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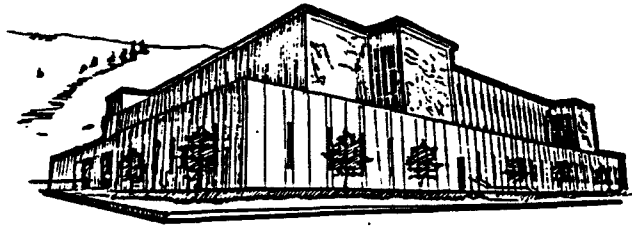
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Agriculture and Economy  
at Acoma Pueblo  
1598-1821

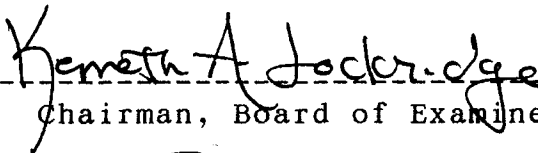
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John Kelly Robison

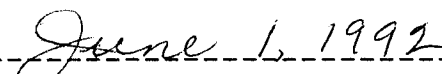
B. A., Kenyon College, 1988

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History

Agriculture and Economy at Acoma Pueblo, 1598-1821.  
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Director: Kenneth Lockridge

When the Spanish colonized New Mexico in 1598 they established a system to educate the Pueblo Indians in European civilization and religion. Franciscan missionaries, with the support of the Spanish Crown, went to the pueblos to initiate the process. Agricultural instruction constituted one part of this education process. Through agricultural teaching, the Franciscans hoped to "civilize" the Indians and integrate them into the Spanish Empire. In the process, the missionaries introduced European plants and livestock to the Indians, as well as tools and the know-how to raise the plants and animals and use the tools. Acoma Pueblo provides a case study for examining the changing agricultural conditions and resultant adaptation brought on by missionary pressure on the Pueblo Indians to conform to Spanish standards of living and religious belief.

The Franciscans failed to achieve all that they had set out to do. The Acoma, by and large, continued in their traditional beliefs while incorporating only those aspects of Spanish agriculture that suited them. They adopted some European tools, many of the plants and animals brought by the missionaries, but their system of labor, system of land tenure and customary use of the land remained roughly the same as before Spanish colonization. Additionally, because so few Spanish colonists settled in the area around Acoma, the pueblo retained its traditional acreage. As a result of the absence of deep modifications, Acoma remained a stable, self-governing, productive organism.

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## Introduction

Francisco Vasquez de Coronado's expedition of 1540-41 into the American Southwest introduced to the indigenous peoples a culture far different from their own. The sequence of two hundred and fifty years of Spanish contact and rule brought changes to the lives of the Pueblo Indians, one of which was in agriculture. The changing circumstances meant that the Pueblo Indians had to adapt to those circumstances in order to survive. The Pueblo of Acoma provides a case study for examining the changing agricultural circumstances and resulting adaptations wrought by the interaction of two very different cultures.

Throughout their long history, the people of Acoma have been primarily a horticultural people, despite some hunting, gathering and, since the arrival of the Spanish, pasturing. The horticultural element in the Acoma economy remained key through the mid-nineteenth century. With Spanish colonization and interaction through the missions, the Acomas began to produce new crops, using methods learned from the Spanish and seeds and tools obtained from the Spanish. Production of these new crops led to an increase in trade and the creation of new markets, as did the raising of sheep. The introduction of draft animals affected what



crops the Acomas produced while sheep herding changed both the system of labor and land tenure to a small degree. The introduction of new crops, livestock, and tools by the Spanish brought about changes in the traditional system of horticulture, the social structure, and the economy of the pueblo. Yet, despite the changes in agriculture and the efforts of the Franciscan missionaries to change Acoma society, to make it Spanish, the Acoma maintained control over their traditions, their land, and their customary use of the land, while incorporating Spanish crops, livestock, tools, and agricultural technology.<sup>1</sup>

The greatest changes occurred in the Acoma food basket. Prior to Spanish colonization, the Acoma raised only three food crops; corn, squash, and beans.<sup>2</sup> With colonization,

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<sup>1</sup> Determining anything closer than the general period of the horticultural changes is a difficult task. Documentary evidence of the Spanish Colonial Period is sketchy at best, non-existent at worst. During the Pueblo Rebellion of 1680, the Pueblo Indians destroyed many of the records of the seventeenth century, the first century of colonization. The Acomas themselves did not keep written records of their economy. To make matters even more difficult for the historian, in 1869-70 Territorial Governor William A. Pile, threw many documents into his wastebasket, thinking this the most expedient method of settling various land grant title question. Because of the paucity of documentation, one seeking to document the process of change at Acoma can only come to a rough estimate of the periods of various horticultural introductions by observing the pueblo through the eyes of the Spanish conquistador of the late sixteenth century and early seventeenth century and then the reports of those who wrote in the mid-eighteenth century.

<sup>2</sup> George P. Hammond and Agapito Rey, The Rediscovery of New Mexico, Coronado Cuarto Centennial Publication 1540-1940, vol. III, (Albuquerque: University of New Mexico Press,

and the arrival of missionaries to the pueblo, the Acoma expanded their list of crops. The missionaries introduced many crops from their native Spain, as well as plants from the newly conquered territories on Central America and Mexico.<sup>3</sup> The Acoma catalog of cultivated plants grew from three to dozens.

The same type of event occurred in livestock. When the Spanish came to New Mexico, the Acoma only raised turkeys and used them primarily for their feather.<sup>4</sup> The missionaries introduced draft animals such as horses, oxen, and mules, as well as animals for food such as sheep, cattle, and hogs.<sup>5</sup> The introduction of animals created a need for forage crops and stimulated trade. Additionally, the introduction of draft animals, combined with introduced tools, proved to have a important impact on the way in which the Acoma farmers cultivated their land.

Spanish tools did not greatly affect Acoma agriculture, with one exception, until the mid-nineteenth century when

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1966), p.82.

