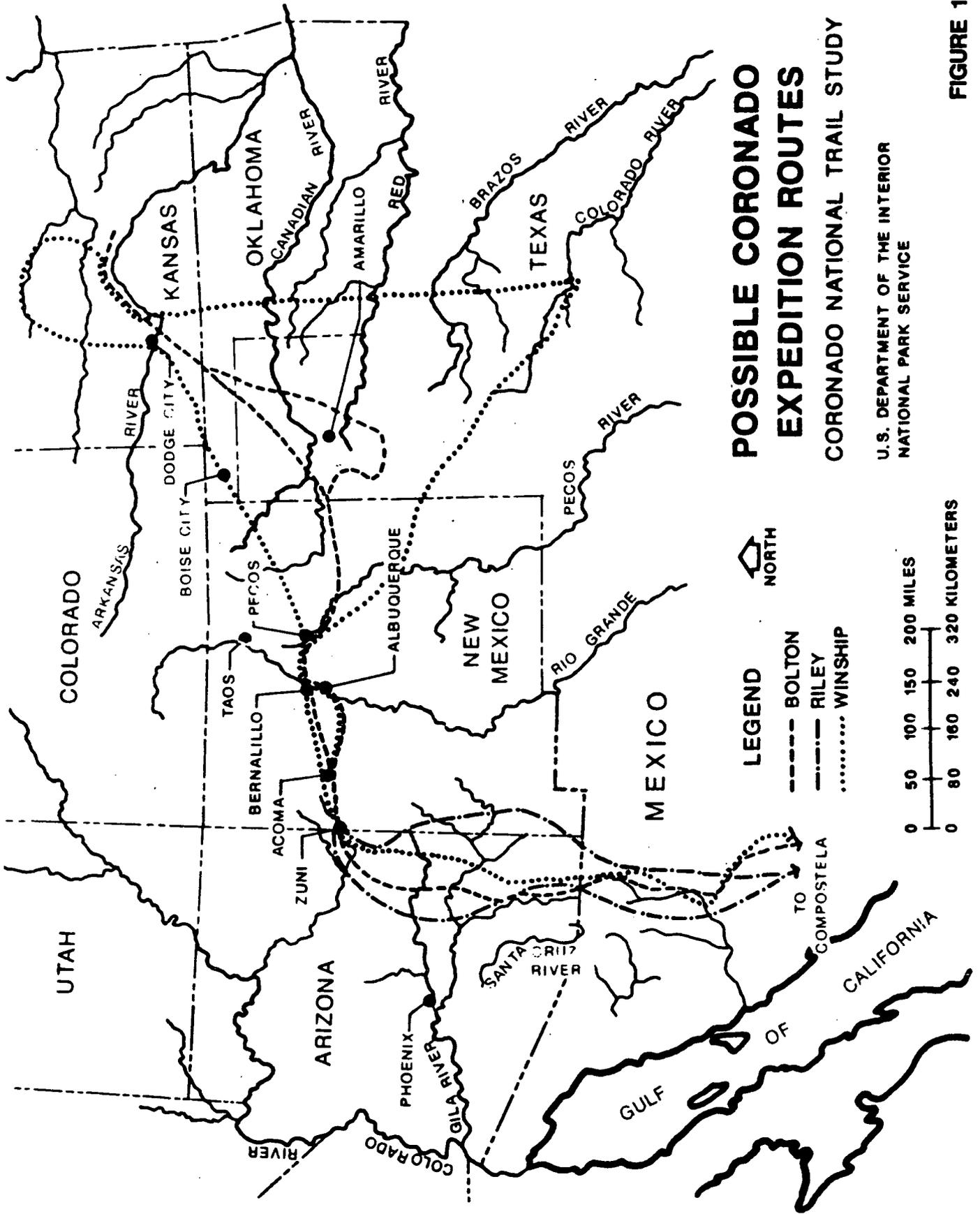
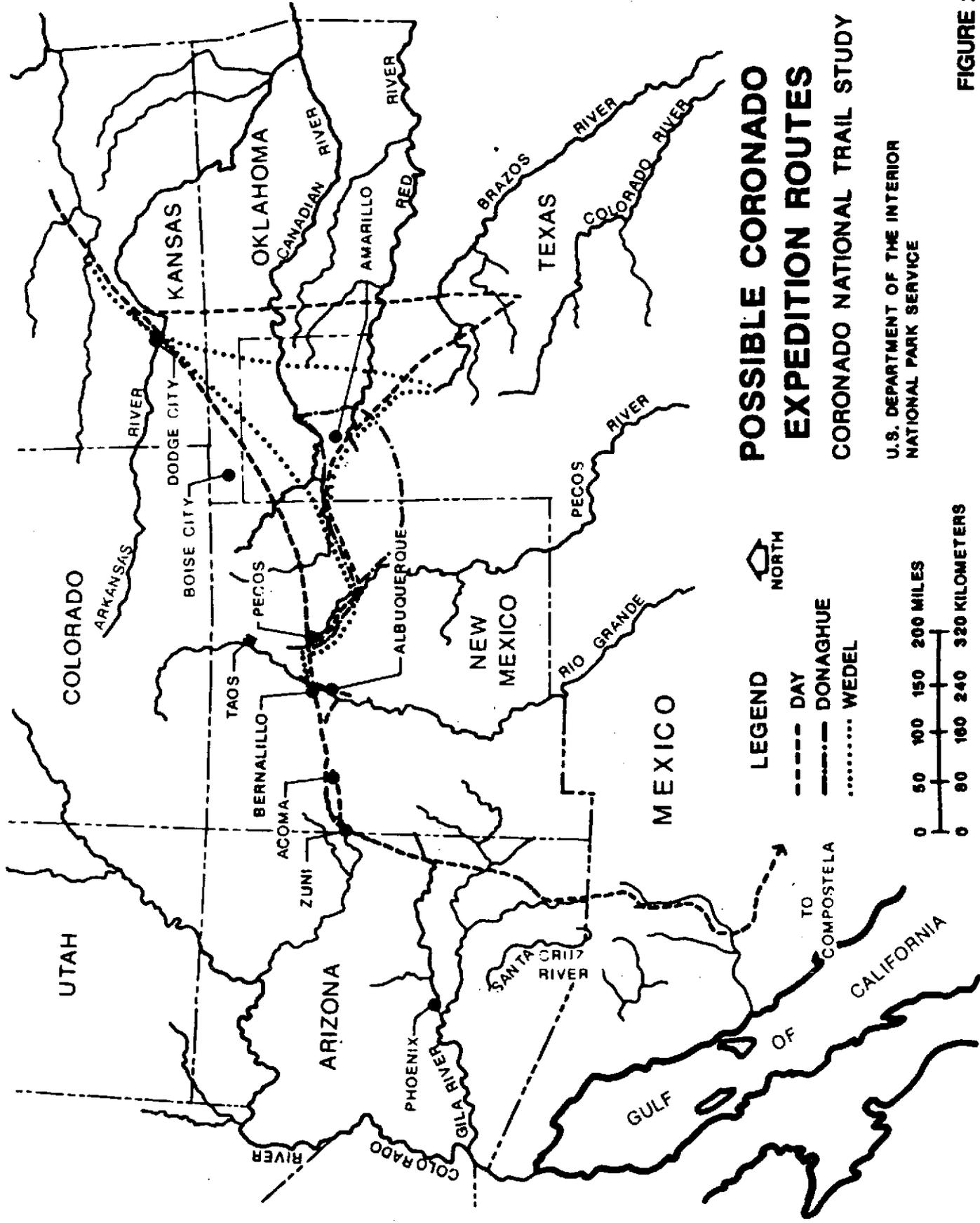


FIGURE 1



**POSSIBLE CORONADO
EXPEDITION ROUTES**
CORONADO NATIONAL TRAIL STUDY

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

LEGEND

- DAY
- · - · DONAGHUE
- WEDEL



NORTH

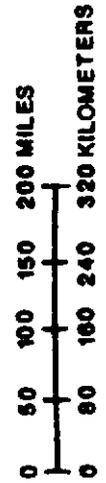
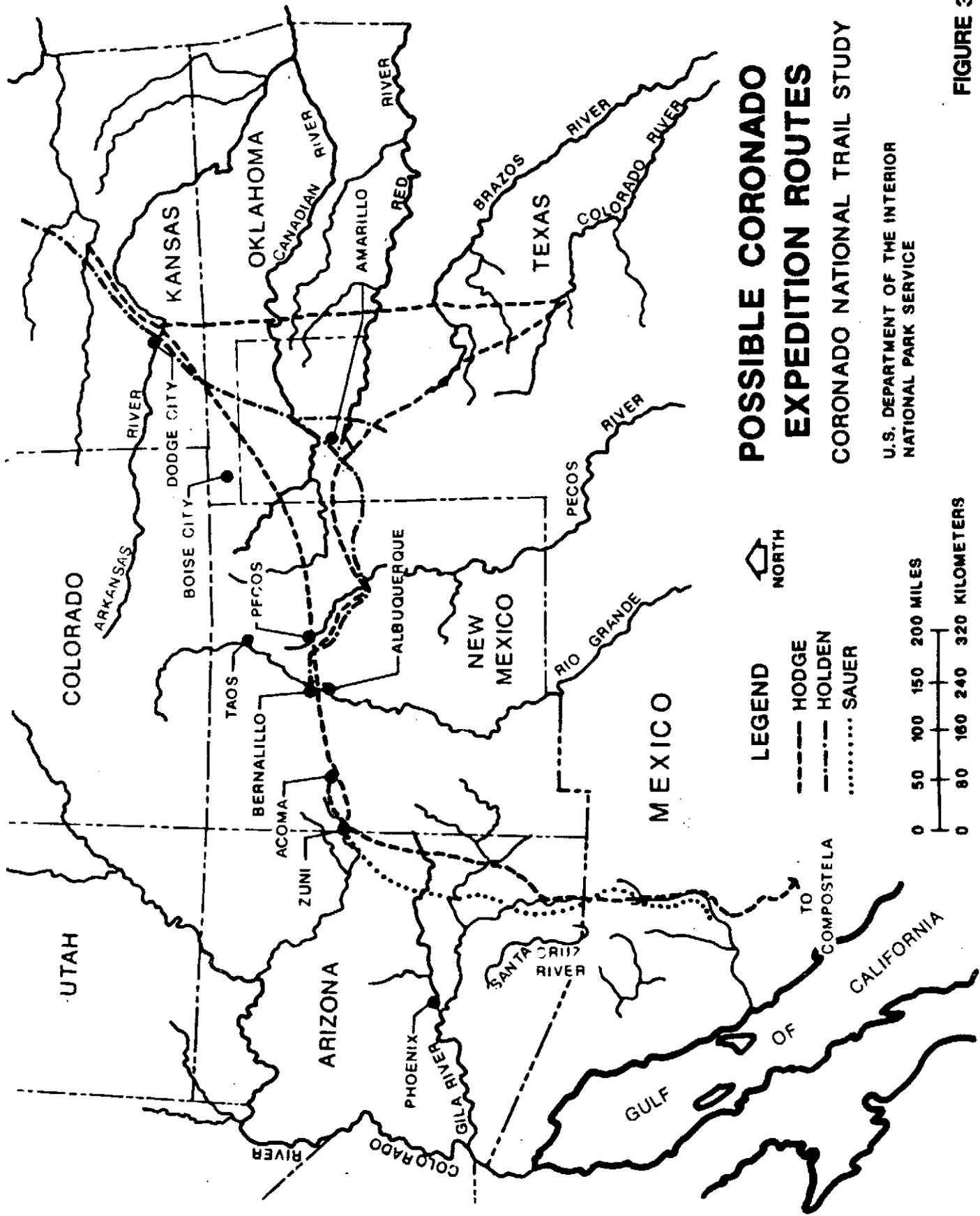


FIGURE 2





**POSSIBLE CORONADO
EXPEDITION ROUTES**

CORONADO NATIONAL TRAIL STUDY

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE



LEGEND

- HODGE
- · - · HOLDEN
- SAUER

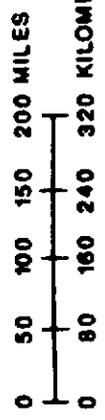


FIGURE 3

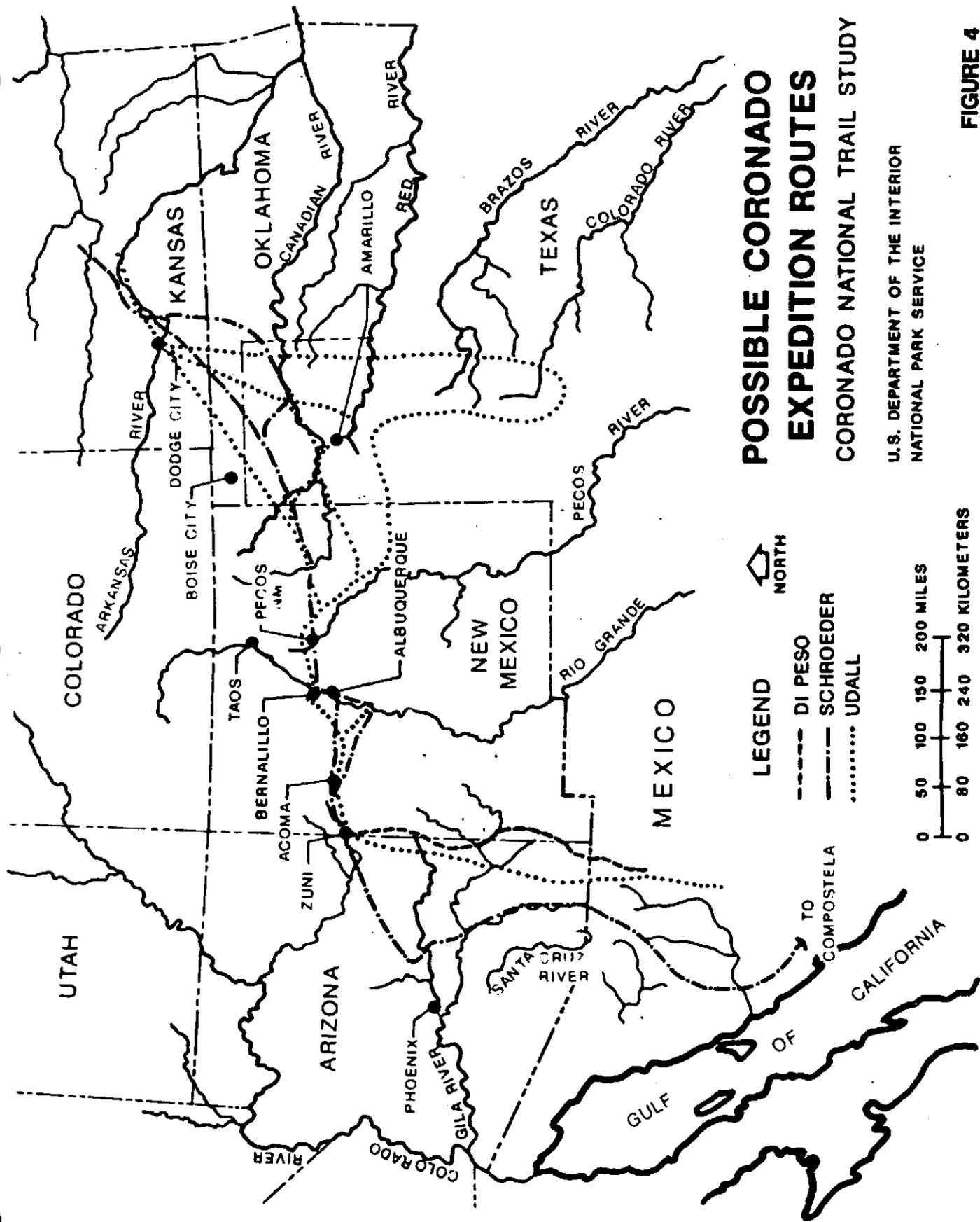


FIGURE 4

important considerations in the Spanish narratives, such as time, distance, and the direction of travel, have not been fully analyzed by most twentieth century scholars.

SPEED, DISTANCE, AND TIME OF TRAVEL

The following discussion analyzes the ways that the speed, distance, and time of travel documented in the Coronado chronicles can impact route estimates. To aid in the evaluation of these crucial factors, the Spanish narratives were culled for information on the dates, time, distance, type of travel, makeup of the group of travelers, and identifiable points of departure and arrival as recorded by each author.

A word of caution is in order at this point. The following discussion is based on an average league equalling 2.65 miles--a twentieth century compromise that may or may not bear much relationship to the measurements used by the Spanish. The measure of a league varied through time and in different countries. Generally, the length of a league was coupled with some unit of latitude, and may have ranged anywhere from 1.4 to 4.2 statute miles (1.52 to 4.58 Roman miles).¹⁰

Distances traveled by Coronado's army were determined by assigning a man to count paces during the day (Castañeda 1896:508). These paces were then converted into a measure of distance. Owing perhaps to misunderstandings or ignorance of 16th century measurements, differences among those recording the distances, and errors in translation, there are significant variations in distance and time among the various entrada narrators.

¹⁰The reader is referred to an excellent discussion of the various units of measure used by 16th and 17th century explorers written by Fred F. Kravath (1987). Kravath's table 2, showing an "array of leagues, leguas, leghes and lieues, from Roman times to 1852" is especially valuable (1987:304-305).

Most secondary authors averaged together all the distances and times mentioned in the narratives to derive an average daily rate of travel. This approach has inherent problems. First, distances calculated by counting footsteps across hilly or broken country are greater than across level ground. Different soldiers also have different stride lengths, resulting in unequal measurements.

When time travelled is factored in, there are additional problems in determining distances covered by the expedition. It should be kept in mind that each of the available narratives was written from the viewpoint of a man travelling with one detachment or another of Coronado's army. Which detachment the narrator was with during any section of his description is important, because the detachments travelled at different speeds and therefore covered different distances during a day's march.

The differences in travel distances were caused primarily by the mixture of elements in a detachment and by the terrain. The whole army consisted of perhaps two hundred and fifty to three hundred mounted men, perhaps one hundred foot-soldiers, and over 1,500 Indians (Winship 1896:378-379).¹¹ The main body of the army usually drove the livestock and travelled very slowly. Castañeda (1896:542) remarked that the army livestock on the plains east of Pecos consisted of 1,000 horses, 500 cattle, and 5,000 sheep.¹²

¹¹ Mota Padilla, cited in Winship (1896:479 fn. 205, English translation), echoed these numbers:

two hundred and sixty horsemen divided into eight companies with more than one thousand horses without packs, and others for pack animals with six small cannon, powder and shot, and more than one thousand friendly Indians and Indian servants for cowboys and shepherds.

¹² These numbers have been questioned by some authorities who suggest that Castañeda exaggerated or perhaps estimated the number of livestock leaving Culiacan, rather than the size of the herd taken onto the plains. However, at least some of the animals

In addition, there were a large number of pack mules carrying extra supplies and a few pieces of artillery (Winship 1896:379). Coronado remarked in one letter that the herd of sheep that accompanied his eighty-man detachment travelled at about 2 leagues a day (about 5 miles) on at least part of the rugged trip from Culiacán to Cíbola, and even so most of them died (Coronado 1896a:553). The army's rate of travel was clearly limited by the speed at which herds of sheep, cattle, and horses could be driven, particularly in mountainous terrain.