<sup>3</sup> Douglas Hurt, Indian Agriculture in America, (Lawrence: University of Kansas Press, 1987), p. 43; Marc Simmons, "New Mexico's Colonial Agriculture," Palacio, 89(1):4-5.

<sup>4</sup> Adolph F. Bandelier, Final Report of Investigations Among the Indians of the Southwest U. S., part II, Papers of the Archeological Institute of America, America Series, vol. IV, (Cambridge: J. Wilson and Sons, 1890), p. 156.

<sup>5</sup> Bandelier, Final Report, p. 210; Hurt Indian Agriculture in America, p. 43.

metal tools became more available. Until the Spanish Conquest, the Acoma used simple, yet effective tools made of bone, stone, and wood. The Acoma farmer used the hoe and the digging stick to perform most of his agricultural jobs.<sup>6</sup> The missionaries gave metal tools, such as hoes, to the farmers. The one tool that produced some changes in Acoma agriculture was the plow. With a team of oxen and a plow, Acoma farmers could plow more land in less time than they could with only a hoe.<sup>7</sup> The use of this implement helped the Acoma to produce a surplus that they used in trade.

The Pueblo Indians, including Acoma had been in an extensive trade network for, probably, centuries before the Spanish arrived. Many Pueblos traded items they had for items other Pueblos had. The Acoma also traded with the nomadic Indians.<sup>8</sup> The Spanish settlers became another market for pueblo-produced goods.

Despite these changes in crops, livestock, and tools, and the changes they produced in trade, the fundamentals of the Acoma agricultural structure remained intact. The resources used by the Acoma farmers, land and water,

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<sup>6</sup> Alfred E. Dittert, "Culture Change in the Cebolleta Mesa Region, Central Western New Mexico," PhD dissertation, University of Arizona, 1959, pp. 335-6, 495-6.

<sup>7</sup> Michael Partridge, Farm Tools Throughout the Ages, Boston: New York Graphic Society, 1973), p. 36.

<sup>8</sup> Bandelier, Final Report, pp. 113, 164.

remained constant from 1598 through the end of the Spanish Colonial Period. The Spanish did not take away the Acoma land base. Indeed, they reinforced the Acoma title to their traditional lands.<sup>9</sup>

Acoma use of water to irrigate their fields continued through the Spanish period. When the Spanish reached New Mexico, they saw an irrigation system in place in the Acoma corn fields.<sup>10</sup> The Acoma continued to irrigate their fields and continued to dispense access to the water in the same manner, although with some improvements learned from the Spanish.<sup>11</sup>

The same holds true of the communal nature of land tenure. Prior to Spanish colonization, the Acoma people owned their land in common. To gain use of a particular piece of land, the farmer applied to the *cacique* (headman) for the right to use a field.<sup>12</sup> This system did not change with the coming of the Franciscans. In fact, in the

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<sup>9</sup> Ward Alan Minge, Acoma: Pueblo in the Sky, (Albuquerque: University of New Mexico Press, 1991, revised edition), p. 51.

<sup>10</sup> Hammond and Rey, Rediscovery, p. 182.

<sup>11</sup> Alvin R. Sunseri, "Agricultural Techniques in New Mexico at the Time of the Anglo-American Conquest," Agricultural History 47(4):331; S. D. Aberle, "The Pueblo Indians of New Mexico: Their Land, Economy and Civil Organization," American Anthropologist, October, 1948, No. 4, Part 2, p. 33.

<sup>12</sup> Hurt, Indian Agriculture in America, p. 69; Hammond and Rey, Rediscovery, p. 102.

twentieth century, anthropologist Leslie White observed that this pattern remained.<sup>13</sup>

The Franciscan missionaries, attempting to change the Acoma Indians into Christian members of the Spanish Empire, taught them agricultural techniques, gave them new crops, new animals, and new tools. The adoption of these items brought some changes to the agricultural economy of the pueblo, but not the changes that the missionaries or the Spanish Crown wanted. The Acoma took the crops, animals, and tools that they wanted and discarded the rest. One of the Spanish concepts that the Acoma, for the most part, discarded was Christianity. Acoma traditional beliefs and changes in those beliefs are not the subject of this paper, but it is important to address Acoma traditional beliefs because of the way in which those beliefs fit into the Acoma world view and the view of themselves as farmers.

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<sup>13</sup> Leslie A. White, The Acoma Indians: People of the Sky City, (Glorieta, NM: the Rio Grande Press, Inc., 1973), p. 34. First published as part of the 47th Annual Report of the U. S. Bureau of American Ethnology, (Washington, D. C.: U. S. Government Printing Office, 1932).

The Physical Environment and the Acoma  
Traditional View of the Landscape

The environment and the traditions of the Acoma people are essential to understanding the changes that occurred in their economy, especially agriculture, and society between the Spanish *entrada* in 1598 and Mexican independence in 1821. The physical environment is crucial in its own right, but the traditions must be understood within the context of the environment.

The environment can be understood in and of itself. However, since Acoma tradition is deeply rooted in the semi-desert surrounding the pueblo, an understanding of Acoma traditions can only develop with an understanding of the physical environment. Additionally, to understand the economy, hence the agriculture, as well as Acoma society, one must come to an understanding of Acoma tradition.

The Acoma, past and present, are primarily farmers and, as such, dependent on environmental conditions for their survival. Soil, climate and geography are important to the Acoma in their role as farmers since these conditions directly influence the types of crops that can be grown in the area, as well as the potential of the harvest.

The land around Acoma is semi-desert. The country is "bare, rough...[with] drifting sands, above which formidable mountain walls lift a barrier."<sup>1</sup> These are the mesas, the table lands. The mesa of Acoma rises above the plain sixty miles west of the Rio Grande and the city of Albuquerque, and fifty miles east of Zuni.<sup>2</sup> On this mesa the Acomas built their community around 1200 A. D.<sup>3</sup> The Acoma Culture Province is bounded on all sides by these mesas and mountains and drained by the Rio San Jose. One hundred and fifty years ago, the willow-lined Rio San Jose was "a clear stream fifteen feet wide and one foot deep running swiftly over a gravelly bottom."<sup>4</sup> Cut within these mesas are numerous arroyos and canyons, the major ones containing springs that have never been known to go dry.<sup>5</sup> The Acoma have planted intermittently within the arroyos and canyons during the course of their occupation of the Acoma region.

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<sup>1</sup> Mary Sedgwick, Acoma, The Sky City, (Cambridge: Harvard University Press, 1927), p. 15.

<sup>2</sup> Sedgwick, Acoma, The Sky City, pp. 1-16.; Lt. James H. Simpson, Navaho Expedition; Journal of A Military Reconnaissance From Santa Fe, New Mexico to the Navaho Country Made in 1849, Frank McNitt, ed., (Norman: University of Oklahoma Press, 1964), pp. 144-145.

<sup>3</sup> R. J. Ruppe and A. E. Dittert, Jr. "Acoma Archeology: A Preliminary Report of the Final Season in the Cebolleta Mesa Region, New Mexico," El Palacio 60 (July, 1953):272.

<sup>4</sup> Simpson, Navajo Expedition, p. 145.

<sup>5</sup> Reynold J. Ruppe, "The Acoma Culture Province: An Archeological Concept," PhD dissertation, (Harvard University, 1953), p. 7.

The canyon springs and the Rio San Jose, as well as the Rio Cubero, located slightly north of the San Jose, are important to the Acoma as a source of water for their fields.

In the Southwest, the availability of water is the limiting factor in the exploitation of the environment. Western New Mexico experiences dry seasons in late spring and fall and a rainy season in summer and winter. However, even the rainiest regions may endure a year of drought in which rain does not come for ten months. Precipitation may vary considerably from month to month as well.<sup>6</sup>

Seasonal temperatures do not vary as much in Western New Mexico as in other parts of the country, though extremes are not uncommon. The average January temperature at Acoma is -1.3C and the average July temperature is 21.3C. Average maximum temperature is 38.4C and the average minimum is -29.6C. The average growing season in the Acoma area rages from 122 days to 175 days per year.<sup>7</sup>

The soils of the Acoma area are rich in minerals since the lack of ground water keeps them in place rather than leached away. The soils of the region are formed primarily of sand with little organic matter and are consequently well-drained. Sandy soils are able to heat more quickly than heavier soils, thus allowing planting at an earlier date in the year. These sandy soils, rich in nutrients, are

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<sup>6</sup> Ibid, p. 20.

<sup>7</sup> Ibid, pp. 20-21.



amazingly productive in a year with normal rainfall. Even in a drought year, enough water is stored underground to produce a good crop that the Acoma farms produce slightly more than half of a normal crop.<sup>8</sup>

In sum, the climate of the Acoma Culture Province is arid, almost a desert, but containing sandy, mineral-laced soils and enough water to sustain agriculture. Despite the obstacles present by such an inhospitable environment, humans have been able to live in the area for millennia. With the advent of occupation, the people of the areas developed traditions based in and on the area in which they lived. Such traditions are dependent on the landscape, and indeed the landscape is so interwoven in these traditions that each intersects the other.

Acoma is one of the most thoroughly researched pueblos. Many scholars have examined the religion and the traditions of the people. Some early ethnologists documented several variations of the Acoma origin tradition, all of which are similar in content but differ in detail. Their origin myth is somewhat generic and not deeply tied to the landscape. One tradition, collected by Edward Curtis, explains that the people (the Acomas) lived in darkness beneath the ground. The mother creator, *Iatiku*, and her younger sister lived below ground with the warrior twins, *Maseewi* and *Uyuyewi*,

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<sup>8</sup> Ibid, p. 25.

who became the leaders of the people. Badger burrowed upward until he beheld the light and then enlarged the hole to let the people up. After the people came into the upper world *Maseewi* gave clan names to each of the women. *Iatiku* instructed the people how to purify themselves by vomiting and by using herbs. She also established the *ch'aianyi*, the shamans, and showed them how to use the power of Mountain Lion, Bear, Wolf, Badger, Wildcat, Eagle and Porcupine to cure the sick.<sup>9</sup>

Another tradition, permeated with Christian traditions, explains how *Iatik* and her sister were given baskets with seeds of all the plants of the world and stone figures of all the animals of the world in them. While underground the sisters were given permission to ascend to the upper world and they created Badger and Locust from the stone figures to help them climb to the light. From the other figures, the sisters created all the other animals of the world and from the seeds, they grew all of the plants. *Iatik* created the seasons from the soil in her basket and told her children to pray to the spirits of these seasons for moisture, warmth, ripening and frost. With more dirt from her basket she

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<sup>9</sup> Edward S. Curtis, The North American Indian, vol. 16, reprint edition, (New York: Johnson Reprint Co., 1970), p. 172-173.

created the *Katchina*.<sup>10</sup>

Other traditions, less generic, together with ceremonies and rites provide a window into the culture of Acoma pueblo. Through this window one can glimpse the view the people of Acoma take toward their landscape and their own place within it. Within this picture of the landscape, the most important aspect of their world is the environment as it provides for the primary activity of life, the search for food.

Despite some hunting practices and pastoral practices imbibed from the Spanish, the Acomas are an agricultural people and it is as an agricultural people that the Acomas think of themselves. Consequently, many of their own traditions and ceremonies reflect this view.

As farmers the people of Acoma are concerned, primarily, with water and the rain that provides this water, since water is necessary for the growth and survival of their crops. This interest in rain stems from the lack of water in the arid environment of the Southwest.<sup>11</sup> As a result of this anxiety over water, many of the ceremonies of Acoma are concerned with the bringing of rain.

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<sup>10</sup> Richard Erdoes and Alfonso Ortiz, American Indian Myths and Legends, (New York: Pantheon Books, 1984), pp. 97-105.