Some very general estimates of the speed at which the full army could travel may be derived from the travel time and distance for the army from Señora to Cíbola. The army left Señora in the middle of September (Winship 1990:90) and arrived at Cíbola sometime before the end of November. Coronado left instructions for Arellano to move the army to Tiguex in 20 days after its arrival. So, "as soon as...the men were well rested," perhaps 15 or 20 days, the army departed the pueblo called Granada. The army travelled one day to Matsaki before being stopped for ten days by heavy snow fall (Castañeda 1896:492-493).

After the snow ceased, the army set out again for Tiguex. Castañeda (1940:222) notes that "the season was well advanced, for it was the beginning of December." This suggests that the army arrived at Cíbola in the period somewhere between November 1 and November 15, and assumes 15 to 20 days of rest, ending between November 21 and December 5. Picking a median date of September 15 for the departure from the Señora Valley and a median arrival date of November 8 gives a travel time of 54 days to cover approximately 155 leagues (411 miles). As a comparison, the approximate distance from Hermosillo, Sonora, on the Sonora River,

survived the journey to Cona, because sheep, mules, and a horse were given to Father Padilla upon his departure for Quivira in the fall of 1541 (Jaramillo 1990:212).

to Zuni is about 430 miles.¹³ If these median dates are used, the full army could have averaged about 8 miles per day from Señora to Cíbola. Assuming maximum travel times, with a starting date of September 10, arriving in Cíbola November 15, and a rest period of 15 days, the army could have travelled from Sonora to Cíbola in 66 days -- an average of about 6 miles travelled per day. This is close to the rate indicated by Coronado (1896a:553), who stated that the sheep couldn't travel faster than 2 leagues a day, (little over an estimated 5 miles per day).

When greater speed was necessary, a detachment would be sent from the main army. Detachments usually numbered 20 to 30 horsemen, and sometimes included a few foot soldiers. Such a detachment probably averaged about 15 miles a day. For example, see Alvarado's scouting trip from Cíbola to Tiguex and Cicuye described by Castañeda (1896:490-491) and Alvarado (1896:594-595). Sometimes a detachment would go slower over long distances and through rough terrain. For example, the small detachment led by Coronado to Cíbola covered 300 leagues (about 795 miles) in about 80 days--an average of a almost 10 miles a day (Coronado 1940c:162; Traslado 1896:564; Relación 1896:572). Coronado's small advance detachment seems to have kept up a rate of 15 miles a day when it was travelling, with low daily averages resulting from stops along the way.

The maximum speed for sustained travel was that of a light, fast scouting group. This would consist of 10 to 12 horsemen, carrying few supplies and travelling up to 10 leagues a day (about 26 miles) (Castañeda 1896:505).

¹³This distance is based on the assumption that the present Senora River and the Sonora River of the Spanish narratives are the same.

Each of the Spanish narratives must be examined to determine whether the narrator was with the main body of the army or with a smaller or larger detachment during a given portion of the narrative. Jaramillo, for example, was with Coronado on the trip from Culiacán to Cíbola, with the main body of the army on part of the trip from Cíbola to Cona, and then with Coronado and 30 selected horsemen on the trip towards Quivira (Jaramillo 1896:589). Castañeda seems to have travelled with the main army during most of the expedition (Castañeda 1896:508-512). The distance travelled in each day's journey discussed in the narrative must be evaluated according to the type of detachment with which the narrator was travelling.

Another major difference among various scholars' analyses of the Spanish narratives is the use of the word jornada by Castañeda, the principal narrator. As used by Castañeda, a jornada was a standard day's journey. He indicated that it was about 6 or 7 leagues (about 15 to 18 miles), or about the distance a small detachment of mixed horse and foot soldiers travelled in a day. Most scholars have accepted this standard measurement, to the extent that they calculate all movements as having been at the rate of about 17 miles per day, even though such a distance would have been impossible for the full army to achieve during much of the journey.

Castañeda frequently used the word jornada as a measure of approximate distance. For example, he stated that from the first Teyas settlement to the next was four jornadas (Castañeda 1896:507). However, he did not necessarily mean that the army travelled from the first settlement to the second in four days, but only that the two were about 65 miles apart. Unfortunately, Winship translated jornada as "a day's travel" without distinguishing it from "a day of travelling." In one place Winship even created the impression that a jornada was the same distance as a league (Castañeda 1896:503), when in reality Castañeda made a

mistake in his text and corrected it: "veinte y cinco jornadas digo leguas (25 jornadas -- I mean to say, leagues)." As a result, a great deal of confusion has arisen over use of the term in the Spanish narratives.

Because of the blurring of the distinction between days of travel and jornadas, the inaccuracies inherent in any given narrative, and the differences between narratives, scholars have produced a wide range of possible routes followed by the expedition. Frequently the route and the places reached have been influenced by the biases of the individual conducting the analysis.

THE ROUTE FROM CULIACÁN TO CÍBOLA: DISCUSSION OF SECONDARY SOURCES

Coronado probably followed one of three major prehistoric trade routes northward into what is now the United States. These routes follow the large river systems that drain northward out of Mexico into Arizona--the Santa Cruz, San Pedro, and San Bernardino River valleys. In Mexico these rivers originate near either the Yaqui or Sonora River drainages, which are bounded by Mexico's north-south trending mountain cordilleras. These mountain ranges and the sea coast limit the number of possible north-south routes through Mexico. Obviously, the place where the entrada first entered present-day Arizona (or perhaps New Mexico) depends upon which route Coronado traveled through Mexico. See figures 1-4 for some of the routes suggested by various authors.

In one of the first attempts to retrace Coronado's route, Brig. General J. H. Simpson (1872:325-326, 329) suggested that the Spaniards came up from Mexico along the Santa Cruz Valley, stopping at Chichilticalli (Casa Grande) on the Gila River before cutting northeast across the Pinal and Mogollon mountains to Zuni. It appears that Simpson identified Casa Grande as Chichilticalli because it was one of the earliest of the large Arizona pueblo sites to be explored, and because it was built of red earth.

Several authors suggest that Coronado followed the same route as Fray Marcos in his earlier trip to Zuni. Like Simpson, Charlie Steen (1939:7-10) proposed a westerly route for Coronado, suggesting that the entrada followed the Fray Marcos' earlier route.¹⁴ Steen's route led up the Santa Cruz River valley between present-day Tucson and Phoenix, and entered the mountains somewhere between Phoenix and Florence, probably near the Salt River.

The majority of authors assert that the San Pedro River valley was the easiest route northward and best fit the descriptions in the Spanish narratives. Adolph Bandelier (1892:476) suggested that Fray Marcos, and later Coronado, came into the San Pedro River valley from Sonora, then possibly turned right to reach the Aravaipa Valley and the site of present-day Fort Grant. Bandelier argued against the more westerly route, suggesting that the Santa Cruz River sunk into the ground and disappeared at least 50 miles from the Gila. In further support of his route, Bandelier (1892:469) pointed out that the San Pedro provided an uninterrupted line of water supply from the Sonora to the Gila. He suggested that Chichilticalli was near Fort Grant, arguing that Casa Grande did not fit the narratives (1892:407-409, 466).

According to Bandelier, Coronado's group would then have crossed what is now the Apache Reservation, where it encountered the rivers mentioned in the narratives--the Gila River (the Rio de las Balsas), the Prieto (the Rio de la Barranca), the White Mountain River (the Rio Prieto), and the "cool creeks" which were the streams around Show Low. Bandelier identified the Rio Bermejo [Vermejo] as the Little Colorado River (1892:398).

¹⁴Scholars disagree whether or not Coronado followed Fray Marcos' earlier route, and many dispute the veracity of Marcos' account.

Fredrick W. Hodge (1907: map facing p. 280) believed the Coronado route came up the Sonora and San Pedro River valleys, crossed the Pinaleno Mountains over Railroad Pass, and followed the San Simon Valley to the vicinity of Solomonsville and the Gila River, south of the White Mountain Apache Reservation. From here, Hodge's route headed straight northeast to the Zuni River. Hodge does not discuss in detail this latter stretch, perhaps one of the most difficult portions of the journey. Instead, his map shows a straight line across the Mogollon Rim, disregarding the rugged terrain in this area.

G. J. Undreiner (1947:447-476) analyzed Fray Marcos' route to Cibola.¹⁵ This suggested route led up the San Pedro Valley northward through present-day Feldman, Winkelman, and Christmas, around the Mescal Mountains, past El Capitan, between the Pinal and Hays mountains to Globe and Claypool and on to the Salt River in the vicinity of Tonto National Monument. The course continued up the Salt River Valley to the confluence of the White and Black rivers. From here, Undreiner suggested two routes: along the East Fork of the White River, across the White Mountains to the Little Colorado River; or along the north fork of the White River to the vicinity of present-day McNary, thence northeast past Concho to the Little Colorado.

Geographer Carl Sauer (1971:134-136) perhaps had more intimate knowledge of northern Mexico and southern Arizona than most of the rest of the authors. His well-reasoned analysis traced Coronado's route down the San Pedro River to a point somewhere just north of Benson, then around the Galiuro Mountains into the upper basin of Aravaipa Creek, through Eagle Pass (between the Pinaleno and Santa Teresa ranges), and on to the Gila River. Staying near the Gila, and then the San Carlos River, the group cut northeast across the

¹⁵ Undreiner's discussion assumes that the Coronado expedition followed Fray Marcos' earlier route.

Natanes Plateau and the Black River (Rio Balsas) to intersect the White River at present-day Fort Apache. Sauer believed that the Spaniards followed the river barranca to the vicinity of McNary, then struck out across the Colorado Plateau to the Little Colorado River and then the Zuni River, which in turn led them to Hawikku.

A. Grove Day (1964:102-112, fn. 19, 331) also favored the Señora Valley as the most probable route through northern Mexico, entering what is now Arizona via the San Pedro River valley. From here, Day offers two alternative routes across southern Arizona to reach the Gila River--either the one espoused by Winship (1940:xiv), or Sauer's route (1971:135). Day has few doubts about the route between the Gila River and Cibola. He states that the entrada crossed the White Mountains on the old Indian trail to the pueblos, entering the Colorado Plateau country near present-day St. Johns. From here it was a simple matter for the group to follow the Colorado Chiquito drainage to the Zuni River.

In his comprehensive 1949 work, Herbert Bolton lays out the expedition's entire route from Mexico to Quivira and back. The "camino real" used by Coronado through Mexico ran along the coastal plain between the ocean and the Sierra Madre in a generally northward direction to Culiacan and then along the Sonora River, eventually entering what is now Arizona via the San Pedro River valley (Bolton 1949:81-104). Bolton asserts that Coronado left the San Pedro at approximately Benson, Arizona, marched northeast through the Galiuro Range, across the Aravaipa Valley, and then ascended Eagle Pass between the Pinaleno and Santa Teresa mountains. This route went through the despoblado or uninhabited area along the Gila River, crossed the river at Bylas, and forded the Salt River near the mouth of Bonito Creek. Continuing northward, the old Indian trail crossed the White River near the site of Fort Apache, climbed up over the Mogollon Rim through pine forests and small streams and emerged northeastward onto the open rolling drainage of the Little Colorado River near its junction

with the Zuni River. From there it was a short trek to Hawikku, the westernmost Zuni village.

Stewart Udall (1987:78-99) accepts Bolton's proposed Coronado route with some modifications. He suggests the Spaniards followed the San Pedro River into Arizona to Palominas and then Benson, turning right into the foothills of the Winchester Mountains. From this point he defines two possible routes, following along existing Indian trails. Generally, these alternate routes went north-northeast near present-day Fort Apache, McNary and St. Johns. From here the trail descended into open rolling country, following spring-fed creeks on a direct line of sight to Cibola. The travelers may have followed along Big Hollow to the Little Colorado River and thence to the Zuni River. Udall has identified the "Bad Pass" of the Coronado narratives as an oxbow of the Zuni River near the Arizona/New Mexico Boundary.

The route suggested by Albert Schroeder (1955:265-296) runs somewhat further to the west, following the San Pedro River to its mouth, crossing the Gila River and then going down Pinal Creek to the Salt River, almost to the mouth of Tonto Creek. From here Schroeder's route led up Salome Creek and across the north end of the Sierra Anchas before heading generally northeast over the Mogollon Rim and across to Zuni.

In a detailed study of Spanish entradas, Charles Di Peso (Di Peso et al. 1974:89-92, 98-102) outlined Coronado's probable routes through Mexico into Arizona. His preferred route led through the Rio Bavispe and San Bernardino valleys. Di Peso reasoned that the Spanish rode past the Slaughter Ranch on the Arizona border, then went northeast along the San Bernardino River, crossed into New Mexico near Rodeo, and continued over Antelope Pass in the Peloncillo Mountains. The route then ran northward in the lower Animas Valley and reentered present-day Arizona near Duncan on the Gila River. Following the Gila to the Blue River, the proposed

route curved northeast along the Blue into New Mexico, then overland northward to the Zuni villages.

C. L. Strout (1974:2-31) examined the geography mentioned in the Spanish journals to establish his route. Strout's map (drawn by William Horry, U.S. Army Corps of Engineers) shows the expedition coming up the San Bernardino River Valley into Arizona, then heading due north to the Zuni River just inside the eastern Arizona border.

Carroll L. Riley (1987:20) indicates that Coronado's entrada into the present-day United States may have used one of two known prehistoric trails (1975:54). Riley's preferred route (along the San Pedro River) was essentially the same as Bolton's. Riley's alternative route is much like Di Peso's (see above).¹⁶

Several early writers suggested that the first Zuni pueblo to be visited by Coronado's group was either Halona or Kiakima. Frederick Hodge's theory that the pueblo was instead Hawikku has been accepted by most authors since that time. However, Madeleine Rodack (1985:163-182) argues that the first of the Zuni pueblos to be visited by Coronado may have been Kiakima rather than Hawikku, based on Zuni tradition and Spanish descriptions of the village and the surrounding topography.

J. Wesley Huff (1951:119-127) and Ed Ladd (personal communication, July, 1990) both suggest that Coronado's group encountered Indian resistance because the Spanish accidentally intruded upon the Zuni summer solstice pilgrimage near a centuries-old area of profound religious significance to the Zuni.

¹⁶ Riley (1987:20) suggests Estevan and Fray Marcos took a more westerly route to reach Cibola than did Coronado. According to Riley's map of proposed routes, Marcos' route paralleled the Mexican sea coast north to the Altar River before turning northeast to the Santa Cruz River valley.

Bandelier (1892:338) asserts that Coronado stormed the first Zuni village seen by the Spanish, called Hauicu (Hawikku). However he also suggests that Estevan was killed at Kiakima.

THE ROUTE FROM CULIACAN TO CIBOLA: ANALYSIS

Although the NPS did not research the suggested routes through Mexico, it was assumed that the route followed by the expedition from Culiacán to one of the major landmarks known as Corazones (or the Valley of Hearts) would almost certainly have followed existing prehistoric trails.

The location of Corazones is unknown. In a letter to Mendoza, Coronado described the country and noted that "the sea turns toward the west for ten or twelve leagues directly opposite Corazones" (1940c:165). While visiting a "valley well settled with people," Fray Niza also learned that the "coast turns west very abruptly" at a latitude of 35 degrees (1940:71). Other writers state that the Corazones Valley was equidistant from the valley of Culiacán and from Cíbola, and was 10 leagues from the Señora Valley (Relación del Suceso 1940:284).

Many authors believe that the rich and well populated Señora Valley mentioned in the Spanish narratives is the area known today as the Sonora River valley. From this valley it would have been relatively easy for the expedition to move northeast across a low pass to reach the headwaters of the Nexpa River, possibly the present day San Pedro River. According to Schroeder (1968:293), this area was occupied in late prehistoric and early historic times by Sobaipuri Pima Indians, whose villages bear a resemblance to those described by Coronado. Most scholars agree that the San Pedro River valley would have provided more forage, wood, and most importantly, water for the expedition than would the Santa Cruz or San Bernardino valleys.

The route northwest from the Señora Valley to the Santa Cruz is more difficult than the San Pedro route. Marching northwest from the Señora Valley to reach the Santa Cruz Valley would have required extra time to travel across rugged terrain. It is also possible that the entrada marched northeast from the Yaqui and Mactezuma River drainages into the San Bernardino Valley. However, this route appears less feasible, based on availability of wood, water, and forage. Also, the descriptions of the various rivers encountered shortly before reaching Cibola do not appear to fit this route.

However, the choice of trails may also have been influenced by factors other than topography and ease of travel. Because there were several prehistoric trails through northern Mexico that may have been used by different Indian groups, the choice of guides could have influenced the route taken by Coronado. It is not clear whether Coronado's Indian guides were from the same cultural group or area as those who guided Marcos. Estevan and Marcos were taken to Cibola along a wide and much used road (Niza 1940:75). Their Indian guides were familiar with the route to Cibola, having gone there every year to earn a living, and to trade for hides and turquoise (Niza 1940:68, 72). After the killing of Estevan, the Indians "said that they would no longer dare to go to Cibola as they used to" suggesting they would not serve as guides for future expeditions (Niza 1940:76).

Coronado's guides may have been selected from a different group, and/or may have used a somewhat different route. The tone of Coronado's letter to Mendoza in August of 1540 suggests there were uncertainties about the trail, and he complained to Mendoza that "everything was the opposite of what he [Fray Marcos] had told your Lordship" (Coronado 1940c:165). Shortly before reaching the rivers leading to Cibola, Coronado's detachment encountered impassable mountains and dangerous passes, terrain not mentioned by de Niza.

Some authors explain these discrepancies by discounting Marcos' story, insisting that he did not reach Cibola, or he may not have entered what is now Arizona. Instead, they suggest he retold the Indians' accounts of Cibola as his own.¹⁷ Unfortunately, there is no clear statement in the narratives to document whether Coronado and Marcos used different routes or guides from a different area during the latter part of the trip from Señora to Cibola.

Investigations of archeological sites in southern Arizona and northern Mexico have not produced any conclusive evidence concerning the 1540s entrada. There are extensive prehistoric and Spanish period Indian ruins in northern Sonora and in the southern Arizona river valleys. Numerous Spanish artifacts, most dating to post-Coronado times, have been found in these areas, but none can be tied specifically to the Coronado expedition. It is possible that some of the early missionaries, or the 1531-1533 raiding parties of the renegade conquistador Numo de Guzman may have entered southern Arizona, leaving behind artifacts and sites reminiscent of the Coronado expedition (Williams 1990:1).¹⁸

Of the several accounts of the journey to Cibola, Jaramillo provides perhaps the most information. Jaramillo states that after the advance detachment reached the Nexpa River, it moved northward for two days (perhaps 30 miles) down the river valley before turning to the right (to the northeast) to travel another two days to the foot of a range of mountains. According to the Winship translation, it was at this point that Jaramillo remarked that they "heard news of what is called Chichiltic Calli" (1990:206). Coronado and some other members of the expedition visited the site

¹⁷In a 1947 article George Undreiner discusses the anomalies in the Spanish narratives, and strongly suggests that Coronado followed Marcos' earlier route.

¹⁸There were "poorly documented" visits by missionaries like the Franciscan Juan de La Asuncion to the fringes of the Spanish territory during 1538 (Williams 1990:1).

and structure known as Chichilticalli; Coronado said he spent two days resting there (1896a:555). Castañeda (1896:482, 516) described the building in some detail in two different places indicating that he must have visited it. Jaramillo (1940:296-297) noted that both a pass near Culiacán and the mountain cordillera far to the north were called Chichilticalli, suggesting that the name may have been descriptive of the color or some other feature of these places. Castañeda says that "Chichilticale received its name because the friars found in this region a house formerly inhabited by people who broke away from Cíbola. It was built of brown or red earth" (1940:251). Schroeder (1990c:2) suggests Castañeda used the name because of the similarity to the Nahuatl word "calli" (meaning "house").

Numerous archeological investigations have sought Chichilticalli, and proposed locations range from south of the border with Mexico, to New Mexico, to the southern and central portions of Arizona. There are only a few clues to its location in the Spanish narratives. Chichilticalli appears to have been near the edge of a major physiographic province where changes in plant and animal life and the landscape (e.g., the country rises continually and the spiky vegetation ceases) were observed by the Spaniards. The travelers also encountered here an Indian tribe who lived in rancherías (i.e., isolated, small temporary settlements), not the river valley settlements seen earlier in the trip.¹⁹

From the area near Chichilticalli, all the narratives agree that an uninhabited wilderness (i.e., the despoblado) began. Coronado reached the despoblado the next day after leaving Chichilticalli, so it cannot have been far. To many, this suggests that the location of Chichilticalli is somewhere south of the Mogollon Rim

¹⁹Albert Schroeder (1990c:2) suggests that the Indians Coronado met near Chichilticalli were Yavapai Indians, whose settlements were sufficiently different from the Sobaipuri Pimas further south to merit comment from the Spaniards.

but north of the heavily settled southern Arizona river basins. Apparently it was also just south of the despoblado which, being uninhabited, would have few if any archeological sites dating to the mid-1500s. This is true of the Mogollon Rim country north of the Gila and Salt Rivers.

Chichilticalli appears to have served as a sort of meeting place or way station on a long-established Indian route. It was perhaps the last place to obtain food before crossing a desolate area. It probably was near wood, water, and open terrain, in an area near where there is a visually discernible change in topography and ecological zones.

Because it was so well known by so many different groups, one would expect Chichilticalli to have a wide variety of ceramic types and other indicators of trade or imported materials. Some scholars believe that ruins in the Aravaipa Valley, dating to perhaps A.D. 1400 at the time of abandonment, might have been Chichilticalli. Others point out the exposed red subsoils and the numerous ruins in the San Pedro Valley that contain late ceramics acquired from both southern and northern Arizona. Di Peso identified ruins in northern Mexico as possible candidates for Chichilticalli. Schroeder (1990c:2) suggests that the despoblado was somewhere between the Gila and Salt rivers, and therefore Chichilticalli should be south of these rivers, and the Indians there would be Yavapais.

Simpson's assertion (1872:325) that Casa Grande was Chichilticalli has not been accepted by many modern scholars. It is perhaps too far west, and the surrounding landscape does not fit the Spaniards' descriptions of the terrain and of the peoples living in the vicinity. Other authors suggest that the mountains mentioned by Jaramillo may have been the northwest/southeast trending Dragoon, Winchester, and/or Galiuro ranges, placing Chichilticalli further east than the Santa Cruz Valley. If Coronado followed Fray Marcos' route, and if Marcos' account is accurate, Undreiner's

proposed route may have some merit. Undreiner presents a number of explanations for puzzling anomalies in the Spanish narratives, and strongly supports Fray Marcos' version of the trip despite suggestions by other historians that Marcos' narrative was, at best, inaccurate.

The next part of the journey was through exceedingly rough country. Coronado was quite clear about the difficulties of this leg of the trip. He stated that between Chichilticalli and Cibola was an area of very rough, dangerous mountains about 30 leagues (perhaps 80 miles) across (1896a:553, 555). Jaramillo said that from the foot of the mountains they went northeast across the mountains to a reedy river.²⁰ Then the detachment continued in the same direction for three days to the river they called San Juan. From the San Juan the group marched through the rough country for two days, an estimated 20 miles or less. It is possible that here the party began the climb onto the Mogollon Rim and began to swing more to the north before crossing the river the Spaniards called the Balsas on rafts.

From the Balsas, Jaramillo said that it took two days (an estimated 20 miles or less) moving towards the northeast to reach the Rio Barranca, a narrow valley or canyon. The explorers may have been hard pressed to find adequate forage for their horses in the heavily forested mountains, which would have contributed to their poor condition upon reaching Zuni.

Another day of travel brought the expedition to the Rio Frio, which may have been one of the northward flowing mountain streams swollen by spring runoff. After crossing this stream, Jaramillo said that

²⁰ Jeff Reid and Stephanie Whittlesley (1990:pers. com.) suggest close examination of area river systems to try to identify the rivers listed in Jaramillo's narrative. By working backward from the Zuni River using the times, distances and directions in the narratives, some very tentative correlations can be made.

the detachment marched for a day across "a pine forest, almost at the end of which we found a spring and a cool little arroyo" (Jaramillo 1940:298). One more day's travel brought the group down out of the mountains to grasslands and the Rio Bermejo, thought to be the Little Colorado. With another day's travel, probably up the Little Colorado and then northeast along the Zuni River, the expedition entered the territory of Cíbola.

On this portion of the route, Coronado was accompanied by 80 horsemen and 25 footsoldiers (Relación del Suceso 1896:572). Mileage estimates vary from perhaps 15 to less than 10 miles per day, depending upon the terrain and the gradually deteriorating condition of the men and horses. For at least part of the trip, the explorers followed an Indian trail. Although the main army may have taken an easier line of travel, there is no documentary evidence that it followed a different route.

Correlation of the times, distances, and rivers mentioned in the Spanish narratives with Di Peso's proposed route through the San Bernardino Valley is difficult. In addition, Di Peso's suggested route through the canyon of the Blue River in Arizona is too steep, rocky, and narrow for travel with livestock, particularly during spring flooding. In his analysis of the route, Strout also failed to consider the rugged topography of the area southwest of Cíbola, but apparently based his route on the shortest distance between two points. Strout also confused the narratives, placing the arrival of Coronado and the army with all the livestock at Cíbola at the same time.

At least one of Udall's suggested routes across the White Mountains followed prehistoric Indian trails. It should be remembered that some of the prehistoric trails went up over the Mogollon Rim via a narrow, rocky route, occasionally using handholds in the rock. It would have been extremely difficult for mounted soldiers, and

later, cattle and sheep, to have gone over some of these early trails.

Coronado reached the Zuni River eight leagues (about 21 miles) below the village he named Granada after the city in Spain. Granada, which had about 200 houses, was most likely the ruined pueblo known today as Hawikku. Another of the Cíbola pueblos visited by the Spaniards was about the same size as Granada, and four other pueblos were smaller (about 30 to about 60 houses.) The largest pueblo, with more than 200 houses, was called Macaque, no doubt the now-abandoned site of Matsaki, situated about 18 miles upriver from Hawikku.²¹

Although Rodack (1985) presents an extremely persuasive argument for Kiakima as the first pueblo visited by Coronado, the location and topography do not fit the narratives quite as well as Hawikku. From the ruins at Hawikku the Zuni River valley can be seen winding away to the southwest, and it is the westernmost of the pueblos along the Zuni River. Hawikku is situated on a small round knoll that could be surrounded (as is suggested in the narratives), unlike Kiakima which is backed up to solid rock on one side. Rodack's argument also depends upon egress into the Zuni area from the canyons to the south, rather than up the Zuni River.

It is possible that Fray Marcos, and later Coronado with the advance party, came east into New Mexico somewhere south of Zuni and approached Cíbola from this direction, while the army took a more westerly route up the Little Colorado and Zuni rivers.

Coronado's party brought trade goods to exchange with the Indians it met along the way. Glass beads dating to this general period

²¹ For further descriptions of the various pueblos occupied during the entrada period, including those in the Zuni region and in eastern New Mexico, see Appendix A.

have been found, in archeological excavations at Hawikku, along with unclassified metal objects closely resembling crossbow bolts. The ruins at Kiakima have not been excavated, and it is possible that in the future additional archeological work there might help determine which of the pueblos was "Granada."

Of all the secondary authors writing about Coronado's route, Herbert Bolton has perhaps gained the greatest acceptance. Bolton's scholarly background and extensive field research, coupled with his readable prose and confident statements, are very persuasive--so much so that over time his proposed route has been accepted as fact by some. However, he based much of his research on the work of other earlier historians, and some of his route selections may have been influenced by those who accompanied him on some of his field trips. In a critique of Bolton's route, Wagstaff (1966:163) notes that the distances traveled do not fit with statements of chroniclers. Unfortunately, Wagstaff does not point out specific discrepancies. Other scholars (Sanchez 1990: pers. com.) suggest Bolton confused the names of certain topographic features.

THE ROUTE FROM CIBOLA TO CICUYE: DISCUSSION OF SECONDARY SOURCES

Because several of the Indian pueblos visited by Coronado are still in existence today, and because some of the topographic features described in the narratives can be identified, there is less uncertainty about the route between the Zuni pueblos (Cíbola)²² and Pecos (Cicuye) than for some other parts of the expedition. However, there are still areas of disagreement among scholars. Some feel that the route taken by the army crossed the rugged malpais (lava flow) south of Grants, using the centuries old Zuni-

²²Often the Indian province (a group of culturally related villages) and one of the villages in the province were given the same name by the Spanish. Cibola was both a village and a province; the same is true for Tiguex and, possibly, Tutahaco.

Acoma trail. Others suggest the army skirted the black rock, travelling either to the north or south. While most agree that Coronado and his small party entered the Rio Grande Valley some distance south of Bernalillo, his exact route is unclear. The route between the winter camp and Pecos also has several possible variants.

Bandelier (1892:326) conjectured that the army followed the old Zuni-Acoma trail across western New Mexico and the malpais to the Rio Grande. Coronado then took a more southerly route towards the Rio Grande along the Rio Quemado.

A. Grove Day (1964:119-120) asserts that following the hostilities at Hawikku, Coronado visited Matsaki (also known as Mats'a:kya, Macaque, or Salt City), the largest of the Zuni settlements situated in the vicinity of the northwest base of Dowa Yalanne or Corn Mountain. From the Zuni area, Day suggests Coronado may have swung through Cebolleta Canyon and down the San Jose River to reach the province of Tutahaco. This province was comprised of approximately 12 early Piro towns scattered along the Rio Grande south of Isleta. Day's chronicle suggests that Coronado then travelled upstream to the province of Tiguex (12 to 15 pueblos situated on both sides of the river, centered near present-day Bernalillo).

Vivian (1932:12) suggests that the Zuni guides led Coronado through rough country lacking water, reaching the Rio Grande at a pueblo called Tutahaco, somewhere in the vicinity of Isleta or further downstream in the Piro country.²³ On the basis of topography, he argues that the village of Tiguex was on the west bank of the Rio Grande (Vivian 1932:15).

²³The historic pueblos of Sandia and Isleta occupy the same locations as in pre-Spanish times.

Riley and Manson (1983:356) believe that Coronado's party used existing trade routes to cross New Mexico. One likely route ran eastward from Hawikku, via the Zuni Valley and Inscription Rock, to Acoma, Jemez, and Zia (with roads leading off to the middle Rio Grande Valley). Coronado may have taken the old "short cut" that ran towards El Paso. This trade route ran south and east from El Morro to intersect the line of the present U.S. Highway 85 at Socorro.²⁴

Bolton's account (1990:197) of the march through New Mexico suggests that after leaving Zuni, Coronado did not go by way of Acoma as had his advance guard. Instead, he went more to the southeast, descending the San Jose River into the Rio Grande Valley.

Strout (1974:6) proposed that the expedition went near Acoma, then northwest to the Rio Grande and thence to Pecos (1974:6). Stewart Udall (1987:141) suggested that Coronado stopped at Acoma before detouring southeast to the Piro pueblos at Tutahaco near today's Belen. He assumed Coronado's route upriver went by the pueblos of Santo Domingo, San Felipe, and Cochiti, as well as San Ildefonso, Santa Clara, San Juan, and San Gabriel.

Most authors agree that the expedition forces were reunited at their winter camp near present-day Bernalillo. There is, however, little agreement on the locations of the various pueblos named in the Spanish narratives, and correlations between the early pueblos and present-day archeological sites pose a number of problems. (For further discussions of the Rio Grande pueblos see Appendix A.)

²⁴The precise location of this prehistoric trading trail is not always clear. For example, the fork in the trail mentioned in the Spanish narratives could have been as far west as Pescado or as far east as El Morro. The trail may have gone by Techado Mesa where there is water, then to Pietown; or, it may have detoured further east, hitting present-day U.S. 60 near Datil. Riley suggests that Coronado's parties probably did not cross the malpais.

Some of the authors who discuss the prehistoric and historic pueblos along the Rio Grande include Vierra (1990), Bandelier (1892), Riley (1981), Hammond and Rey (1940a); Schroeder (1979 and 1990b), and Schaafsma (1988).

THE ROUTE FROM CIBOLA TO CICUYE: ANALYSIS

The various detachments of the expeditionary forces apparently used different routes to travel from Cibola to the Rio Grande Valley. Alvarado (and presumably Garcia López de Cárdenas a short time later) travelled from Cibola to Acoma and then to the Tiguex area. The army moved from Cibola to the central area of Tiguex, apparently by Alvarado's route.

Some suggest that Alvarado and the army's route probably followed the easy valley bottoms from Cibola to present-day Ramah and then past El Morro. Unfortunately, the known Spanish inscriptions in the rock of El Morro all date to a later period, and the Indian ruins in this area had been abandoned several centuries before the entrada. Some Spanish artifacts have been found at El Morro, but their provenience is unclear and no direct association with Coronado's expedition can be made.

From the El Morro Valley the Spaniards could have followed the old prehistoric ways that ran east through the Ponderosa country before skirting the malpais on the north or south to reach the mesa west of Acoma.²⁵ From there it was a relatively easy journey down into the Acoma Valley and eastward to the Rio Grande. Spanish horse gear and other equipment have been found on the isolated ranches in the vicinity of Cebolleta Mesa, but associations with the early Spanish entradas have not been determined.

²⁵ There is a time-worn foot trail from Acoma to Zuni that cuts directly across the malpais. However, the terrain is exceedingly rugged, consisting of both aa and pahoehoe lava. Even today, no fences are needed to keep livestock out of El Malpais National Monument.

According to the Spanish narratives, Coronado and 30 men departed from Cíbola to explore Tutahaco, the Piro pueblos along the Rio Grande south of Isleta. Because of the lack of reference to Acoma and an explicit discussion of travelling for three days without water (Castañeda 1896:492), the documents suggest that Coronado did not follow Alvarado's route to Tiguex. Instead he took another route, arriving in the Rio Grande Valley somewhere within Tutahaco, but not at the south end of the province (which was beyond present-day Socorro). Coronado did not travel south to the end of the Piro settlements, but turned north and went on to Tiguex.

In west-central New Mexico the malpais sharply reduces the potential routes. Presumably, Coronado avoided the lava or skirted it along the southern edge. Closer to the Rio Grande, westward trending drainages may have provided easy access into the river valley.

The expedition spent the winter of 1540-1541 in the Rio Grande Valley, probably in the Bernalillo area. Ceramics and other diagnostic artifacts have helped identify a number of Indian pueblos and sites along the Rio Grande that were occupied by pueblo people during this time. Many of these pueblos have been burned, suggesting a tenuous correlation with Spanish descriptions of the battles that occurred during the first winter of Spanish occupation of the Rio Grande area. Unfortunately, the dates of destruction for most of these pueblos have not, or cannot, be determined. Fragmentary pieces of chain mail and puebloan artifacts dating to this time have been found at Pottery Mound, west of the Rio Grande, and at sites along the Rio Grande. However, because weaponry and tools changed so little between 1550 and 1600, and because a number of other Spanish entradas moved through this area, there is little way to specifically identify those sites associated with Coronado. (An exception may be the unnamed site near Bernalillo, which is thought to be the winter camp.)

Following the long, cold winter on the Rio Grande, the army left for Quivira, marching north along the river to the region of Cochiti. Some authors suggest that Coronado then turned east up the Galisteo River valley, because the ruins of San Marcos and the pueblo of Galisteo seem to fit the pueblo the Spaniards called Ximena and the ruins seen by the expedition respectively. Other writers suggest that from Galisteo the route may have proceeded up the valley past present Lamy, and then eastward over Glorieta Pass to Cicuye.

It is also possible that Coronado's party cut eastward from the Galisteo region onto Glorieta Mesa, thence north and east to the vicinity of present day Rowe, New Mexico, before continuing a short distance north down the escarpment to reach Pecos (Cicuye) (Riley 1990:2). Archeological findings like crossbow bolts and other artifacts supplement the obvious historical evidence, leaving little doubt that Coronado's expedition visited Pecos.

THE ROUTE FROM CICUYE TO CONA: DISCUSSION OF SECONDARY SOURCES

In the spring of 1541, the entire expeditionary force left Tiguex, stopping at Cicuye (Pecos) on its way to Quivira. One of the major landmarks mentioned in the narratives was the bridge or ford Coronado's group built across the Cicuye river, described by later writers as the Pecos (favored by most scholars), Mora, or Canadian. The location of the crossing on the Pecos River has been a topic of much discussion, with bridge sites ranging all the way from San Miguel to Fort Sumner.

According to Schroeder (1962:3-10), Coronado's army skirted the south end of the Sangre de Cristo Mountains, crossed the Pecos River, and stopped at the Canadian River (near today's Conchas Reservoir). The army spent several days here building a bridge. The army's route then angled northeast into Texas. Schroeder's assertion that the bridge was built on the Canadian River, rather

than the Pecos, is based partly upon the direction of the march given by Jaramillo, and upon Schroeder's interpolation of the ambiguous Spanish narratives.

Schroeder proposed that Coronado entered what is now the Texas Panhandle a short distance north of the Canadian River. Moving northeast, the Spaniards encountered large herds of bison, and Querecho and Teya Indians. At a second set of Querecho villages, the Spaniards turned southeast until they reached the first barranca, the Canadian River valley near the 101st meridian. The army then marched one day further to the last barranca, either the north fork of the Canadian or the Cimarron rivers.

John Peterson (1988:28-32) proposed another Coronado route within Texas, based partly on a reiteration of Schroeder's route. Traveling northeast out of the Pecos area, and crossing the Canadian River onto the western edge of the southern plains, the Spaniards encountered the Querechos somewhere in the vicinity of present-day Dumas, Texas. Peterson thought that the first barranca, where the horses were trampled and buried by stampeding bison, was probably the headwaters of Palo Duro Creek (not to be confused with Palo Duro Canyon), somewhere southwest of Spearman, Texas. The Colima-like barranca was downstream along the Canadian River, somewhere in the vicinity of Adobe Walls.²⁶ Peterson suggests that Coronado then marched north to the headwaters of Wolf Creek, which he followed to Kiowa Creek, and thence northward to the deep barranca of the North Canadian (1988:30).

²⁶ This area was a "major focus in the migratory patterns of the bison herds into the Southern Plains" (Peterson 1988:31). It was also a "critical locale in the region," a place where several different explorers, traders, bison hunters, and proto-historic groups met, and the center of prehistoric settlement in the northern Texas Panhandle.