<sup>11</sup> Edward P. Dozier, The Pueblo Indians of North America, (Prospect Heights, IL: Waveland Press, Inc., 1970), p. 151-152.

This preoccupation with water is illustrated in the office of Field Captain at Acoma. Flaming Arrow, an early twentieth century Acoma, related the tragic story of his grandfather, once elected field chief of Acoma.

The water supply of a village is its most important concern, and Acoma, being many hundred feet in the air, is greatly dependent upon the water holes on the top of the mesa. There are three large reservoirs and several smaller ones. No one may wash in these places but must carry the rainwater to several smaller depressions in the rocks. Baths were taken in big pottery vessels in the homes.

There was one especial water-hole known as the water-gauge and was a place used in their ceremonial. It is on the north cliff of Acoma, between two large reservoirs. It is about eight feet deep, six feet across the top, and nearly round in shape.

During the year's period of office for the field chief, if the rains are heavy enough to keep this water-gauge full in the dry moon,-- the last half of June and the first half of July,--then the watching community automatically re-elects the field chief for life. This is a terrible thing for the field chief, as it practically separates him from his wife and family, but he is judged to have such a power over the rain that the village cannot afford to lose his powers as field chief.

Unfortunately for my grandfather, a very heavy rainy season came in his year of office. The rain started early in June and it rained often until the last part of September. Grandfather took his partners to the pool at night and dipped the water out, trying to keep it low, but the rains came in torrents to fill it up. So his appointment for life was sealed.<sup>12</sup>

In addition to using the power of the field chief the Acomas use ceremonies, based on traditions, to help entice

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<sup>12</sup> James Paytiamo, Flaming Arrow's People, (New York: Duffield and Green, 1932), p. 145-6.

the rains to fall and water their crops. These ceremonies are conducted by certain organizations within the community, specifically the *Katchina* societies.<sup>13</sup> There are five *Katchina* societies or *kivas* in Acoma. These societies consist of men initiated into the all-male group for the express purpose of impersonating the various *Katchinas* during ceremonies held on important dates during the year. Normally a boy joins the same group as his father, or, if the father is dead, the groups of another male relative. Each group impersonates specific *Katchinas* during the ceremonies. These five *Katchina* societies in Acoma are: *Shutyuni-tsi*, *Haimata-tsi*, *Shoshka-tsi*, *Koshkasi-tsi*, and *Totakori-tsi*, each taking their name from the main *Katchina* impersonated.<sup>14</sup> However, fifty-nine *Katchinas* are impersonated at Acoma.<sup>15</sup>

The importance of the *Katchina* in the Acoma view of the landscape cannot be underestimated as this tradition illustrates.

Iatik told [her children] that the *Katchina* would come to dance for them. She told the people that they must respect these spirits, for they were very powerful.

One day two scouts came to announce the com-

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<sup>13</sup> Dozier, The Pueblo Indians, pp. 192, 194.

<sup>14</sup> Curtis, The North American Indian, vol. 16, p. 178-9.

<sup>15</sup> Leslie A. White, The Acoma Indians: People of the Sky City, (Glorieta, NM: the Rio Grande Press, Inc., 1973), p. 81.

ing of the *Katchina* in four days. Everyone busied himself in preparation for the reception of the *Katchina*. The women ground corn and made bread; the men hunted rabbits and deer. Masewi and his brother showed the people how to make prayer sticks and how to worship the *Katchina*. On the evening of the third day everyone prayed to the *Katchina* with their prayer sticks and corn meal and made offerings of bread and game. The next morning the *Katchina* arrived, proceeded by two scouts. The *Katchina* were dressed the way the masked dancer are today. They came into the plaza. Masewi and his brother went forward to meet them, handing them bunches of prayer sticks. The other people were close behind and they, too, met them. Then the *Katchina* distributed presents. They carried small buckskin bags with them. When they were opened and their contents discharged they became magnified and multiplied manifold. They had bows and arrows, clothing (for the people were still naked), pottery flint, buckskins, tools, etc., which they distributed to the people. The *Katchina* then instructed the people in the uses of all the gifts,... Then Masewi and Oyoyewi told the people that they must "believe in the *Katchina*,"<sup>16</sup> that they were powerful, that they were rainmakers.

The *Katchina* are spirit rain makers, the deities who provide the water necessary for the nourishment of the crops of the Acoma farmers. When the people began to grow their own food the *Katchina* would come to the village and dance when the fields were dry and no rain had come. After they danced, rains would fall.<sup>17</sup>

The people became disrespectful of the *Katchina* and war ensued. The *Katchina* refused to come to the village to dance anymore. However, they told the people that they

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<sup>16</sup> Ibid, p. 142-3.

<sup>17</sup> Ibid, p. 69.

could wear masks and costumes representing the *Katchina* and could act as if they were *Katchina*. If the people did this, and they honored and respected the *Katchina*, then they would come and possess the bodies of the dancers and bring rain.

Dances of the *Katchina* are presented several times a year. July 20 or 21 is *didya'micoko* or the summer solstice dance while the winter solstice dance occurs on December 21. The most important ceremony is presented around July 12 or 14. It is called *Natyati*, the summer dance for rain.<sup>18</sup>

Two *kivas* perform the summer rain ceremony, which lasts for four days. One performs for the first two days while the other *kiva* performs for the last two days. In content *Natyati* parallels the visits of the *Katchina* described in the tradition above; the *Katchina* dance and hand out presents, the people of Acoma prepare for the feast by hunting for game and the women prepare bread and corn.<sup>19</sup>

The traditions and ceremonies of Acoma testify that to the Acomas all life is interrelated, balanced and interdependent. Man is in a partnership with nature and they sustain a reciprocal relationship. Man must perform certain rites and ceremonies and, in turn, nature responds by providing the essentials of human survival. If men fail to perform these ceremonies correctly or faithfully, the

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<sup>18</sup> Ibid, p. 67.