Citing earlier writers, Winship (1990:52-53) suggests that Coronado marched northeast from Pecos, bridging the Canadian River a little east of present-day Mora. The Spaniards continued to march eastward before turning south for 50 leagues to intersect one of the tributaries of the Colorado River in central Texas (Winship 1990:map xiv). The army returned directly northwest to Pecos from this point, and Coronado marched northward towards Quivira.

Early day historian John B. Dunbar (1908:71) asserted that the bridge was constructed across the Mora, a confluent of the Canadian River. From this area the army moved generally east and a little south, halting just short of the western border of the Pottawatomie Reservation, on the Canadian River.

Basing their arguments on the topography and travel times, Richard and Shirley Flint (1992: in press) suggest that the expedition moved south across Glorieta Mesa to Cañon Blanco. Following this drainage, it reached the river crossing area near La Junta where the Gallinas River drains into the Pecos. The crossing was between the communities of Tecolotito and Colonias.

W. C. Holden (1944:6-15) and J. W. Williams (1959:16-27) proposed similar routes in this area. Both authors believe the expedition crossed the Pecos River at Anton Chico, marched along the river to the vicinity of Santa Rosa, and then turned eastward, following Frio Draw into Texas.

Holden's proposed route followed Frio Draw to Tierra Blanca Creek, southwest of Amarillo. The Spaniards then traveled to Palo Duro Canyon. The group reconnoitered southward, crossing Tule Canyon, and camping at Blanco Canyon. The army subsequently returned to the Rio Grande, while Coronado's smaller group headed northeast.

Holden suggests that had the Spaniards bridged the Canadian River, they would not have seen salt lakes upon their return, nor would

they have gone the extra distance southwest to intersect the Pecos River 30 leagues below the bridge--it would have been much simpler just to go directly to the bridge.²⁷ Holden also lays out a route that has water available at the end of each day's march.

Williams' proposed route is based on his analysis of the range and distribution of plants mentioned in the Spanish narratives, and days/distance traveled by the expedition. According to Williams, there were three feasible routes that ran eastward into Texas: the southern route by Pecos, Odessa, and Big Spring; the Canadian River route; and the middle crossing.²⁸ These routes were used prehistorically and later developed into formal trails. Williams (1959:18-20) rejected both the southern route (too far) and the Canadian River route (continued broken country), and assumed Coronado's expedition chose the middle route. Williams suggested the Spaniards turned northeast just inside the Texas border somewhere in the vicinity of Sod House Draw or Frio Draw. The army then headed southeast toward the Los Lingos-Quitague Canyon area. The army next went almost due south to the headwaters of the North Concho River, near Sterling City, Texas.²⁹

Like Williams, Wagstaff (1966:140-148) used the vegetation mentioned in the narratives to help determine Coronado's route. He identified the first barranca as the valley of the North Concho River or one of its tributaries somewhere near present-day Sterling

²⁷ Holden (1944:16) states that there are no salt lakes north of the north Yellowhouse Draw, Black Water Draw, and the Portales Valley drainage; just south of this area are a considerable number of salt lakes. Old timers were convinced that the salt lake referred to in the Spanish narratives was near Portales.

²⁸ Riley's map also shows a major trade route to the buffalo plains that crossed the Pecos River not too far south of Pecos.

²⁹ Williams does not map the rest of the expedition to Quivira.

City, based upon Castañeda's suggestion that de Vaca was in this area (Wagstaff 1966:142-143). Wagstaff also argued that Palo Duro and Tule canyons were too immense to compare with Colima.

In his analysis of Coronado's route, David Donoghue (1929) attempted to match natural features mentioned in the Spanish narratives with the terrain. He believed that the army marched along the Pecos River, crossing it near Santa Rosa. The group then worked its way south and east across the Llano Estacado, passing through Quay County and northern Curry County in New Mexico. From there, the expedition marched through Parmer County and across Castro and Swisher counties to intersect Palo Duro and Tule canyons.

Waldo Wedel (1970) analyzed Coronado's route from Pecos to Quivira, attempting to reconcile apparent discrepancies among the accounts by averaging the differing figures, and in a few cases assuming the data are incorrect. He acknowledged that different writers were with different groups, each moving at a different rate of speed, but suggested this was not a major factor. Wedel located the Pecos River bridge at the point where the river makes a bend southward, somewhere in the vicinity of Santa Rosa. From here the expedition moved generally east somewhere south of the Canadian River drainage where the first Querecho settlement was found. Wedel believes the army entered into Texas just south of the Canadian River, arced southeast to Palo Duro Canyon, then followed the escarpment to the last barranca at the headwater canyons of the Brazos River.

Hodge (1907:facing 280) described a route similar to that of Wedel except that the final camp was a great deal further south on the Colorado River. Coronado then marched due north from this point.

Simpson (1872:333-340) assumed that Coronado went north from Cicuye, crossing the Rio Cicuye (the Gallinas) north of Las Vegas.

Continuing northward, the group entered what is now southern Colorado before turning east to intersect the Arkansas River near Ford, Kansas. The group then rode east, paralleling the Arkansas for some distance. The group divided in the vicinity of present-day Kingman, Kansas, and Coronado and the small detachment headed northeast towards Quivira.

Strout's map (1974:6) shows the expedition on the east side of the Pecos River, angling southeast along the river until about Santa Rosa where it went due east. Strout proposed that Coronado entered Texas in the general vicinity of Deaf Smith County, moving east and then north to Palo Duro Canyon.

Herbert Bolton (1990:242-250) believed that the Quivira-bound army crossed the river near Anton Chico and struck out eastward on the south side of the Canadian River until it reached what is now the Texas Panhandle. During this part of the journey the Spaniards encountered Querechos, hunters whose temporary villages were clustered in the vicinity of vast herds of bison. According to Bolton, Coronado entered Texas along the Canadian River drainage. Ascending out of the river valley onto a vast flat (La Vega), Coronado's army wandered "for many days over the trackless plains, going generally southeastward. . .with a final swing well to the eastward." Coming to a great barranca, "like those of Colima," the Spaniards found a large group of Teyas--enemies of the Querechos--encamped in the canyon (Bolton 1990:256).³⁰ Bolton suggested that the barranca was Tule Canyon, east of Tulia, near the line between Swisher and Briscoe counties, Texas. The army changed its direction of march here after Coronado confronted the Turk, who had served as the Spaniards' guide. A day's ride to the

³⁰According to Margaret Harper (1990:n.p.), the barrancas of Colima are "at the edges of a great escarpment...with steep sides sometimes going down 2,000 feet, and a bench formation at the bottom." The word "barranca" can also be translated as "canyon with steep cliffs."

north brought the army to another even deeper barranca that Bolton believed was Palo Duro Canyon. The main body of the army was left here and would later return to the Rio Grande Valley. Coronado and a small hand-picked group followed buffalo trails "north by the needle" across the High Plains.

Carl Sauer (1971:142-144) suggested that Coronado followed the Pecos River for a distance. Once past the mountain spurs, the expedition turned due east across the Llano Estacado. Sauer asserts that the army built a bridge and crossed the stream in the vicinity of Puerta de Luna. Sauer's suggested route across the plains generally approximates the route proposed by Herbert Bolton.

Weaver (1985:31) also agreed with Bolton's proposed route into Texas and northward towards Quivira. Weaver asserted that Coronado followed the trail taken by Alvarado and his group as they ventured onto the plains in search of buffalo.

The three alternate Texas routes proposed by Udall (1987) suggest Coronado crossed the Llano Estacado, discovered Tule and Palo Duro canyons, and journeyed much further south than Bolton claimed.

According to A. Grove Day (1964:356), the expedition travelled down the Puerco River, and crossed the river at Puerto de Luna. Heading northeast, it entered Texas in or near the Canadian River valley. From there Day suggests Coronado marched southward to the great ravines located on one of the upper branches of the Brazos River in Texas, before turning northward to Quivira.

Robert Hill's route (described in Wagstaff 1966:161-163) went east from the bridge on the Pecos, dropped off the plains to reach the mouth of the Pease River, then cut south/southwest to the mouth of the Concho River before heading due north along the same general lines as Hodge's route.

Frank Bryan (1956:87-96) asserted that Coronado turned south on the staked plains and followed Running Water Draw to the White River in Floyd County. Coronado made the decision here to go northward. Bryan notes that the exploring party led by López had to be following Running Water Draw because upon returning from their trek to the east they marched downstream to reach the main army (1956:93).

W. H. Stephenson (1926:69-73) focused on the Texas portion of Coronado's trek. Stephenson suggested that because no river crossing beyond the Pecos was mentioned, the party did not follow the Canadian River drainage. Instead it went in a southeasterly direction through what is now Parmer County to the "great ravine"--the White River or Arroyo Blanco (a branch of the Salt Fork of the Brazos). Following the second ravine, possibly the Double Mountain Fork of the Brazos, Coronado left the army somewhere near the junction of Duck Creek with the Salt Fork, in Kent County.

Kiser's discussion (1978) focused narrowly on a bison bone deposit on the south side of Silver Lake, Texas. He cited Castañeda's description of a salt lake and a large bison bone pile, noting congruities between the site location and description, and the probable return route of Coronado's army. Donoghue, Wedel, Holden, and Winship all route the army's return trip through this general area. Silver Lake is, however, some distance southwest of the proposed routes of Bolton and others, and would not have been on the most direct route to the Pecos River bridge from Tule or Quitaque canyons.

THE ROUTE FROM CICUYE TO CONA: ANALYSIS

The major uncertainties on this portion of the route are between the crossing of the Cicuye River and the point where the main body of the army turns back and Coronado continues on to Quivira. Some of the ambiguities can be explained by the fact that the narratives

were written by different persons who probably were with different groups. For example, there are differences in the departure dates and the travel times among the accounts written by Coronado, Jaramillo, and Castañeda. In the past, scholars have often averaged the travel times, or disregarded one or more of the accounts.

The expedition may have departed Tiguex and/or Cicuye in two different groups: the advance party and the main army. Twenty years later, Castañeda (1940:234) wrote that the main body of the army left Tiguex on May 5. However, Coronado states that he left on April 23, possibly with the advance guard (Coronado 1896b:580).

Presumably Jaramillo was with Coronado and the advance guard when he wrote of the trip from Cicuye to the Cicuye River, describing it as a journey of three days. Jaramillo did not mention construction of a bridge or ford, so this may have been completed by the army after the advance guard had passed. Castañeda (1896:504), with the main army, stated that they marched for four days time (not four jornadas) from Cicuye before reaching the Rio Cicuye. The difference in travel times given by Jaramillo and Castañeda is understandable, given the slower travel time for the army.

Since the entire army and its livestock was leaving Cicuye (Castañeda 1896:504), the distance travelled in this four-day period may have been between 25 and 50 miles, not the 60 to 70 miles assumed by many scholars. The entire army, encumbered by livestock and pack animals, would probably seek the least difficult route to the plains, not necessarily the fastest route.

Based on the secondary accounts of the expedition, it is obvious that there are many possible routes from Cicuye to Cona. However, some routes appear to be more feasible than others. In describing this portion of the journey, Castañeda said that after four days travel they came to a river with a strong, deep current that flowed

down past Cicuye (not "toward," as Winship translated it), so they called it the Cicuye River. They camped there four days while the army bridged the stream, which was swollen by heavy spring runoff. This may have been accomplished by building a bridge, much as De Soto's group had done during their explorations, or by enlarging the crossing (the ford or puente, which Winship translated literally as "bridge").

If the Cicuye River was indeed the present-day Pecos River, there are several areas where the army could have crossed. It is possible to go south from Pecos, along the west side of the Pecos Valley. Following this route, the army would have been out of sight of the river for several days. The river could have been bridged at San Miguel, less than 40 miles from Cicuye.³¹

Numerous authors have discussed the location of the Cicuye River bridge. Holden's arguments (1944) regarding the time, distance, and difficulty of the Pecos River crossing seem in accord with the narratives. However, Holden suggested that Jaramillo may have been consistently several degrees off in his bearings when describing the direction of travel. It is equally feasible that Jaramillo was correct, and/or that translation and copying errors confused northeast and northwest. Unfortunately, Holden ignored changes in magnetic declination since the 1500s and relied mistakenly upon 1940s data.

Bolton's route runs along the west side of the Pecos River for some distance before the crossing. However, it would have been difficult to follow Bolton's route down the Pecos Valley. The stream meanders from one side of the valley to the other, and the valley becomes too rough and narrow to traverse at about the

³¹There is a fordable point here, hence the name "San Jose of the Ford." This route was the line later followed by the Santa Fe Trail up the Pecos valley.

present location of Villanueva State Park. If a bridge were built too far below San Miguel, the army would have to recross the river several times because of the meanders. Then, once in the canyon, the stream bed is narrow, with no place to travel safely along either side. The Pecos River Canyon prevents access to the river from the high cliffs on both sides for perhaps 10 miles.

As suggested by the Flints (1992:in press), the army could easily have followed the gently sloping contours of Rowe Mesa and Cañon Blanco to ford the Pecos River below the narrow canyon.

Schroeder's proposed bridge (1962:3-10) on the Canadian River appears to be less feasible. To reach this bridge site in four days would involve moving the army more than 20 miles a day across hilly country--not the level land described by Schroeder (1991:1,4). Also, on its return from Cona and the barranca, the army marched up the Cicuye River to reach Pecos. However, the Canadian River does not lead to Pecos. Schroeder also assumes the large river toward the sunset with 90 days of settlements is the Canadian rather than the generally accepted Mississippi River.

There appear to be other ambiguities in Schroeder's proposed route. As mapped, Schroeder's last barranca is in a wide gentle valley "with none of the characteristics that one would expect of a 'barranca'" (Blakeslee 1990:2). Also, the Canadian is often so shallow that a bridge would not be necessary, and during high water the flooded area would probably be impossible to bridge.

In his analysis of the route, Simpson (1872) ignores critical geological and geographical landmarks, and his descriptions of distances and times do not agree with what is known of the expedition. For example, his route northeast from Pecos crosses mountainous terrain before entering the plains, which is not supported by the narratives. He refers to deep barrancas somewhere

in the vicinity of Kingman, Kansas, but does not describe them. However, there are no great barrancas in this area.

R. M. Wagstaff (1966:138-140) notes that he disregarded entirely the direction of march given in expedition chronicles in mapping his proposed route. Clearly, poor or inaccurate translations have led to some confusion regarding the direction Coronado went. However, it hardly seems likely that all the Spanish narratives were in error.

The Spanish narratives contain some descriptions of the next stage of the journey. After crossing the Cicuye River, the army probably proceeded in an direction for eight or 10 days. The various accounts differ considerably in their statements of the direction of travel. Castañeda (1896:504) says the general direction of travel after leaving Tiguex was "between north and east, but more toward the north" until López was dispatched toward the east. Jaramillo (1896:587-588) said that "if I remember rightly..." the general direction of travel to the Cicuye River crossing was northeast, and that from the river crossing across the plains the army travelled in a northerly direction. He later modified this, saying that the Turk had led them "more to the east." The various remarks about how the Turk had misled the army away from Quivira, or alternatively had attempted to take the army to the Mississippi, suggest that the army was marching generally eastward once it left the Pecos River rather than toward the northeast.

If the army headed in an eastward direction from the Cicuye River crossing, it would have encountered rough country--mesas and canyons with vertical walls--east of Bernal. The full army probably would not have followed this route--it had to turn to the southeast or northeast. The country continues to be rugged for some distance toward the northeast, so the army would have had to go halfway to the present Colorado border before being able to turn east. This would shorten the distance to Quivira and does not

match the distances and times of the later portions of the journals. The route to the southeast appears much more feasible, continuing along relatively flat uplands that provided forage, water, and easy egress for the livestock.

After travelling for 10 days (from the Cicuye River bridge), the army came to a Querecho encampment. Estimates of the probable location of this encampment vary widely and depend strongly upon the route selected, and the speed and direction of the army. It stands to reason that the army could make reasonably good time, perhaps 10 miles per day, once it was out on the open, grassy country of eastern New Mexico, Castañeda (1896:526) notes that the plains begin 30 leagues (about 80 miles) from Cicuye, or perhaps 40 to 55 miles from the bridge. He also indicated that the army moved for ten jornadas after crossing the Cicuye River and before reaching the Querecho encampment.

The various Spanish narratives are confusing at this point. After leaving the province of Tiguex on April 23, Coronado journeyed nine days before reaching the plains. The *Traslado de las Nuevas* (1990:190-191) notes that the expedition reached country as level as the sea with numberless cows four days from Cicuye. (The plains were described as 30 leagues or even more from Cíbola to "this place.")

Coronado (1896b:580) also states that after 17 days march the army encountered Querecho Indians in their field tents, surrounded by vast herds of bison. He does not explain this figure, and he may be referring to total travel time from either Tiguex or Pecos, by either the army or the advance group. Castañeda's words indicate that Coronado had rejoined the army at this point: "the general talked with them [Querechos], but as they had already talked with the Turk, who was with the advance guard, they agreed with what he had said" (1896:504) (emphasis added).

Examination of the time of travel may help clarify the location of the expedition at this point. If we assume that the army was travelling around 10 miles per day, the first Querecho village would be located either somewhere near the Texas-New Mexico border, or about 100 miles east of the bridge, depending on whether the distance was measured from the Rio Grande valley or the Pecos River. Castañeda (1896:504) asserts that they encountered "cows" (bison) eight days out from the bridge; two days later they found the Querechos. This would place the Querecho village about 100 miles east of the crossing of the Cicuye River, again assuming the army travelled an average of 10 miles per day. Although there are numerous teepee rings and campsites scattered throughout this area, consistent with the Querecho hunting camps described in the narratives, none of these can be tied directly to the expedition.

Jaramillo (1896:588) remembered that they encountered the Querecho Indians among the first cows, four or five days from entering the plains. It appears that Jaramillo was with the advance guard at this point. The translation is unclear as to whether Jaramillo's reference to finding Indians among the first cows refers to bison generally, or to the cows in the mixed herd (bulls and cows) encountered perhaps eight days from the bridge crossing.

For two days the expedition moved generally northeast, but more toward the north, among other roaming Querechos and incredible numbers of bison. Jaramillo (1896:588) writes that they had been travelling in the same direction along "those streams which are among the cows" for eight or ten days. This suggests that the route paralleled the Canadian River drainage eastward.

Informed by the Turk that Haxa was only one or two days ahead, Coronado sent López with a guide to "go at full speed toward the sunrise for two days... and then return to meet the army which set out in the same direction next day" (Castañeda 1896:505). López, travelling fast, covered twenty leagues (about 50 miles) to the

east in two days, using a sea compass for direction. Along the way he lost three horses with their saddles and bridles when they fell into a barranca during a buffalo stampede. López found no trace of Quivira, only cows and the sky. These passages suggest that López first travelled through broken country containing barrancas, then moved onto more level ground as he went eastward. He turned back to meet the army, which may have travelled 25 miles in the same period, perhaps in the vicinity of the present New Mexico-Texas border.