<sup>19</sup> Ibid, p. 82-84.

balance of nature is interrupted. The consequences of this imbalance are illness, disasters, drought, and calamity. Ceremonies must be performed to keep the seasons in order, the sun and moon to rise and set properly, bring rain and snow, and to insure a well-ordered, properly balanced, physical environment, hence a well-ordered, properly balanced society.<sup>20</sup>

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<sup>20</sup> Dozier, The Pueblo Indians, p. 151.



Agriculture and Economy at Acoma  
in the Era Prior to Spanish Colonization

Acoma Pueblo, at the time of the Spanish Conquest of New Mexico, was an innovative society that incorporated the technology and traditions of the forebears of the Acoma people, while continuing to unite features gleaned from other societies through trade. The world of the Acoma people changed constantly because of on-going trade with other societies, as well as the impact of changing environmental conditions that evoked changes from within the community.

When Coronado arrived in New Mexico in 1542 he found an agricultural society of a technical complexity that, although lower in population than that of the central Mexican Valley, were culturally different than the plains tribes who lived in the lands between the wide-spread pueblos along the Rio Grande. Acoma was one of many small, isolated, agriculturally-based communities that, while lacking metal technology from which to make tools, thrived in their environment through the cultivation of several species of plants that they watered using sophisticated irrigation techniques. This chapter will paint a picture of Acoma society, economy and agriculture as it appeared at the time

of the Spanish Conquest in the last decade of the sixteenth century.

The sixteenth century Acoma traced their heritage to an older society that had thrived in the desert Southwest. The ancestors of today's Pueblo cultures are called the Anasazi, although archaeologists have yet to determine the precise connection.<sup>1</sup> Sixteenth century Acoma Pueblo was influenced by the Anasazi culture, but received some influences from the more western pueblos during the late pre-historic or Kowina Phase as well as influences even earlier from contemporaries of the Anasazi from the south called the Mogollon.<sup>2</sup> Thus, sixteenth century Acoma Pueblo was the result of local cultural conditions of "borrowing" of and "diffusion" from other cultural groups.<sup>3</sup> The Acoma Indians found by the Spanish in the mid-sixteenth century were, then, the progeny of a long-established culture, the Anasazi, that had incorporated aspects of other cultures. This tradition of incorporation of aspects of other cultures continued through the Spanish Period.

The Great Pueblo or Pueblo III Period, dating from approximately 1100 A.D. until 1300 A.D., witnessed the

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<sup>1</sup> William D. Lipe, "The Southwest," in Ancient Native Americans, pp. 327-401, edited by Jessie D. Jennings, (San Francisco: W. H. Freeman and Co., 1978), p. 366.

<sup>2</sup> Reynold J. Ruppe, "The Acoma Culture Province: an Archeological Concept," PhD. dissertation, Harvard University, 1953, p. 271.

<sup>3</sup> Ibid, p. 271.

Anasazi occupation of Mesa Verde, Pueblo Bonito, and several other sites.<sup>4</sup> The typical communities of this period were large, heavily populated pueblos, many of which were located in sheltered areas such as mesa-tops and cliff shelters. This was a change from the earlier periods in which smaller, more distant communities were the norm. Self-defense has been suggested as a reason for this coalescence of population. The larger communities were in easily defensible positions and the pueblos during this period contained defensive works such as holes for shooting arrows and walls that restricted access to the pueblos.<sup>5</sup> These defensive structures illustrate the emphasis placed on security.

More important than defensive works, the Anasazi had developed agriculture to a higher level of sophistication by this point in their history. Despite their lack of metal tools, they used the resources available to them well, with great technological skill. The large communities required greater productivity from a smaller area than smaller communities with larger land base.

By the Pueblo III Period, the Anasazi employed irrigation techniques in their fields, as well as used the crops, tools, and methods that their cultural descendants, the Pueblos, continued to use well into the historic period.

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<sup>4</sup> Campbell Grant, Canyon de Chelly: Its People and Rock Art, (Tucson: University of Arizona Press, 1978), p. 53. and Jennings, p. 375.

<sup>5</sup> Lipe, "The Southwest," p. 375.

Because the Anasazi were the ancestors of the Pueblo Indians and used almost identical farming methods, an overview of mature Anasazi agriculture and history may tell much about the origins of Pueblo agriculture in general and Acoma agriculture specifically as continuing from Anasazi precedents.

Originally, the Anasazi depended on dry farming, using only rain to water to crops and, later on in their development, floodwater farming, planting crops in river floodplains that retained the moisture from a wet season.<sup>6</sup> From 900 A.D to around 1100/1150 A.D., various water and soil control systems, such as check dams in washes, terraces, and stone grids on slopes began to appear.<sup>7</sup> The Anasazi also developed ditch irrigation in late prehistoric times in the Rio Grande area, using water from perennial streams.<sup>8</sup> The rise of irrigation technology in the Anasazi communities reveals that they had several problems with which to contend. Climatic change towards drier weather precipitated the development of irrigation as dry farming alone could no longer work to feed the large Anasazi communities. These large, populous pueblos also needed more food than the limited rain-watered fields could provide, thus providing another incentive to irrigate.

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<sup>6</sup> Ibid, p. 367.

<sup>7</sup> Ibid, p. 370.

<sup>8</sup> Ibid, p. 367.

The Anasazi did not work with metal, but made their tools from wood, stone, and bone. Digging sticks, made of wood with a blade of sheep-horn sometimes attached, formed the most basic agricultural tools of this era. These digging sticks were sometimes double-headed, pointed at one end and flattened at the other. With the pointed end, the Anasazi could poke holes in the ground for seeds, while using the flattened end for covering the holes, as well as weeding and digging. Hoes, made of deer or mountain goat shoulder-blade bone attached to a wooden handle, may have developed out of the flat-ended digging stick.<sup>9</sup>

Using these simple tools, Anasazi farmers planted four maize seeds in one hill of mounded earth for several reasons. This practice helped to increase the probability of the growth of at least one plant; the outer plants shielded the inner ones from hail and wind. In addition, they separated the hills to help limit the damage from disease because then there was less opportunity for the disease to spread throughout the entire field.<sup>10</sup>

The planting of maize year after year on the same ground seriously depleted the soil of nutrients needed for plant growth. The Anasazi developed and employed several techniques to remedy this continual problem. One technique

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<sup>9</sup> Ibid, p. 372.