Meanwhile, Coronado had sent men out along a small river to search for López. It appears that this stream ran north-south, because Coronado sent the searchers in both directions (i.e., upstream and downstream) to find López. Most drainages in eastern New Mexico along the boundary with Texas generally run east-west. However, near the border town of Glenrio there are a series of north-south trending drainages, including the Arroyo des Mujeres (Arroyo Truillo) and the Arroyo del Puerto. The latter affords easy access onto the caprock.

From these clues it appears that the army changed the direction of its march at this point (i.e., after the search for Lopez) and moved away from the stream courses and rolling country onto the llano. The country had by now become so level that one of the Spaniards got lost while hunting (Castañeda 1896:504-505). This suggests that the expedition was now on the Llano Estacado. The caprock forms a physical barrier to travel, and there are only a few places where it would be feasible to drive livestock up onto the llano through breaks in the caprock. One of these is at the Arroyo del Puerto in eastern New Mexico; other breaks in the caprock occur to the south. Coronado's description also suggests they had moved onto the llano:

I traveled five days more as the guides wished to lead me, until I reached some plains, with no more landmarks than as if we had been swallowed up in the sea...there was not a stone, nor a bit of rising ground, nor a tree,

nor a shrub, nor anything to go by. There is much very fine pasture land, with good grass (Coronado 1990c:201).

Once López was found by Indians from the army, Coronado then sent Maldonado forward with a small troop. Presumably Maldonado travelled south-southeast, because the López expedition to the east had proved unsuccessful and Coronado apparently had, as yet, no inkling that Quivira lay to the north. Maldonado travelled for four days and came across settlements of the Teyas Indians in a large canyon "like those of Colima" (Castañeda 1896:505). He sent back guides to bring the main body of the army to this canyon. If Maldonado was moving at a normal speed, he could have covered 17 to 20 miles per day, or about 70 to 80 miles, possibly placing him somewhere along the Palo Duro Canyon system. The next day after Maldonado's departure, the army also moved ahead in the same direction. Although Maldonado's group had placed stones and piles of dung for the army to follow, guides were sent back to assist it, suggesting the army was moving across the flat, trackless llano away from discernible drainages or landmarks (Castañeda 1990:132).

Several measures of distance are given at this point. The *Relación del Suceso* (1896:577) said that the army had travelled "100 [leagues] to the east, and 50 to the south." (Other translations render this as 150 leagues to the southeast (Winship 1896:577, n.1). However, it is not clear whether the narrators included the northward trek to Pecos in these calculations. It should be noted that some of the many discrepancies in time and distance among the various accounts can also be explained by the circuitous route followed through the trackless llano.

After reaching the canyon, the army rested several days (Castañeda 1896:506-507). Castañeda describes a hailstorm that broke utensils, battered the tents, and frightened the horses, who dashed up the sides of the ravine. The Spaniards got them down with great difficulty. Apparently none of the horses escaped to the plains

above, perhaps due to caprock on the upper part of the ravine walls. The Palo Duro Canyon system contains many such steep-sided walls.

When Coronado explored the canyon settlements of the Teyas, he found them to extend some distance. Castañeda (1990:133) wrote that the canyon country was well inhabited with Teya settlements, (known collectively as Cona) extending for three days. This part of Castañeda's narrative is especially confusing. It is not clear exactly where the canyons were first entered by Maldonado, where the army camps were situated nor which direction(s) the army and/or Coronado explored. To quote Castañeda:

From here [the canyon like Colima found by Maldonato] the general sent out to explore the country, and they found another settlement four days from there...The country was well inhabited, and they had plenty of kidney beans and prunes like those of Castile, and tall vineyards. These village settlements extended for three days. This was called Cona. Some Teyas...went with the army from here and traveled as far as the end of the other settlements...and then they gave them guides to proceed to a large ravine where the army was (Castañeda 1990:133).

Coronado and one group may have moved eastward while the army, accompanied by Teya Indians, traveled south to other settlements and then to a large ravine a league wide, with a river and trees. Some authors suggest this may have been south of Palo Duro, somewhere in the Quitaque area. However, the narratives are confusing, and several different interpretations can be made. It is clear, though, that the first settlement found by Maldonado was only the beginning of a heavily populated area known as Cona. Many villages were present along the canyons for 50 or so miles (Castañeda 1896:506-508).

The narratives indicate that the army established a camp in a large canyon with a small river in the bottom. Parts of the canyon were a league (ca. 2.6 miles) wide (Castañeda 1896:507). Some writers speculate that this may have been Palo Duro Canyon. Descriptions

of the army's return trip suggest to other scholars that this was Tule Canyon, and that it was the departure point for the army's return to Tiguex.

The narratives give a number of clues about the vegetation and landforms near Cona. Also, Cona's large settlements should have left behind sites identifiable today. Archeological investigations have found numerous sites all across the Panhandle that may date to this period. These contact period Indian sites contain such features as large camping areas and artifacts like late ceramics from the Rio Grande area, occasional pieces of metal, trade beads, and other indications of contact with a broader area.³² Although the large sites are often associated with the canyon country and available water, they are scattered across the area with no spatial patterning nor diagnostic artifacts that would tie them definitively to Coronado's entrada. It is clear that additional work needs to be done in the Palo Duro area to try to define sites associated with the entrada.

The Panhandle-Plains Museum in Canyon, Texas, and several other local museums and repositories have a number of Spanish items like weaponry, religious items, and horse gear that were found on area ranches. However there is no way to tell whether or not these items came from the Coronado expedition because their exact source and their association to other site materials is generally unknown, and because they have not been or cannot be firmly dated to this period.

Several authors have tried to document the presence of Coronado's expedition in central Texas. For example, Williams' arguments for a route far to the south of Palo Duro Canyon are based on plant distribution (nuts, mulberries, grapes, and wild roses). He argues

³²Some of these sites are listed in chapter 5 under recommendations for further research.

that Coronado's party had to be far south of the Palo Duro Canyon system because no pecans are found there presently. Unfortunately, he assumed that the "walnuts" (Nueces or nogales) mentioned in the narratives refer to pecans, disregarding the presence of other native varieties of nuts.³³ Williams used the 1910 census and local informants, rather than paleobotanists, to document the presence of certain plants and nuts. Also, such comparisons are probably not valid four centuries after Coronado's journey because climatic changes, the introduction of agriculture and stock raising, and competition with exotics have altered the range and distribution of many native plants.

Other authors also suggest the route was quite a distance south of the Palo Duro Canyon system, basing their arguments on Castañeda's discussion of the distance back to Tiguex. Castañeda (1990:133-134) states that

up to this point they had made thirty-seven days' marches, traveling 6 or 7 leagues [ca. 16 or 18.5] miles a day. It had been the duty of one man to measure and count his steps. They found that it was 250 leagues [about 663 miles] back to the settlements.

Winship (1990:222, chapter XX, fn. 4) assumes that "the settlements" meant Tiguex, ignoring other narrative accounts that occasionally refer to the "settlements at Cíbola." Based on this translation, Winship and several other authors placed the Colima-like canyons far to the south and east in Texas along the Concho River basin.

However, other scholars argue that the narratives clearly describe the barrancas of the Palo Duro Canyon system. Approximate

³³ A checklist of Texas plants published by the Agricultural and Mechanical College of Texas in 1962 show pecans (Carya illinoensis), black walnuts, and several species of Arizona walnut (Juglans major) as far north as Donley and Armstrong counties, Texas.

measurements of the distance from Tiguex to the Palo Duro Canyon in the vicinity of Quitaque, Texas, are a little less than 400 miles, short of the distance claimed. But if the term "the settlements" refers to Cibola, the distance is closer to 600 miles. It is also likely that many of the distances given in the Spanish documents are inaccurate, having failed to take into account the effect rolling country, detours, or circuitous travel on the llano would have upon the counted footsteps. In addition, some travel distances may also have been inflated in the retelling some years later.

Coronado finally decided to go on to Quivira with a small troop of 30 horsemen, some footsoldiers, and Teyas guides. The army remained in the large canyon for two weeks, drying buffalo meat before beginning the trip back to Tiguex. Castañeda (1990:135-136) stated that the army returned to Tiguex by a shorter route. This apparently involved going directly west or northwest across the flat plains to the Cicuye River. The army reached the river 30 leagues (about 80 miles) south of where it had crossed going out.

By backtracing eastward from this point, some experts proposed a route running between the army encampment somewhere in the vicinity of Tule Canyon and the Pecos River near Fort Sumner (Blakeslee 1990:4). This route follows an old Comanchero trail along a chain of small lakes (including Tule, Silver, Salt, and Tierra Blanca lakes) and a system of drainages from the Tule Canyon area west to the Pecos River.

Accounts of the return trip mention salt lakes and huge piles of bison bone seen by the travelers. A large deposit of bison bone, similar to the explorers' descriptions, has been found at Silver

Lake, southwest of Littlefield, Texas.³⁴ Following the chain of lakes, the army could have returned to Pecos via this route.

The army reached Tiguex in mid-July, according to Castañeda (1896:510). From Tiguex, the army had been on the march since May 5. It took the Spaniards perhaps 37 days (from about June 11th) to reach the large canyon from which Coronado left for Quivira, and another fortnight (10 days) for the preparation for the return trip (ca. June 21). The return then took about 25 days, if Castañeda's date of return is correct. If the barrancas were in the Palo Duro Canyon system, the army would be about 310 miles from Tiguex by way of Lake Sumner, giving an average travel time of perhaps 12 miles per day. Although some livestock evidently returned with the army to Tiguex, their numbers were probably greatly reduced.³⁵ This would have allowed the army to move more swiftly on the return trip than on the first part of the journey from Tiguex.

THE ROUTE FROM CONA TO QUIVIRA: DISCUSSION OF SECONDARY SOURCES

Bolton (1990:287) states that Coronado's small handpicked detachment entered the Oklahoma Panhandle somewhere west of the 100th meridian, crossing the state near the present-day cities of Panhandle, Hardesty, Adams, Tyrone, and Stone. Coming into what is now Kansas, the small group moved northeast to cross the Arkansas River (also known as the Quiviran River or the St. Peter and St. Paul River) in the vicinity of Ford. Following the river downstream past Pawnee Rock and the Great Bend of the Arkansas, the group went east across several tributaries of the Arkansas to the vicinity of Lyons, Kansas (Bolton 1990:291). The Spaniards spent

³⁴It should be noted, however, that large deposits of bison bone are found in a number of sites across the Panhandle.

³⁵ Before the army left Tiguex in the spring of 1542 for the return to Mexico, a number of sheep were given to Father Luis who had chosen to remain at Cicuye (Castañeda 1990:160).

almost a month here among the large Quiviran villages whose people are now thought to be ancestral to historic Wichita groups.

Wedel (1970:165) believes the small detachment marched from the last barranca at the headwater canyons of the Brazos north/northeast across the east side of the Texas Panhandle. Although Wedel's suggested route across the Oklahoma Panhandle is somewhat further to the east than Bolton's route, both authors generally agree on the route through Kansas and the location of Quivira in the middle Arkansas River valley.

David Donoghue (1929) believed that Coronado's small party headed northward from the Palo Duro Canyon system and found the Quiviran settlements along the tributaries of Wolf Creek and the Canadian River (still in Texas).

Peterson (1988:30) suggested that Coronado marched north from the deep barranca of the North Canadian River to the Cimarron River, thence to Bluff Creek, and finally the Arkansas River.

Winship's route (1922:map) paralleled the Arkansas River to Great Bend, but then made a large circle northeast almost to the Nebraska border, westward to western Kansas, and then returning south to the Arkansas River somewhat west of Dodge City.

Schroeder (1962:10) believed Coronado left the last barranca, either the north fork of the Canadian or the Cimarron rivers, and marched in a northeasterly direction into the base of the Oklahoma Panhandle. Running almost due north from here, Schroeder's route entered Kansas just south of Ford.

Simpson (1872:333-340) thought that the barrancas were located in Kansas. Therefore he suggested that the group divided in the vicinity of present-day Kingman. Coronado and the small detachment headed northeast as far as the 40th degree of latitude,

while the army headed due southwest and returned to the Pecos River.

Dunbar (1908:71) asserted that Coronado moved due north from the Teyas village on the Canadian River until it reached the Cimarron River, which it followed until near 23 degrees longitude. Turning northward once again, the small group intersected the Arkansas River after two easy marches.

Bryan (1956:87-96) suggests that from the White River in Texas, Coronado's entourage moved northward across the Canadian River. Bryan asserts that Quivira was located on the Cimarron River in Oklahoma.

W. H. Stephenson (1926:69-73) felt that Coronado left the army somewhere near the junction of Duck Creek with the Salt Fork, in Kent County, Texas. Travelling due north, Coronado crossed the Canadian River near Amarillo and went north to the Great Bend of the Arkansas River.

Blakeslee (1990:3) suggested that Coronado followed Indian trails to the Cimarron River, crossing it just north of the Oklahoma border, close to the boundary between Clark and Comanche counties in Kansas. He based this route on a 1739 reference to Spanish inscriptions in this area. If this route were continued northward, the Arkansas River would be encountered and crossed somewhere in the vicinity of Kinsley, Kansas, where an early ford exists.

Several authors including Hodge, Udall, and Day, proposed routes that originate at the barrancas of major rivers in central Texas. They suggest that Coronado marched due north across Texas, Oklahoma and Kansas, reaching Quivira in central or northern Kansas. Day (1964:356) suggests Coronado's smaller group proceeded northward along the 100th meridian. Day, Dunbar (1908:75) and Hodge

(1907:280) agree that Quivira was near the Kansas River in the vicinity of Junction City.

Studies of prehistoric artifacts also convinced early-day scholar and promotor of the Quivira Historical Society J. V. Brower that the provinces of Harahay and Quivira were in central and northern Kansas (Brower 1903). According to Brower, Coronado's month-long encampment was in the McDowell Creek valley, not too far from Junction City.

Richey (1900:483) also asserted that Coronado's route through Kansas ran from the old Santa Fe Trail crossing of the Arkansas River to the ravines formed by the upper drainages of Deep, Mill, Humboldt, and McDowell creeks near Manhattan. His conclusions were based on Spanish descriptions of direction, topography, vegetation, and prehistoric artifacts.

Other authors placed Quivira further north and east. Holden (1944:19) thought that Coronado's party reached far northeastern Kansas near the 40th degree. Wagstaff (1966:156) agreed, suggesting that Quivira was between the 39th and 40th parallels. James Savage, in a Senate document relating to the discovery of Nebraska (1893:26, 31), suggests that Coronado marched northeast from Pecos to near the Arkansas River. The army turned back here while Coronado proceeded somewhat northeast to reach the Platte River in Nebraska.

THE ROUTE FROM CONA TO QUIVIRA: ANALYSIS

From the barrancas, Coronado and his small detachment moved toward Quivira. Again, there are many different interpretations of the narratives regarding the distance and direction of travel. It is apparent that Coronado may have gone either due north or northeast, depending upon the location of the departure point.

Some scholars feel strongly that Coronado and his small detachment marched due "north by the needle" (see the previous discussions under secondary accounts). Unfortunately, we do not know whether the Spaniards were referring to magnetic north, true north as ascertained from their compass, or a general direction of march. Magnetic declination (the amount of deviation between true north and magnetic north) shifts through time (but not at a uniform rate) and is irregular over the earth. Extrapolation from coastal data collected in the late 1500s is not precise (Peddie 1990: pers. com.). However, it appears that the agonic line or line of zero declination in 1600 may have been close to Coronado's route (Wagstaff 1966:144). In general, the magnetic declination in the southwestern United States during the period between A.D. 1400 and 1600 ranged from about 2 degrees west to 2 degrees east, so an estimate of 0 degrees declination as proposed by Wagstaff is feasible, albeit admittedly scientifically imprecise (Lund 1990:pers. com.). Archeomagnetic data collected from areas in New Mexico, and dated independently to the 1500s, indicates an average declination of about 4 degrees (east) plus or minus a degree (Eighmy:1990 pers. com.).

Other authorities argue that because Coronado's small group had Indian guides, there was no real reason to use their compass. However, given the Turk's apparent treachery and the vast expanses of llano where it was easy to become lost, it is likely that Coronado's group was using both Indian guides and a sea compass to ascertain their general location.³⁶

Wagstaff's suggested route northward to Quivira (1966:149) is based upon "reversal of calls from a known point," (i.e. the Great Bend of the Arkansas River). However, he mistakenly placed Great Bend

³⁶The early Spanish travelers were accustomed to navigating on the sea (Polzer 1991).

near Ford, Kansas. Quoting the translation that reads "north by the needle," Wagstaff backtracked the route due south from the Arkansas River ford to the Concho River area in Texas.

Wagstaff used Van Bemmelen's chart of magnetic declination for A.D. 1600 to justify his route. Wagstaff states that magnetic declination in 1541 was approximately 0 degrees, indicating that Coronado's party went due north (both magnetic and true north) from the second barranca (the valley of the Elm Fork of the Brazos River west of Buffalo Gap) to reach Kansas.

Wagstaff (1966:166) also argued that the road to Quivira had to cross the rough Red Rolling Plains east of the cap rock, rather than continuing across the llano, because of the Indians' statement that the Spaniards "would not find any good road thither [to Quivira]." This is a tenuous argument, based on an ambiguous statement.

Peterson (1988:30) suggests the Spaniards followed a generally northeast direction towards Kansas. However, his direction of travel is based on a 10 to 12 degree magnetic declination from true north, a figure that is probably not valid for the 1500s. Also, Peterson did not closely consider travel times and distances.

Bolton (1990:286) also failed to acknowledge possible changes in declination, using an 1830-1929 table of magnetic declination (assuming 11 degrees declination) to support his proposed route to Quivira.

In an analysis of Schroeder's route, Blakeslee (1990:2) suggests that the part of the Cimarron Valley where Schroeder places the second barranca is "a wide, gentle valley with none of the characteristics that one would expect of a 'barranca.'" Schroeder does not separate out differing rates of travel for the army and the small detachment, but attempts to reconcile their figures. The

distance from Schroeder's "last barranca" on the Cimarron River (near the Kansas-Oklahoma border) to the crossing of the Arkansas River is a stretch of less than 100 miles. According to Coronado, this same stretch took 30 days to cross--about 3.3 miles a day for a group that had been averaging at least three times that rate.

Donoghue (1929 and 1936) also downplayed or ignored crucial measures of time and distance, and equated selected geological landmarks in Texas with those described in the Spanish narratives. Because some stream crossings are not specifically mentioned in the sketchy chronicles, Donoghue assumed the Spanish did not cross these rivers. He cites the Spaniards statement that the country is level as far as Quivira to assert that Quivira was on the edge of the Llano Estacado, perhaps forgetting the vast plains of Kansas and northern Oklahoma. Donoghue ignored archeological and ethnographic evidence that helps identify the large Wichita settlements Coronado encountered in Quivira.

After the small detachment left Cona, it probably marched fairly slowly towards Quivira. Jaramillo, who had accompanied Coronado, remarked that the marches were short days because of the availability of water. This would imply a march of perhaps 8 to 10 miles a day, a reasonable rate by this time in the exploration, considering the condition of the men and the horses. According to the *Relación del Suceso* (1940:291), the army suffered "great hardships" during the return to the Rio Grande because the group had nothing to eat but meat, and it was necessary for them to hunt on a daily basis. The horses also fared very badly without any corn.

Both Jaramillo and the *Relación del Suceso* indicated that the troop marched for 30 days toward the north until the Quiviran River (the Arkansas River) was reached. The group stopped there to celebrate mass.

After crossing the river, the march turned downriver to the northeast (Jaramillo 1990:209). Three days after the crossing, Coronado and his men sighted the first of the Quivirans, a hunting party in search of bison. Their village, possibly one of the more westerly settlements of the large Quiviran nation, was said to be three or four days beyond, perhaps 30 to 40 miles. Upon reaching this village, the Spaniards found that there were at least six or seven more Quiviran settlements along the fertile stream courses, with uninhabited areas between the villages. The Spaniards traveled among the villages for four or five days.

A number of authors suggest that these Quiviran villages extended into northern Kansas or south central Nebraska (see above). Richey, Dunbar, and Brewer all propose that Quivira was centered near Junction City, Kansas, while Savage thought Quivira was in southern Nebraska. These authors drew their conclusions from several sources. Descriptions of the landscape and the plants and animals found in the Spanish narratives seemed to compare favorably with the terrain in northern Kansas and southern Nebraska. Both Savage and Richey analyzed area vegetation in support of their respective proposals. Savage's proposed route was based mainly on a comparison of Nebraska soils and vegetation with the descriptions of Quivira in the narratives, but he failed to consider other crucial factors. Richey's descriptions of vegetation in Kansas appear accurate for the nineteenth and twentieth centuries, but are probably not applicable for the 1540s. Local boosterism also seems to have influenced Richey's choice of topographic landmarks, like it did for Savage and some other authors.

Although author James Simpson was a military man who had traversed much of the west, his proposed route (which came into Kansas from the west, along the Arkansas River) apparently failed to take area topography and vegetation into account. The route does not correlate with Spanish descriptions of the terrain, nor with estimated mileage and time figures.

Several authors were also influenced by statements in the Spanish narratives that give the latitude of the Quiviran villages at 40 degrees and the Arkansas River at 36 degrees (Relación del Suceso 1940:292) In his discussion of the Wichita (Quivira) settlements, Wagstaff (1966:156) endorses these locations, and states that the generally accepted location of Quivira is between the 39th and 40th parallels.

However, it should be kept in mind that even though these explorers used compasses and calculated latitude and longitude, their methods and instruments were crude by today's standards. Their estimates were subject to a fairly wide margin of error as is shown in 16th century maps of the American continent. For example, the author of the Relación del Suceso stated that Cíbola was at almost 37 degrees, but it is actually around 35 degrees latitude. Narrative statements regarding latitude and longitude must therefore be evaluated carefully before being accepted as fact.

Several authors based the location of Quivira upon early archeological findings. However, later archeological work has refined and corrected many of Richey, Dunbar, and Brower's notions about prehistoric peoples and the location of Quivira. Archeologists now recognize that the complex of Great Bend Aspect archeological sites that comprised the major Wichita settlements seen by Coronado are generally bounded by the Smoky Hill River on the north and the Big Bend of the Arkansas River on the south. Quivira extended eastward to include the Walnut River and the Cottonwood River around Marion. The Flint Hills formed its eastern periphery. To the west, Quiviran sites extended to the vicinity of Barton County, Kansas.

The Quiviran peoples Coronado encountered here were also aware of Quivira's geographical and cultural boundaries. Inquiring about the country ahead, Coronado was informed that "the plains came to

an end, and that down the river there were people who did not plant, but who lived by hunting" (Relación del Suceso 1940:291). Examination of the time and distance given in the Spanish narratives can also provide insights into the location of Quivira. The Relación del Suceso (1940:293) indicates that the settlement known as Quivira was 30 leagues (about 80 miles) from the river crossing, and that Coronado marched 25 leagues through this settlement.

Coronado (1940d:187) informed the King that the trip from Cona to the province of Quivira took 42 days from the time he left the army. At first glance this figure seems to contradict Jaramillo's statement (1990:209) that it took 30 days march to reach the Quiviran River. However, this apparent contradiction can be resolved if one considers all of the times mentioned by Jaramillo.³⁷

Thus the route appears to have generally gone north from the barrancas, entering what is now Kansas south of the Arkansas River. Moving north and east, the expedition crossed to the north bank of the Arkansas and continued downstream to the northeast, reaching the first of the Quiviran settlements somewhere between Great Bend and present-day Lyons, Kansas. The detachment reached the end of Quivira about the third week of August (Jaramillo 1896:590).

³⁷ It was 30 days from the barranca to the river where one day was spent at the crossing to celebrate the saints' day. Three days were spent travelling from the river to meet the Quiviran hunters, and another three to four days to the first village. It took four or five days to reach and explore the villages beyond. Adding these figures together totals between 41 and 43 days, close to Coronado's stated time.

THE ROUTE FROM QUIVIRA TO MEXICO: DISCUSSION OF SECONDARY SOURCES

Very little information is available on Coronado's return route from Quivira, although this "short" route almost certainly followed prehistoric Indian trails. The Miguel map of 1602 shows a north-south trail that ran from the Great Salt Plain in Oklahoma to the Arkansas River, then northeast to Tancoa--a village that was "presumably one of the Quiviran settlements visited by Coronado in the vicinity of Lyons, Kansas" (Blakeslee 1988:4-5).

Bolton (1990:306) wrote that Coronado and his group backtracked along the Arkansas River, recrossing it near Ford. Bolton believed that Coronado's Indian guides led the group through the Oklahoma and Texas panhandles until the group again reached the Querecho settlements on the Canadian River. Parts of this route are similar to that now followed by the Chicago, Rock Island, and El Paso Railway (Bolton 1949:307). Like most other authors, Bolton assumed the return trip to Mexico from Cibola was over the now well-known trail.

Authors like Hodge and Schroeder agree with Bolton's proposed return route. Udall discussed various trail options, but mapped a return trail to the Rio Grande somewhat to the northwest of Bolton's route.

Other scholars like Day and Winship proposed a route that would later become the Santa Fe Trail. Day (1964:255) stated that the return trip crossed the Arkansas below modern Fort Dodge, following an

old and well-known trade route between Quivira and Pueblo Land, following the Cimarron River upstream and cutting across the northwest corner of Oklahoma.

David Donoghue (1929:77-90) thought that Coronado's hand-picked detachment found the Quiviran settlements along the tributaries of Wolf Creek and the Canadian River. Consequently, he believed the

return trip was a straightforward march to the southwest, recrossing the Pecos River near Santa Rosa.

THE ROUTE FROM QUIVIRA TO MEXICO: ANALYSIS

Leaving Quivira sometime during the middle or end of August, the Spaniards returned to the crossing of the St. Peter and Paul River. Then, turning to their right, they set out on a direct route across the plains until they reached familiar terrain. Several Coronado experts contend that the detachment reached the actual site of the Querecho encampment, some 10 days travel beyond the river crossing (Harper 1991). Others suggest that Coronado's party merely recognized the region or the country as being part of the larger river drainage (i.e. the Canadian River) that they had followed out onto the plains. Perhaps the Spaniards were once again in broken, rolling country where the mesas and vast plains of New Mexico were now visible.

Part of the confusion over the return route is due to the ambiguity of the translations at this point. Winship translated Jaramillo's narrative (1990:211) as follows:

Thus they brought us back by the same road as far as where I said before that we came to a river called Saint Peter and Paul's, and here we left that by which we had come, and, taking the right hand, they led us along by watering places and among cows....At last we came to where we recognized the country, where I said we found the first settlement, where the Turk led us astray from the route we should have followed.

Hammond and Rey translate this passage (Jaramillo 1940:305-306) as:

Finally we came to the region, and recognized it, where, as I said at the beginning, we had found the rancheria where the Turk took us away from the route we should have followed.

If Coronado actually returned to the site of the Querecho encampment, it would indicate that the expedition moved southward somewhere along the New Mexico-Oklahoma-Texas line to perhaps the

vicinity of Tucumcari before heading west into Pecos. This would be a less than direct route to Pecos, travelling through broken country, but would place the group along the Canadian River on familiar terrain.

Alternately, if the Spaniards were led along old trade trails that extended between Pecos and the Arkansas River valley, their route could have traversed what eventually become the Santa Fe Trail. The Cimarron Cut-off of the Santa Fe Trail ran almost diagonally from the far southwestern corner of Kansas, through the corner of the Oklahoma Panhandle, to Watrous, New Mexico, before bending southward. This route would have crossed the Canadian River in the vicinity of Mills, New Mexico.

The detachment subsequently reunited with the army, and the entire group was in Tiguex by October 20, 1541, when Coronado wrote his report to Mendoza (Coronado 1940d).³⁸ After spending a second cold, snowy winter in the Rio Grande valley, Coronado and his army left to return to Mexico in the early part of April, 1542 (Castañeda 1940:270). In the 10 days it took to reach Cíbola, the force lost over 30 horses. When the army reached Cíbola, it reassembled for the long march through the despoblado. For two or three days the army's rear guard was followed by the Indians who hoped to recover Indian servants and baggage. Castañeda (1940:272) notes that the "despoblado was traversed without incident." Reinforcements from New Spain were met on the second day out of Chichilticalli, and the entire group continued southward towards Mexico. The Indians of the region surrounding Corazones were in revolt, and attacked the Spaniards several times. The attacks continued until the army arrived at Batuco, thought by Hodge to be an Opata settlement on the Rio Moctezuma (about 22 miles east of Ures, possible the site of the first Corazones) (Hammond and Rey

³⁸ Winship (1990:91) indicates that the date of the letter was October 2, 1541.

1940:273 fn. 1). Coronado finally reached Mexico sometime late in the autumn of 1542 (Winship 1990:91).

CHAPTER 5: SUMMARY AND RECOMMENDATIONS

SUMMARY

No significant new information was produced by this history study. Only a few sites met the criteria defined at the beginning of the study, and the majority of those sites could not be unequivocally attributed to Coronado's expedition. Several factors were responsible for these findings. Descriptions of rivers and landforms in the Spanish narratives are vague and contradictory, and could be applied equally to any number of features across a broad geographic area. Two of the major authors, Jaramillo and Castañeda, wrote about the entrada long after its occurrence. Vague and conflicting statements in their texts may reflect the blurring of memory by time. Inaccurate translations and changes in the meaning of words over the past four centuries have further obscured the clarity of the original narratives.

Almost uniformly, the archeological data in the site forms were too vague to identify sites associated with the Coronado expedition. For example, descriptions of contact period sites may list metal or Pueblo pottery among the artifacts, but in virtually all cases studied there were no descriptions of the type of material, its shape, age, or technology. Without specific descriptions, a piece of chain mail cannot be distinguished from a rusty twentieth century artifact. Because these artifacts are stored in numerous different public institutions or are held by private individuals, months of research would be needed to locate these artifacts and to verify details.

Many of the site forms are 20 or 30 years old, and the chain of ownership of the artifacts is tenuous. Artifacts were kept by collectors or local property owners, especially in the Great

Plains. Many of the owners are no longer living or have moved out of the area.

Of the numerous Spanish artifacts found throughout the Southwest and the Plains, there is a notable lack of provenience. These objects were often donated to a museum or exhibited in a local facility as long ago as the 1930s, and the only information on their source is a county or a ranch name.

Some items were also obviously mislabeled. For example, in several instances crossbow bolts were identified as pens or as metal arrow points, both dating to a later period. Many early-day archeologists viewed metal as intrusive in prehistoric sites and did not consider the metal artifacts of any value.

Although most of the sites examined in this study could not be attributed to Coronado, analysis of historical and archeological evidence provides a high degree of confidence that Coronado's group was at Hawikku (Cíbola) and Pecos (Cicuye). Artifacts found at these pueblos in association with sixteenth century American Indian artifacts and features correlate strongly with narrative descriptions of the battles fought here. However, it should be noted that the metal items found at Hawikku were not mentioned in published archeological reports. Metal objects in the Hawikku collection in New York that closely resemble crossbow bolts have never been catalogued as such. Only recently have the beads found at Hawikku been identified as belonging to this time period.

LA54147, an unnamed site near Bernalillo, New Mexico, appears to be the only documented example of a sixteenth century Spanish expeditionary campsite in the Southwest. Some authors suggest this site may have been Coronado's winter camp (Vierra 1990). It consists of shallow dugouts, probably for tents or brush shelters, with both interior and exterior hearths. The dugouts were filled with soil mixed with burned corn, beans, and bones (i.e., game,

birds, and domesticated sheep), potsherds, bits of charcoal, ground stone, burned adobe, and metal artifacts including nails, clothing attachments, and armor. A Mesoamerican blade fragment of Pachuca obsidian from the Valley of Mexico was also found here. Dateable ceramics give a possible range of about 1525 to 1625 (Vierra 1990).

In support of his suggestion that this encampment may have been connected with the Coronado expedition, Vierra (1990) points out that of the seven sixteenth century Spanish entradas that passed through the area, only Coronado and Oñate brought along domesticated animals. A fair amount of time and energy was invested in establishing these campsites. From the amount of trash deposited and from the interior hearths, it appears the camp was occupied in cold weather for a fairly long period of time. Crossbow bolts were found here. The use of the crossbow has been documented for the Coronado entrada, but it is unknown whether or not Oñate or other later Spanish entradas also used the crossbow. Also, Oñate camped along the Rio Grande for a very short time in the summer.

The Great Bend Aspect sites in Kansas that contain chain mail, trade beads, rolled copper, and other indicators of Euro-American presence "fit" nicely with narrative descriptions. Most archeologists agree that Coronado and his small detachment reached Quivira somewhere in the area occupied by the Great Bend Aspect sites. However, some of the artifacts (especially the chain mail) may also have come from Humaña's later abortive and little known expedition in 1595. These items may also have been traded or transported many miles by the Quiviran Indians. For these reasons, scholars are reluctant to designate specific Kansas sites as Coronado expeditionary sites.

Other sites in the five states have less conclusive evidence. For example, a number of sites along the Rio Grande once contained crossbow bolts, pieces of metal armor or chain mail, Spanish ceramics, and Glaze E pottery. Unfortunately, most were dug before

good stratigraphic controls were understood, and there is virtually no way at present to determine which entrada left the items behind. Some sites in the Texas Panhandle had metal, late Puebloan pottery, trade beads, or other contact period artifacts in association with American Indian materials, suggesting contact with other areas. There are numerous sixteenth century sites in Oklahoma, Texas, and Arizona that generally lie within the expedition corridor and that show strong similarities to sites described in the original narratives. However, none of the sites in these states offer unequivocal archeological or historical evidence of the expedition's presence.

RECOMMENDATIONS

Additional research is recommended to gain new information about Coronado's entrada. First, new translations of the narratives might clarify identification of cultural groups and topographic features, and correct errors in time, distance, and direction. Cooperative efforts with Mexico to identify sites and artifacts related to the entrada should be sought. Reevaluation of detailed studies made by scholars like Bandelier and Di Peso should be done.

Extensive archeological investigations are needed to identify sites that may have been associated with the entrada. These investigations should focus on feasible sites identified by the scientific community. This should be a joint effort among archeologists, historians, cultural geographers, ethnographers, Indian tribes, and others whose knowledge can make an important contribution to identification of potential sites.

The provenience and dates for possible Coronado artifacts should be established. This could help identify sites related to the expedition. Combined technical and historical analysis might give scholars better dating for those artifacts now in museums.

Important sites identified in this study should be evaluated as part of a national historic landmark theme study to determine their national significance.

The oral history of Indian tribes should be investigated for information on the entrada, and to enrich and verify the early accounts. Information drawn from published ethnographic accounts and from interviews with tribal historians could provide invaluable information on the entrada from the tribes' very special perspective.

The following is a brief listing of sites where additional work is suggested. It should be kept in mind that this list is a compilation of suggestions made by the various Coronado experts contacted during this research project. It is not meant in any way to be a definitive listing of "Coronado" sites. In compiling this list, no attempt was made to further evaluate these recommendations on the basis of site condition, previous studies, or cultural affiliations. Some of the listed sites have been excavated and little further information can be obtained from the sites themselves. In such cases, re-analysis of the collections and reports from the site may provide additional information.

A list of possible Coronado artifacts was included in an earlier draft of this report, but has been omitted in the final document because of the inconsistency of the available data. Further information on sixteenth century artifacts and those suspected to be associated with the 1540s entrada can be obtained from the major universities, museums, and historical societies in the five states covered by this research project.

Recent research has disavowed some sites and artifacts once thought to have been associated with Coronado. These sites and artifacts are also listed below.

SITES RECOMMENDED FOR FURTHER STUDY

Arizona

- San Pedro Valley sites including Quiburi, Babocamari, Alder Wash, and Keelsburg Canyon sites near Reddington
- Aravaipa District (from I-10 to Eagle Pass), including the Haby Ranch and 76 Ranch sites
- Slaughter Ranch sites, San Bernardino Valley
- Santa Cruz de Gaybanipita
- Trail along Zuni River
- Kinishiba on the Fort Apache Indian Reservation
- Paloperado Ruin
- Safford Valley sites
- Trail over Natanes Rim
- Hough's pueblo site no. 14 near old Camp Grant on the Aravaipa
- Little Colorado River canyon near St. Johns (16th century glass beads found here)
- University Indian Ruin

Arizona discredited sites and artifacts

- Marcos inscription, South Mountain, Phoenix
- "Tucson Treasures" from Nine-Mile Water Hole

New Mexico

- Pecos Pueblo
- Hawikku
- LA54147 near Bernalillo
- LA326 Santiago Pueblo
- LA728
- LA54147 near Bernalillo
- Kwakina
- Hawikku
- Kuaua
- Kechipwa
- Matsaki
- Kiakima
- Zia Pueblo
- Halona
- LA421, Alameda School
- LA81, Be-Jui Tu-ay
- LA951, Los Lentos Pueblo
- LA717, Pueblo Casa Colorada
- Pueblo Corrales
- Pueblo Los Trujillos
- Valencia Pueblo
- Galisteo Pueblos
- Trail along Zuni River

- Pottery Mound site
- Puerta de Luna bridge
- Rock art near La Junta Puerco bridge crossing
- Sixteenth century sites along the Rio Grande containing metal artifacts
- Cañon Blanco
- Anton Chico Pecos River crossing area
- La Junta crossing of Pecos
- Comanche Springs

Texas

- Silver Lake site, WTSU no. 59
- 5th Green site in Randall County
- 41HF24 and 41HF87 Tierra Blanca complex sites, confluence of Horse Creek and Palo Duro Creek.
- Floydada Country Club site, Floyd County
- Site at mouth of South Cita Canyon
- Tierra Blanca site, WTSU no. A264
- Site at junction/narrows Tule Canyon and Prairie Dog Fork
- WTSU no. A1139, Deaf Smith County
- WTSU site A59 west of Canyon, Randall Co.
- Indian trail over caprock NW of Vega [Old Tenascosa Ford]
- Palo Duro Canyon system
- Quitaque Canyon sites with glaze pottery
- Regional rock art sites with crosses, especially Cerrita de la Cruz (on a tributary of the Canadian River)
- Tierra Blanca and Garza complex sites in the Texas Panhandle

Oklahoma

- Inscription Rock, Black Mesa area of the Oklahoma Panhandle, Cimarron County

Kansas

- Paint Creek site (14MP1), SW of Linsborg on Smoky Hill River
- Major site (14RC2) Rice County
- Tobias site (14RC8) Rice County
- C.F. Thompson (14RC9) Rice County
- Paul Thompson (14RC12) Rice County
- Kermit Hayes no. 2 (14RC13) Rice County
- Saxman (14RC301) Rice County
- Sharps Creek site (14MP301) McPherson County
- Mem site (14MN328) Marion County
- Malone site (14RC5) Rice County
- Kermit Hayes No. 1 (14RC3) Rice County
- Large Wichita sites in Cowley County

Kansas discredited sites and artifacts

- Spanish sword (Juan Gallego) found near the headwaters of Pawnee Creek in northern Finney county
- Carved Coronado signature found on limestone rocks, dry bed of Cimarron in the vicinity of Middle Spring and Point of Rocks
- Coronado marker (carvings on stone) found near Atchison, Kansas (Oak Mills, Kansas)

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--Relación del suceso de la jornada que Francisco Vazquez hizo en el descubrimiento de Cíbola, ano de 1531.