<sup>10</sup> Linda S. Cordell, Prehistory of the Southwest, (Orlando: Academic Press, 1984), p. 187.

was letting the maize stalks decay in the fields permitting vital nutrients to return to the soil. Another practice was to spread wood ash from cooking fires on the field also helps to fertilize the soil. A third technique involved Anasazi farmers planting beans in the same hills as maize. The bacteria contained in the nodules of these legumes enriched the soil with nitrogen, maintaining the ground's fertility.<sup>11</sup>

While much different that contemporary Western agricultural standards, Anasazi seeds, farming tools, and methods worked efficiently in the arid Southwest. The Anasazi grew few crops but grew them intensively, especially in the Pueblo III Period. The tools Anasazi farmers used were simple, but effective, as were the methods of planting and caring for the fields. Irrigation, both flood-water and the newer ditch methods helped to insure a harvest not entirely dependent on rainfall. But their intensive agricultural techniques may have led to the downfall of the large Anasazi communities.

The Anasazi communities flourished until the late fourteenth or the early fifteenth century, when their inhabitants abruptly abandoned them. The entire pueblo culture area retracted from the high plateaus of Colorado and the Four-Corners area to the Rio Grande valley and isolated

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<sup>11</sup> Ibid, p. 187.

settlements such as Acoma, Zuni, and the Hopi villages.<sup>12</sup> The diffusion of the great Pueblo cultures from their large towns to smaller, less heavily populated sites, ranging over a wide area, represents a change from large-scale social arrangements to much smaller groupings.

Archaeologists have put forth several hypothesis for pueblo relocation, the earliest of which was the "hostile nomad" theory. In this theory, newly arrived nomads, presumably the Athapaskan Navajo and Apache, as well as the Ute and Paiute, drove the Anasazi from their cliff-side communities. This theory accounts for the construction of defensive features employed by the Great Pueblo Period Anasazi. However, little archeological evidence of nomad-Anasazi interaction has been found.<sup>13</sup> Indeed, little evidence supports the hypothesis that Athapaskan nomads even entered the Pueblo area until around 1525, only shortly before the arrival of the Spanish.<sup>14</sup>

Currently accepted theory hinges on soil erosion. Larger communities required a more intensive agriculture that depleted the fertility of the soil faster than it could be replenished. Cycles in which fields were left fallow

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<sup>12</sup> Edward P. Dozier, The Pueblo Indians of North America, (Prospect Heights, IL: Waveland Press, Inc., 1970), p. 1-3.

<sup>13</sup> Lipe, "The Southwest," p. 377.

<sup>14</sup> Ramon Gutierrez, When Jesus Came, the Corn Mothers Went Away, (Stanford: Stanford University Press, 1991), p. xxvii.

were shortened due to the demands of feeding a larger population. The wearing of the soil resulted in smaller crops, more disease and "heightened social tensions" because of the uncertainty of food.<sup>15</sup> Climatic changes, possibly droughts, during this period only served to exacerbate the situation.

Responding to these severe, on-going problems, the Anasazi quickly abandoned their large communities in favor of smaller, spread out villages. These new smaller pueblos could more easily sustain themselves through a more judicious use of the land and its resources. The larger communities could not sustain themselves because of their size and the necessity of feeding larger numbers of people. That the Anasazi moved from the more arid plateaus to the better watered vicinity of the Rio Grande support this theory.

Consistent with the theory of immediate disaster, the Acomas themselves maintain a tradition of great movement at sometime in the distant past. The archaeologists Reynold J. Ruppe and Alfred E. Dittert, while conducting their field work at Acoma in the early 1950s, were told that the "Old People" wandered from site to site in search of water—which was and is the limiting factor in agriculture and human habitation of the Southwest—and a place that received adequate rainfall for farming.<sup>16</sup>

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<sup>15</sup> Ibid, p. xxi.

<sup>16</sup> Ruppe, "The Acoma Culture Province," p. 228.



However, according to early twentieth century Acoma historian J. M. Gunn, the Acomas maintained that they came to Acoma Mesa from a valley twelve miles to the north to escape the depredations of the Navajo and Apache. According to the Acoma, this happened some 300 years before the Spanish *entrada*.<sup>17</sup>

Through the use of dendrochronological (tree ring) dating and the comparison of pottery and other artifacts, archaeologists have determined that Acoma has been occupied since approximately 1200 A.D.<sup>18</sup> Other archeological evidence, however, shows Cebolleta Mesa, very near the present site of Acoma, to have been occupied since the Late Basketmaker III Period (1 A.D. to 450 A.D.).<sup>19</sup> Therefore, the date of the arrival of the Acoma to the mesa and their manner of arrival, indeed the origins of the pueblo, continue to remain open to debate.

Agriculture tied the people of all Pueblos together. Pre-colonization systems of land tenure and labor at pueblo

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<sup>17</sup> J. M. Gunn, Scatchen, (Albuquerque: Albright and Anderson, 1917), p. 16.

<sup>18</sup> Edward A. Dittert and Florence Hawley Ellis, "Anthropological Evidence of Old Acoma Occupation of Land Claim Area," p. 137, 314, cited by Robert L. Rands, "Acoma Land Utilization: An Ethnohistorical Report", Indian Claims Commission case "Pueblo de Acoma vs U. S. A.", docket no. 266, p. 6.