--Ynformacion de los meritos y servicios de Pedro Geronimo uno de los que salieron a descubrir nuevas tierras el ano de 1539 con Francisco Vazquez de Coronado, 1542.

--Probanza de los meritos y servicios de Juan de Zaldivar en al Nueva Galicia, 1556.

--Ynformacion de los servicios hechos por Cristobal Mendez con el Governador D. Cristobal de Oñate y con el Capitan Francisco Velazquez (sic) Coronado, en la conquista del golfo de la Valenzuela (sic), Cíbola y Jalisco a su costa con armas y caballo por los anos ed 1538, en las que recibio varias heridas, 1560.

--Probanza de los meritos y servicios de Juan de Cepedes en el descubrimiento y conquista de la tierra nueva de Cíbola a donde fue con el adelantado Francisco Vazquez Coronado, 1568.

--Ynformacion de los meritos y servicios de Francisco de Santillana y Pedro de Santillana su hijo en la conquista de la tierra nueva y siete ciudades de Cíbola con el General Francisco Vazquez Coronado, 1588.

--Ynformacion de los meritos y servicios de Garcia Rodriguez uno de los conquistadores de las siete ciudades de Cíbola y uno de los primeros pobladores de Mexico, 1617.

--Ynformacion de los servicios de Diego de Madrid Avendano uno de los primeros pobladores de Mexico y conquistador de Cíbola, 1618.

--Don Francisco Pacheco de Cordova y Bocanegra pide diez mil pesos de minas de renta perpetuas en Yndios vagos, o que primero vacaren o en otras situaciones y que se incluyen en estos la Encomienda de los Pueblos de Acambro que posee en tercera vida, 1605.

--Testimonio en relacion de la gente, armas y municiones que salio de Compostela en N.E. que se lleva a la tierra nuevamente descubierta pro el Fr. Marcos de Niza, cuyo General fue Francisco Vazquez de Coronado, 1540.

--Carta al emparador de Antonio de Mendoza, Virrey de Nueva Espana, Jacona, 17 de abril de 1540.

--Carta al Emperador de Francisco Vazquez de Coronado, Tiguex, 20 de octubre de 1541.

--Autos sobre los bienes de Juan Ximenez, natural de Guadalcanal, fallecido en Tiguex, en 17 de febrero en la expedition de Francisco Vazquez de Coronado.

--Juicio de residencia del Lit. Lorenzo Tejada, oidor de Mexico, por provision de Valladolid, 7 de septiembre de 1542, a Francisco Vazquez de Coronado, Gobernador de Nueva Galicia y sus oficiales.

APPENDIX A: NEW MEXICO AND KANSAS SITES OCCUPIED DURING THE 1500S

The following listing is limited to the pueblo sites in New Mexico and the Great Bend Aspect sites in Kansas known to have been occupied.

WESTERN NEW MEXICO (ZUNI SITES)

LA37, Hawikuh (Zuni vicinity, Cibola County) - Hawikuh is on a low mesa stretching into the Ojo Caliente Valley, overlooking the junction of the Zuni River with Plumasano Wash. This large, irregularly shaped, masonry pueblo contained perhaps as many as 800 rooms set in tiers down the slope, making it look as if there were six or more stories. Zuni peoples may have occupied this site as early as A.D. 1400.

A Spanish mission was established at Hawikuh in 1629. A church and friary built there, but the priests were killed soon after. Rebuilt and staffed by 1672, the church at Hawikuh and the pueblo itself were abandoned after 1680. Most of the pueblo and mission were excavated by Frederick Webb Hodge in 1925. Today the site is a huge rock rubble mound. Low sandstone rock walls outline the foundations and rooms of the pueblo, and eroded adobe mounds remain from the 17th century mission church and convento. Hawikuh was designated an NHL in 1960, and is included in the National Historic Landmark documentation nomination for the Zuni-Cibola complex.

LA8758, Kechipaun (Zuni vicinity, Cibola County) - In Zuni, Kechipaun means "gypsum place," from the whitish rock on which the pueblo was built. This pueblo, a short distance east of Hawikuh, overlooks the agricultural lands in the Ojo Caliente Valley. The total number of rooms is estimated at anywhere from 150 to 824, and the room blocks form two or three plazas in a complex shape. A small, continuous nave, 17th century mission church (a visita of La Purisima Concepcion), and an associated convent of about five rooms

occupied the eastern part of the site. Kechipaun may have been occupied from about A.D. 1425, but slab-type houses, perhaps representing 8th or 9th century occupation, have also been found near the pueblo. Today only ruins of this large pueblo and mission complex remain. Kechipaun was designated an NHL in 1974, and is included in the National Historic Landmark designation for the Zuni-Cibola complex.

LA1053, Kwakina (Zuni vicinity, McKinley County) - Several mounds and a few scattered ceramic sherds on a ridge overlooking the Zuni River valley less than 10 miles beyond Hawikuh mark the site of Kwakina. Little is known about this "town of the entrance place," but it is suggested that the room blocks were a single story, contained perhaps 186 rooms, and were probably occupied after A.D. 1400.

LA9093, Halona (Zuni, McKinley County) - Halona ("red ant place") is now known as Zuni Pueblo, and is the only one of the Cibola sites currently occupied. Modern portions of the pueblo (Halona:wa North) are on the north side of the river and the older pueblo (Halona:wa South), is on the south side. The contact period sites have been completely buried by later pueblo structures, although some of the prehistoric walls may have been used in the modern pueblo. Archeological excavations indicate the masonry pueblo village was of substantial size, perhaps 575 total rooms. Early occupations here probably postdated A.D. 1275 for Halona:wa South; Halona:wa North was possibly occupied ca. A.D. 1425.

After the pueblo revolt of 1680 and their subsequent retreat to defensible mesa tops, the Zuni peoples returned to Halona, and abandoned the other villages. The old mission of Zuni Pueblo, built in 1629, was burned in 1680 and rebuilt several times in succeeding centuries. This church contains striking murals of Zuni religious figures painted by renowned Zuni artist Alex Seowtewa. The pueblo is listed on the National Register.

LA27713, Matsaki (Zuni vicinity, McKinley County) - About 2 miles east of Halona are the rubble ruins of Matsaki, perhaps once the largest of the Zuni villages. Matsaki is situated on the top, sides, and base of a large knoll near the Zuni River. This pueblo may have been polygonal in shape, contained an estimated 901 rooms, and was occupied from ca. A.D. 1400.

LA492, Kiakima (Dowa Yalanne vicinity, McKinley County) - This "house of eagles" is situated on a steep hill at the base of the sacred Zuni mountain Dowa Yalanne. Set in a protected cove, the site is bounded on the north by steep cliffs, and overlooks a broad plain where two canyons open into the Zuni Valley. Now only piles of masonry rubble, Kiakima was probably made up of a single linear room block built along a ridge with another adjacent square room block surrounding a deep depression. Kiakima may have been only a single story in height with about 250 rooms, occupied after ca. A.D. 1400.

CENTRAL NEW MEXICO (ACOMA)

LA112, Acoma Pueblo (Acoma, Cibola County) - Acoma (Acuco) was first visited by the Coronado expedition members in 1541. Perched atop an isolated mesa rising 357 feet above the plains, this one to three story pueblo is about midway between Albuquerque and the continental divide. Acoma is one of the oldest continuously inhabited settlements in the United States, dating back at least a thousand years. Burned in 1599, this masonry pueblo was partially rebuilt in the 1600s and again after 1776, but is little altered from its prehistoric character. Between 1629 and 1641, the church of San Estevan was built along the southern edge of the pueblo by Fray Juan Ramirez. The church has been renovated several times over the succeeding centuries and still serves Acoma at festival time.

Most of the Acoma Indians live in outlying communities on pueblo lands but return to Acoma Pueblo for ceremonial functions. The

secretary of the interior designated this historic pueblo an NHL in 1960, and the church, a large impressive example of Spanish colonial architecture, was added to this listing in 1970.

CENTRAL NEW MEXICO (RIO GRANDE VALLEY SITES)

Many of the pueblos along the Rio Grande and its tributaries were named by Coronado's group, although occasionally American Indian names were retained. Unfortunately, this nomenclature was generally unknown or not used by later entradas. Consequently, correlation between archeological sites or existing pueblos and those Coronado visited is tenuous and controversial.

Coronado, accompanied by 30 soldiers, visited the province of Tutihaco, an area said to have eight villages. Schroeder (1990) identifies these villages as the following present-day archeological sites. None of these sites have been evaluated for their National Register eligibility.

Tutihaco

LA282, Unnamed (Socorro vicinity, Socorro County) - This unnamed pueblo ruin consists of house mounds thought to contain about 180 rooms surrounding an open rectangular plaza enclosing two kiva depressions. Middens and outlying rooms are nearby.

LA755, Las Canas Pueblo (Socorro vicinity, Socorro County) - Constructed of puddled-coursed adobe with a few masonry elements, this complex of room blocks had an estimated 200 rooms. Extensive looting and erosion have badly damaged the site.

LA768, Al Lado de las Canas Pueblo (Socorro vicinity, Socorro County) - A linear, eight-room masonry room block, a single large kiva, piles of masonry rubble, and a small cobblestone enclosure comprise this pueblo site.

LA283, El Barro Pueblo (Lemitar, Socorro County) - This small plaza pueblo, constructed of cobble stones and adobe (and possibly jacal), contained a single circular kiva. The site was completely destroyed by a gravel pit operation.

LA286, Alamillo Pueblo (Estancia Acomilla) (San Acacia vicinity, Socorro County) - This small Piro pueblo ruin showing Spanish architectural details consists of two "L" shaped house mounds around an open plaza, and a possible mission or chapel structure.

LA287, Cerro Indio Pueblo (Indian Hill Pueblo) (San Acacia vicinity, Socorro County - Another Rio Grande Valley Piro site occupied during this time (but not listed by Schroeder), this pueblo is situated on a butte overlooking the Rio Grande. It is a large, single plaza-type pueblo, with an estimated 117 rooms and with various courtyard enclosures. This complex is arranged in a roughly rectangular layout. A single kiva and a linear room block appear in the plaza, and another linear room block lies to the southwest. Several catchment areas occur nearby.

LA778, Pueblo San Francisco (LA778) (La Joya vicinity, Socorro County) - The ruins of Pueblo San Francisco consist of a cobble masonry house mound, pit structures, and an associated scatter of cultural debris.

LA774, Sevilleta Pueblo (La Joya vicinity, Socorro County) - Sevilleta supposedly was named for the famous Andalusian city. Abandoned early in the 17th century, this pueblo was resettled in the 1630s with a friary and church dedicated to St. Louis the Bishop being built here. This village was visited by a number of 16th and 17th century Spanish expeditions, and became a stopping point for travelers on the Camino Real. The mission was completely abandoned in 1680, and Spanish fleeing from the Pueblo Revolt sought refuge here as they moved south. The Spanish reoccupied the site in 1800, building a small village. Today the ruins consist of

nine masonry house blocks, three kivas and midden areas, a chapel, church, possible convento, and corral compound. The site retains a high degree of integrity and it appears highly significant. However, the site has not been evaluated for National Register eligibility.

Tiguex

As described in the Coronado expedition narratives, the province of Tiguex consisted of approximately 12 to 14 large villages within a few leagues of one another, about half on either side of the Rio Grande. This province represented the southern division of the Tiwa-speaking Pueblo Indians, an area that encompassed both sides of the Rio Grande from near present-day Los Lunas to the vicinity of modern Bernalillo. The following discussion includes major archeological pueblo sites known to have been occupied during the mid-1500s. The majority of these sites are listed on the State Register of Historic Places. Most of the sites not currently listed on the National Register of Historic Places are being evaluated under a proposed thematic nomination.

LA50249, Pueblo Casa Colorado (Turn vicinity, Valencia County) - This massive complex is the largest known pueblo ruin in the Southern Tiwa District, containing an estimated 500 ground floor rooms. Built of puddled adobe, the pueblo was probably multistoried. Abundant artifacts of a rich and varied nature suggest this site is one of the most important cultural properties in this area, and it is considered potentially eligible for the National Register.

LA951, Los Lentos Pueblo (Los Lunas vicinity, Valencia County) - This ruin site was probably an early component of nearby site LA81. A church and parking lot have been built over the pueblo ruins. Los Lentos was clearly a puddled-coursed adobe apartment complex, roughly triangular in shape, and probably did not contain more than 100 ground floor rooms. There appear to have been two distinct

occupations of the site: prehistorically and during the period 1540-1580, perhaps as late as 1629.

LA81, Be-jui Tu-ay (Los Lunas vicinity, Valencia County) - Originally this pueblo consisted of a large plaza and an adjacent rectangular house block (about 500 ground floor rooms), probably of puddled-coursed adobe. The pueblo was partially multistoried. Most of the site: has been destroyed by canal and levee construction, but the abundant artifacts suggest remnants of subsurface features. Be-jui Tu-ay is considered potentially eligible for the National Register.

LA953, Valencia Pueblo (vicinity of Peralta, Valencia County) - This pueblo ruin has been covered by a modern church and residences, but deeply buried structures may remain. The pueblo appears to have been a large, multistoried, puddled-coursed adobe apartment complex covering a total area of approximately 75 square meters. Valencia is considered potentially eligible for the National Register.

LA724, Isleta Pueblo (Albuquerque vicinity, Bernalillo County) - Isleta (meaning islet) comes from the location of the village (before the Rio Grande changed its course) on a delta or island between the bed of a mountain stream and the river. This village supposedly still stands on or very close to the site occupied when Coronado visited this area in 1540. A church and convent were erected about 1613. Prior to 1680, Isleta's population was swelled by refugees from other pueblos that had been attacked by Apaches. Spanish settlers took refuge from the Pueblo Revolt at Isleta. The pueblo was abandoned, reoccupied, and captured by Otermin, and the Indians were taken to El Paso and resettled there. Scattered Tigua families reassembled at the ruined village ca. 1709. There were subsequently joined by many others who had fled to Tusayan in Arizona. By 1944, the population of the pueblo had increased to

1,334 persons. This pueblo was added to the National Register in 1975.

LA274 Sandia Pueblo (Albuquerque vicinity, Sandoval County) - The Tigua Pueblo of Sandia (Spanish for watermelon) is the successor of one of the towns of the province of Tiguex of Coronado. This site was the Napeya of Oñate in 1598, and became the seat of the mission of San Francisco. In 1640, Sandia had an excellent church with a visita. At the time of the Pueblo revolt, tradition has it that many of Sandia's residents fled to the Hopi Mesas in Arizona. Otermin destroyed the pueblo in 1681, but it was rebuilt near its present site in 1748 by Fray Menchero. The mission's name was then changed from San Francisco to Nuestra Señora de los Dolores.

LA2265, Chamisal (Albuquerque, Bernalillo County) - This multicomponent site contains evidence of an Archaic campsite dating to ca. 720 B.C. overlaid by later occupations (A.D. 800 through 1650) and after 1820. Excavation of some of the ruins in 1979-1981 revealed a vertical series of room blocks, work areas, plazas, hearths, storage cists, adobe mixing pits, water channels, and burials. This pueblo may have been one of the large Tiwa pueblos discussed in Coronado's narratives, and is potentially eligible for the National Register as part of a proposed district (i.e., the Los Ranchas National Register District).

LA716, Pueblo Maigua (Alameda Vicinity, Bernalillo County). - Dissected by railroad construction, the low mounds of this pueblo site contain adobe and stone rubble and a few artifacts. The National Register status of this site has not been determined.

LA421, Alameda School Site (Alameda vicinity, Bernalillo County) - This privately owned site has been variously identified as San Mattheo, Puaray, or the Alameda Pueblo of 1680. In any case, LA421 was one of the historic Tiwa pueblos occupied into the historic period and probably into the early 1600s. The mounds marking the

site were hauled away for road fill, and today only a few potsherds mark its location. However, the site is considered potentially eligible for the National Register.

LA290, Alameda/Santa Catalina/Los Guajolotes (vicinity of Alameda, Bernalillo County) - LA290 has been variously identified as the Tiwa Pueblo of Alameda, Santa Catalina, or Los Guajolotes (Scurlock 1982:7). Remnants of this large multistoried pueblo, built of adobe and stone, lie buried beneath mounds of earth some distance from the Rio Grande. Severely damaged by vandals, the site's National Register eligibility has not been determined.

LA717, Possible Puaray Pueblo (Alameda, Bernalillo County) - Scholars disagree regarding the location and identification of the Puaray Pueblo, but most feel that Puaray is site LA717, located between present-day Sandia and Alameda. The site is privately owned and has been leveled. In 1931, it was described as a medium-sized pueblo of adobe and stone rubble, reduced to a mound about 8 feet high. Analysis of the site's ceramics indicate that the pueblo was occupied from at least A.D. 1350 until the 1600s. It was one of the most important early historic Tiwa pueblos and is considered potentially eligible for the National Register.

LA288, Pueblo Corrales, El Pueblito (Corrales vicinity, Sandoval County) - The large mound that comprises the privately owned site of Pueblo Corrales is buried beneath residences and farm structures, and surrounded by cultivated fields. (Pueblo Corrales is also known as El Pueblito. Schroeder (1990) identifies Pueblo Corrales as the Arenal of Coronado's documents.) It is likely that the site represents a coursed adobe apartment complex containing an estimated 200 ground floor rooms. Adobe walls can be seen in some areas of the mound. There is no evidence of a plaza. Comparisons with nearby Kuaua strongly suggest that this site may have painted kivas. Pueblo Corrales is directly opposite the present pueblo of Sandia and so may represent an ancestral "sister village" of

Sandia. There is little question that this site was occupied at the time of Coronado's entrada, and it probably persisted well into the 17th century. The Armijo hacienda was established on the mound at an undetermined time, and in the early 20th century it was occupied by Fernando Armijo. The Armijo residence was largely dismantled after 1930. This site is potentially eligible for the National Register.

LA326/LA728 Santiago Pueblo or Bandelier's Puaray (Bernalillo vicinity, Sandoval County) - Several researchers suggest that Santiago Pueblo was Coofer or Alcanfor, the pueblo where Coronado spent the winters of 1540 and 1541 (Vierra 1989:3). Others identify it as Culiacán, Puaray, Tiguex (Moho), or Kuaua (Scurlock 1982:7; Schroeder 1990:3). Santiago and the adjacent site LA728 are situated on a terrace overlooking the Rio Grande valley and the Sandia Mountains. This roughly square pueblo had an enclosed central plaza with a circular kiva. The plaza was surrounded by four room block wings separated by small passageways. Site ceramics suggest an occupation span from the 1400s to somewhere in the last half of the 1600s; the pueblo was no longer occupied in 1680.