<sup>19</sup> Ruppe and Dittert, "The Archeology of Cebolleta Mesa and Acoma Pueblo," El Palacio 59 (July, 1952), p. 204.

societies at the time of the Spanish *entrada* provides a basis from which to gauge the types and degrees of change that influenced these two aspects of the Acoma social structure. Because of the sparseness of material from Acoma, information from other pueblos must be considered. Evidence points toward uniformity in farming techniques among the puebloan people, except where anomalies have been noted.

The early Spanish observations, the records of the conquistadores during the several explorations into the regions north of the settled Spanish provinces, provide a window, however obscured and dirty, into the lives of the Acoma at the time of Spanish contact. These first explorers traveled to New Mexico in search of riches, especially gold, and to learn what they could about the land and its inhabitants.

The expedition of Francisco Vasquez de Coronado began in early 1540 and constituted the first concerted effort by the Spanish to explore the Southwest.<sup>20</sup> Viceroy Antonio de Mendoza promised the members of Coronado's expedition force estates in the territory they sought. This promise seemed especially lucrative since "there was a mountain of silver

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<sup>20</sup> Herbert Eugene Bolton, Spanish Exploration in the Southwest: 1542-1706, (New York: Charles Scribner's Sons, 1916), p. 64.

and other mines" in that country.<sup>21</sup> However, the expedition found neither gold nor silver and returned to Mexico City in 1542.<sup>22</sup>

The second expedition into New Mexico differed in intent from Coronado's. The Chamuscado-Rodriguez Expedition of 1581 set out to visit and to convert to Christianity the Indians of New Spain's northern-most province. Fray Agustin Rodriguez acted as religious leader of the expedition while Captain Francisco Sanchez Chamuscado functioned as military leader.<sup>23</sup> Hernan Gallegos, a soldier in the company, served as the expedition's chronicler and recorded the most complete account of the journey.<sup>24</sup> The expedition returned to Mexico City in May of 1582 after surveying the land and reported that the territory "...had so many mineral deposits and resources that would facilitate its settlement and the conversion of the natives to Christianity..."<sup>25</sup>

In November of the same year of the return of the Chamuscado-Rodriguez Expedition another expedition, under

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<sup>21</sup> Herbert Eugene Bolton, Coronado: Knight of Pueblo and Plains, (Albuquerque: University of New Mexico Press, 1949), p. 52.

<sup>22</sup> Ibid, p. 334.

<sup>23</sup> George P. Hammond and Agapito Rey, The Rediscovery of New Mexico, Coronado Cuarto Centennial Publication 1540-1940, vol. III, (Albuquerque: University of New Mexico Press, 1966), pp. 6-7.

<sup>24</sup> Ibid, p. 67.

<sup>25</sup> Ibid, p. 110.

the command of Antonio de Espejo, set off for New Mexico. Unlike either the Coronado expedition or the Chamuscado-Rodriguez expedition, Espejo's party set out to rescue two priests from the latter expedition, who had remained with the Indians in New Mexico to teach Christianity.<sup>26</sup> The friars Espejo had set off to rescue had been killed, but the expedition brought back to Mexico City much needed information about New Mexico, thus setting in motion events that would lead to colonization.<sup>27</sup>

The reports of the Spanish explorers, along with data collected by the archaeologists who have worked at Acoma, provide most of the information available about Acoma farming prior to Spanish colonization. The Spanish described the pueblos in little detail and the archeological evidence cannot shed light onto some non-material aspects of Acoma agriculture and society, but together they provide a view of farming life at Acoma before 1598, sketchy though it may be.

At the pueblo of Malagon, somewhere to the east of Acoma, the Chamuscado-Rodriguez expedition witnessed a marriage in which the priest conducting the ceremony placed a hoe in the hand of the groom "to signify that he is to till and cultivate the soil and gather corn to support his wife and children...In addition to this, he is given lands in

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<sup>26</sup> Ibid, p. 17.

<sup>27</sup> Ibid, pp. 22, 28.

which to plant corn."<sup>28</sup> This incident illustrates the Spanish interpretation of the system of Pueblo land tenure and the system of labor, as well as the integral role of agriculture within Pueblo culture. The structure of pueblo land tenure was communal as the pueblo owned the land. As a result, the pueblo leaders had the authority to distribute land to those who needed it, such as the newly married man.

Different pueblos had different systems of land tenure. At Hopi, the women controlled the land and their daughters inherited the use of that land after their marriages. While absolute control of the land resided in the matrilineal clans, the women retained the right of use. Men also claimed right of use of land in their own right, but this was land that they themselves cleared. No clan considered that unoccupied land cleared by the men to be clan property, rather it was considered to be owned by the village.<sup>29</sup> The situation at Zuni was similar to that at Hopi. The women owned the use of the land within a matrilineal, clan-based system.<sup>30</sup>

Still, in other southwestern, by and large, the men controlled the land, as at Malagon. The villages themselves owned the farming lands, but each man had the right to

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<sup>28</sup> Ibid, p. 102.

<sup>29</sup> Douglas Hurt, Indian Agriculture in America, (Lawrence: University of Kansas Press, 1987), p. 71.

<sup>30</sup> Ibid, p. 72.

acquire and to use the land. A man gained access to farm lands through four different means. First, the headman (*cacique*) could give a parcel of land to a man as compensation for a specific act, such as a marriage. Second, if a man felt that he should be entitled to land, he could apply to the *cacique*. A man could also develop a piece of unclaimed land for himself without going through the application process. Finally, a man could inherit the right of use of a piece of land from his father.<sup>31</sup>

Little is known about land use customs at Acoma itself prior to Spanish colonization. If current land use customs reflect past customs, then the masculine version of communal land use rights was typical in Acoma in the pre-Hispanic period. According to modern, twentieth century sources, the village owned the land and individuals used the land with the consent of the *cacique*. The individual farmers could continue to cultivate the land as long as they needed and as long as they continued to undertake their community duties.<sup>32</sup> This is consistent with the few sixteenth century accounts available indicating that land use did not change at Acoma.