Around 400 burials were found during the 1934-1935 excavations of the site. Artifacts included pre-and post-contact period items such as metal tools and armor. A skeleton found in the south wing of the pueblo had a crossbow bolt embedded in its chest. A separate Spanish structure, dating to the Spanish Colonial period, was southeast of the pueblo. Abandoned during the Pueblo Revolt, Santiago was reoccupied during the 18th century.

Site LA728, an isolated set of 15 graves set into an extensive sheet trash deposit, was partially excavated in 1968. The pueblo complex (sites LA 326 and 728) has been partially destroyed by a gravel pit and a manure dump, but the portions remaining are considered potentially eligible for the National Register.

LA54147, Unnamed Site (Bernalillo vicinity, Sandoval County) - This site was described earlier in this chapter. It is potentially eligible for the National Register.

LA187, Kuaua Pueblo (Bernalillo Vicinity, Sandoval County) - Kuaua, thought by some to be Tiguex or Moho, is located at Coronado State Monument. Kuaua was excavated in 1934-1936 in an attempt to determine whether or not Coronado wintered here in 1540-1541. This large pueblo had over 1,200 rooms, 3 plazas, and 7 kivas; its puddled adobe walls probably were several stories high. Kuaua was occupied from the 1300s to the early 1600s. This pueblo is best known for the frescoes painted on the walls of Kiva 3, in the south plaza. Kiva 3 postdates the Coronado expedition, having been built somewhere around 1600 and abandoned not long after. Kuaua may have been the pueblo besieged by Coronado's army in the winter of 1540-1541. This site is listed on the National Register.

LA325, 500, 501, and 502, Unnamed pueblo ruins complex (Bernalillo vicinity, Sandoval County) - First described in 1882, these sites were situated on the west bank of the Rio Grande some distance south of the ruins of Kuaua. Unfortunately, they have been obliterated by dumping and road construction. The ruins complex consisted of house mounds of adobe and rubble construction and enclosed plazas or courtyards.

LA384, Old Zia Pueblo (Zia, Sandoval County) - Chia or Old Zia was described by the Spaniards as a fine, large pueblo of over 1,000 two- and three-storied houses and eight plazas. Total population estimates in A.D. 1540 from range 5,000 to 20,000 for the original five Zian towns. However, by 1690 the population had dropped to less than 300. A mission and convent were built at Zia about 1610-1612. The Zians joined the Pueblo Revolt of 1680 but did not resist reestablishment of Spanish rule in 1681. In 1688, Zia strongly opposed the Spanish. A year later the pueblo was attacked and 70 Zians were taken into captivity. A new town was built near

Jemez by the survivors, but they soon returned to Zia. The old pueblo is surrounded by modern houses. Zia Pueblo is listed on the National Register.

NEW MEXICO (THE GALISTEO PUEBLOS)

The Coronado narratives describe a series of pueblos along the route between the Rio Grande Valley and Pecos. These pueblos are thought to have been the Galisteo Valley pueblos of San Cristobal, San Marcos, Galisteo Pueblo, and San Lazaro. The Galisteo complex retain a high degree of integrity because they have not been significantly disturbed by archeological excavation or vandalism.

LA80, San Cristobal (Galisteo vicinity, Santa Fe County) - San Cristobal was an active pueblo during the period of Spanish exploration and early settlement, and the Spanish supervised the construction of a 17th century mission there. The American Indians of San Cristobal were major participants in the Pueblo Revolt of 1680. Abandoned between 1692 and 1696, the pueblo was never reoccupied. Today the remains include defensive works and ruins of the mission and the pueblo.

LA98, San Marcos (Galisteo vicinity, Santa Fe County) - San Marcos is estimated to have been continuously occupied from about A.D. 1300 until it was abandoned during the Pueblo Revolt in 1680. A mission was established at the pueblo in the early 1600s, but the American Indians of San Marcos played a major role in the Pueblo Revolt. Mounds and wall remnants up to 6 feet high eroding out of the stream banks are the only remaining visible reminders of this site. This pueblo is on the National Register of Historic Places.

LA26, Galisteo Pueblo (Galisteo vicinity, Santa Fe County) - Galisteo Pueblo may be ever older than the other pueblo in this area, possibly beginning as early as the latter half of the 13th century. The site, tentatively identified as the Pueblo Ximena, was visited by the Coronado expedition in 1540. Renamed several

times, the pueblo was known as San Lucas when visited in 1590 by the Spaniard de Sosa, and as Santa Ana when Oñate called there in 1598 while establishing mission districts. A few years later its name was changed to Santa Cruz de Galisteo, and a church was built there. The residents of Galisteo participated in the Pueblo Revolt, moving to Santa Fe where they remained until 1692 when the Spanish returned. Shortly after the turn of the century, the pueblo (now known as Santa Maria) was reestablished with 90 Tano Indian residents. Disease and Comanche raids diminished the population, and the few remaining inhabitants moved to Santo Domingo in 1794. The site, consisting of eroded mounds, is listed on the National Register (state significance).

LA91 and 92, San Lazaro Pueblo (Galisteo, Santa Fe County) - The eastern portion of San Lazaro Pueblo (LA 91) lay abandoned at the time of the Coronado expedition to the area in 1540. The western part of the village (LA 92) continued in use during this time, only to be abandoned in the 1600s. The east ruin was reoccupied by the late 16th century, and the Spanish supervised construction of a chapel that was a visita of the mission at Pueblo San Marcos. The inhabitants participated in the Pueblo Revolt of 1680. Sometime between 1680 and 1692 they abandoned the village and moved to a new location near present-day Santa Cruz. The site today consists of a ruined wall and mounds, and depressions associated with two pueblos and a mission church. Part of the site is privately owned, while the rest is on Bureau of Land Management property. San Lazaro was designated an NHL in 1964.

KANSAS (THE GREAT BEND ASPECT SITES)

14RC5, Malone site (Lyons vicinity, Rice County) - This Great Bend Aspect site, consisting of mounds and clustered depressions, has been impacted by soil conservation and cultivation activities. Southwestern ceramics dating between 1450 and 1700 were found here, as was a unique pipe, possibly from the Pecos area. The National

Museum conducted limited tests at Malone in the 1940s. This site was placed on the National Register in 1972.

14RC301, Saxman site (Saxman vicinity, Rice County) - This large village site of the Great Bend Aspect contained numerous grass-covered lodges and associated storage pits with numerous artifacts, including various Southwestern ceramics dating between the 14th and 18th centuries. On at least two occasions, fragments of European chain mail were found in storage pits in direct association with Great Bend Aspect materials. This site was added to the National Register in 1976. Now totally under cultivation, the site has been extensively dug by collectors.

14RC2, Majors site (Lyons vicinity, Rice County) - The Majors site is on a low ridge near the Little Arkansas River. Cultivation has leveled the small mounds that marked the site. Several examples of chain mail were recovered from this Great Bend Aspect site by a local collector. Portions of the site excavated by the University of Kansas yielded glazed ceramics from the Rio Grande area, and may allow determination of a cultural chronology within the Great Bend Aspect.

14RC3, Kermit Hayes Site No. 1 (Lyons vicinity, Rice County) - Present-day agricultural activities have impacted much of this site, which consists of low mounds on a long ridge. Chain mail, a grooved maul, and other unique artifacts were found here by the land owner.

14RC8, Tobias site (Lyons vicinity, Rice County) - One of the most important proto-historic sites in Kansas, the Tobias site contained numerous low inconspicuous mounds and small depressions marking the locations of subterranean cache pits. The arrangement of these features creates the council circles, which are described as forming an aiming point for the solstice. Ceramics found at Tobias include various glazed sherds from the Southwest dating from the

13th through 17th centuries. Metal objects of Euro-American manufacture include rolled tubular copper or brass beads, a double-pointed awl, and an ax blade. Blue glass beads and a necklace of glass, turquoise, and bone were also found here.

Selected areas of the site were excavated by the Smithsonian and the Kansas State Historical Society. The state of Kansas purchased the Tobias site in 1981. The overall plan for this site includes construction of interpretive and research centers while keeping the site as a scientific preserve.

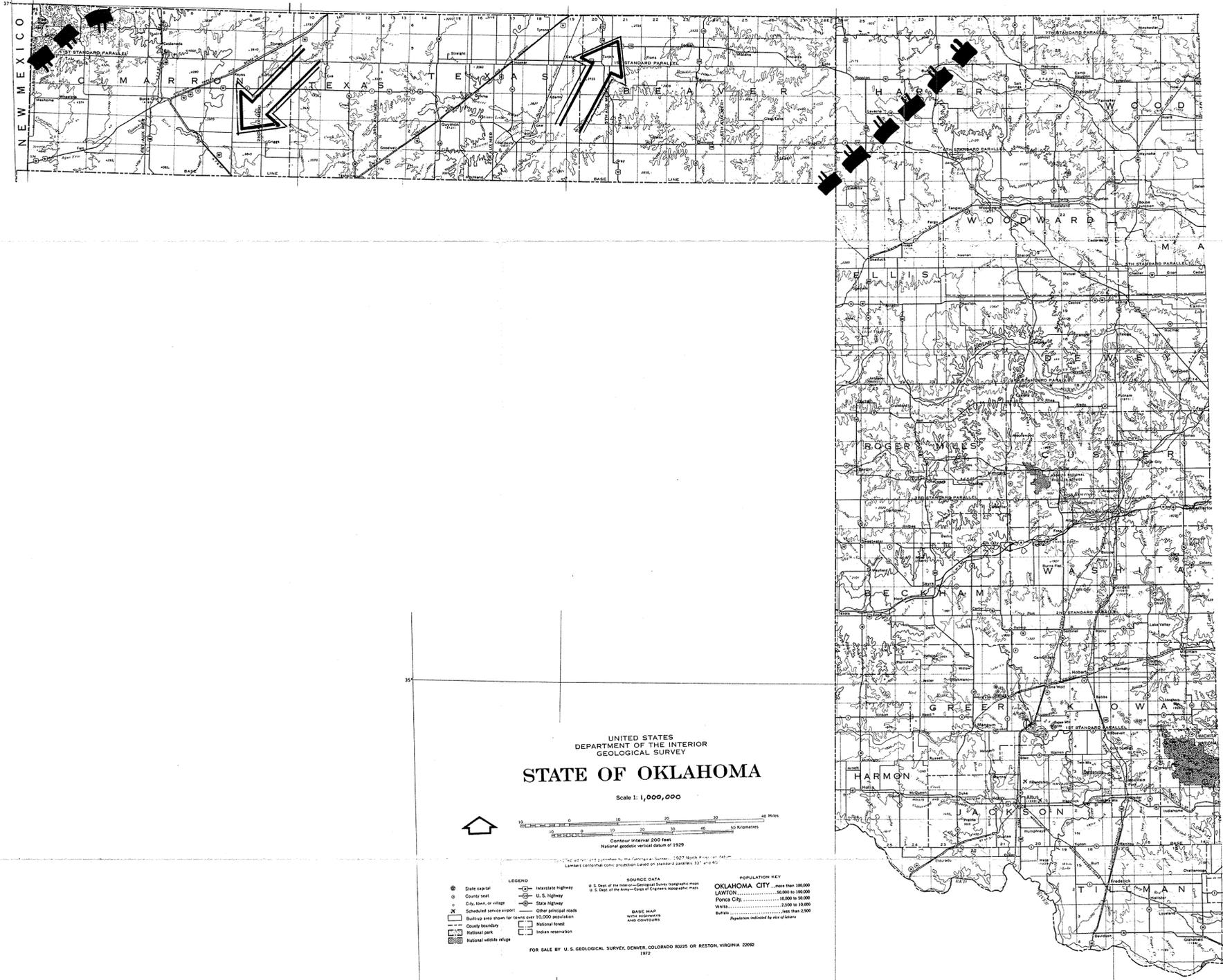
14RC9 and 14RC12, the C.F. and Paul Thompson sites (Lyons vicinity, Rice County) - Refuse mounds and cache pits at the C.F. Thompson site were excavated by Smithsonian researchers, who located glazed Southwestern ceramics of the A.D. 1475-1650 period, incised puebloan pipes, and iron chain-mail fragments in direct association with aboriginal remains. A council circle was excavated at the Paul Thompson site by the Smithsonian in 1967. Next to the Tobias site, the Paul Thompson site remains the largest preserved site in the Lyons vicinity. Portions of both sites are still in uncultivated pasture land. Despite disturbance by collectors, these sites retain the potential to yield a great deal of scientific information.

14RC13, Kermit Hayes no. 2 (Lyons vicinity, Rice County) - Although all surface features have been erased by cultivation, this site originally contained one of the largest and most perplexing circles found in the Great Bend Aspect sites. Burials were found here as well.

14RC14, Taylor site (Lyons vicinity, Rice County) - Now in pasture land, this village site was completely cultivated and agriculturally terraced, a process that eradicated surface features. The 30-acre site is situated on the high ground of a ridge paralleling a floodplain, and may be an extension of 14RC3.

14MP1, Paint Creek Site (Linsborg vicinity, McPherson County) -
J.A. Udden found chain-mail armor and glass trade beads at the Paint Creek site in 1881. This site was originally described as 22 low mounds littered with potsherds and lithic debris. Covering an area of about 30 acres, the site also includes a council circle. Sixteenth century Southwestern potsherds have been found at Paint Creek. Some formal excavation was done in the mid-1930s by the Nebraska State Historical Society. Paint Creek has had extensive surface gathering and digging by collectors.

14MP301, Sharps Creek Site (Lindsborg Vicinity, McPherson County) -
One of the northernmost and biggest of the Great Bend Aspect sites, the Sharps Creek site is noted for its large ceremonial circle. This relatively undisturbed site has great potential for yielding important information.



Arrows indicate general direction of travel.



ZONE OF UNCERTAINTY

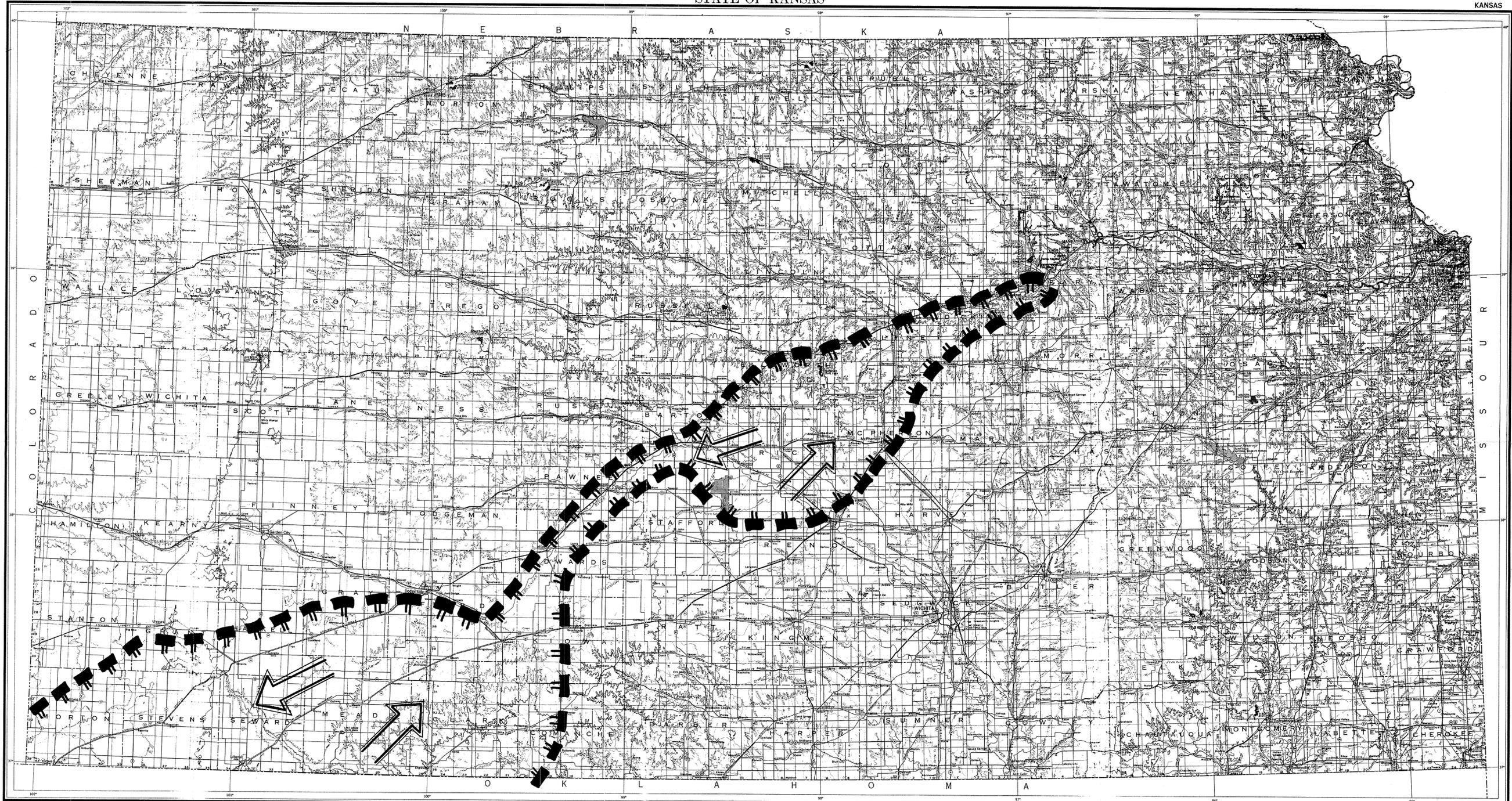
CORONADO EXPEDITION AREA: OKLAHOMA

CORONADO NATIONAL TRAIL STUDY

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DSC/AUGUST 1991/NTCORT - 20,008

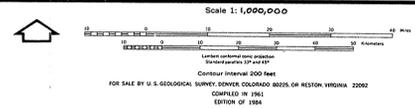
ON MICROFILM



Original source, and published by the Geological Survey
1927 North American edition
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SOURCE DATA
U.S. Dept. of the Interior, Geological Survey, 1927
U.S. Dept. of the Interior, Geological Survey, 1927
U.S. Dept. of the Interior, Geological Survey, 1927

BASE MAP
WITH MODIFICATIONS
AND CORRECTIONS



- LEGEND
- State capital
 - County seat
 - City, town, or village
 - ▭ Subdivided survey parcel
 - ▨ Park or recreation area
 - ▧ Forest
 - Interstate highway
 - State highway
 - Other highway
 - Interstate
 - National wildlife refuge
 - Military, Indian, or other reservation

POPULATION KEY

WICHITA	more than 100,000
SALINA	25,000 to 100,000
Independence	5,000 to 25,000
Other	2,500 to 5,000
Unincorporated	less than 2,500

Population estimated for year of 1980

KANSAS
39095-A6-ST-500

Arrows indicate general direction of travel.



ZONE OF UNCERTAINTY

CORONADO EXPEDITION AREA: KANSAS

CORONADO NATIONAL TRAIL STUDY

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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