Anthropologist Leslie White's description of Acoma property rights and land tenure, observed during the late

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<sup>31</sup> Hurt, Indian Agriculture in America, p. 69.

<sup>32</sup> Adolph F. Bandelier and Edgar L. Hewitt, Indians of the Rio Grande Valley, (Albuquerque: University of New Mexico Press, 1937), p. 43.

nineteen-twenties and early thirties, is particularly illuminating.

Theoretically, all land is communally owned, but each farm, however, is said to "belong" to some particular family. This means that they are using it and that they have the right to continue to use it, but should they neglect the land and allow it to lie idle someone else may ask the cacique [the chief person of authority in the pueblo] to allot the land to him. And the cacique has the authority to do this.

Usually, the land stayed within the family, to be divided among the children upon the death of the father.<sup>33</sup>

As far as one can determine, prior to 1598, the community of Acoma as a whole owned the land, but the men had the use of the land. The *cacique* held the power to distribute the land to those who needed it, such as a newly married man. The man could use the land for as long as he needed to, as long as he did indeed farm it and took part in communal duties.

Like the division of land, the Pueblo social structure rigidly divided the labor of men and women. As illustrated in Gallegos' account of the marriage in Malaga, the men held responsibility for cultivating the fields, thus providing

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<sup>33</sup> Leslie A. White, The Acoma Indians: People of the Sky City, (Glorieta, NM: the Rio Grande Press, Inc., 1973), p. 34. First published as part of the 47th Annual Report of the U. S. Bureau of American Ethnology, (Washington D. C.: U. S. Government Printing Office, 1932).

for their families. Cutting and hauling firewood was also a man's occupation. In addition, they hunted, dressed animal skins, made their own weapons, as well as baskets and blankets. The women's sphere was the home and the family. Their responsibilities included raising the children, cooking the meals, and taking care of the home. The men built the home itself, while the women did the plastering.<sup>34</sup> The pueblo social structure divided the labor of the men and women. The women cooked the food and cared for the home and family while the men produced the commodities, mainly through agriculture, with which the women worked.

In many aspects of their agricultural endeavors, the Acoma remained on the same technological level as their Anasazi forebears. That technological change did not occur illustrates the contentment the Acoma had with their agricultural system and that they had no need for improvement. The Acoma did not have to contend with feeding a large population nor did they depend solely on rain for their crops. Unless the Rio San Jose dried up, the Acoma could expect a good harvest even with little rain.

The Acoma continued to employ irrigation in their fields. Students of Pueblo history know little about the techniques and technology used by the Acoma for cultivating their crops. The Spanish explorers left few records detailing agricultural technology. Diego Perez de Luxan, who kept

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<sup>34</sup> Dozier, The Pueblo Indians, p. 129.



a diary of the Espejo expedition, recorded a small, but interesting piece of information about the Acoma corn fields, located four leagues (about twelve miles) from the pueblo. Of the fields Luxan wrote, "We found many irrigated cornfields with canals and dams, built as if by Spaniards.-

"<sup>35</sup> Luxan expressed amazement that the Acomas used irrigation technology. However, the Indians of the Southwest irrigated with canals for hundreds of years before the Spanish *entrada* and continued to do so until the present.<sup>36</sup>

The sixteenth century Acoma employed the technique of spring, stream or river irrigation on their fields. This method required the construction and maintenance of dams, ditches, and reservoirs.<sup>37</sup> Archaeologists have found evidence of water-diverting dams from the pre-Hispanic period in the Acoma area. Irrigation was important for Pueblo agriculture since squash and beans, two of the mainstays of the Pueblo diet, require more water than could be provided solely by rain in the desert Southwest, especially during seasons of drought.<sup>38</sup> The construction and maintenance of

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<sup>35</sup> Hammond and Rey, Rediscovery, p. 182.

<sup>36</sup> Lipe, "The Southwest," p. 358.

<sup>37</sup> Joseph C. Winter, "Aboriginal Agriculture in the Southwest and Great Basin," PhD dissertation, University of Utah, 1974, p. 139.

<sup>38</sup> Adolph F. Bandelier, Final Report of Investigations Among the Indians of the southwest U. S., Part II, Papers of the Archeological Institute of America, America series, vol. IV, (Cambridge: J. Wilson and Sons, 1890), p. 156.

these irrigation systems within the fields required the cooperative labor of the Acoma community.

Communal effort also protected the fields. To control incursions by pests, both animal and human, who would steal their crops, the Pueblo Indians maintained lookout posts in the fields. The towers consisted of eight or ten feet square buildings supported by four posts, which in turn supported a pole and mud roof. There was usually a second story covered with brush, but no side walls. The builders set the structure over a one to two foot deep, square pit containing a crude fireplace and stores.<sup>39</sup>

The Spanish rarely mentioned either the tools used to cultivate or the methods with which the Pueblos cultivated. Alfred Dittert and Reynold Ruppe uncovered tools used by the Acoma for cultivation during the course of the archeological investigations in the Cebolleta and Acoma Mesa regions. The findings provide the majority of the evidence for the pre-Hispanic Acoma tool chest. Acoma tools and crops at the time of the Spanish Conquest remained the same as the Anasazi's. The primary tools utilized by the pre-Hispanic Acomas to cultivate their fields were the hoe and the digging stick. The Acomas flaked their oval or rectangular hoes from a variety of minerals including basalt and sandstone. Hoe-heads ranged in size from almost three inches to

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<sup>39</sup> Bandelier and Hewitt, Indians of the Rio Grande, p. 39.

almost six inches long by two and a half to almost four inches wide. The Acomas lashed these stone heads to a wooden shaft, as in the case of the later Acoma phase axes which were notched on either side and hafted, or simply held in the hand.<sup>40</sup>

The farmers made digging and planting sticks of small lengths of split juniper ground to a rounded point at one end with both ends being worked smooth. The small ends of the digging sticks helped the Acoma to poke holes in the earth, providing a space for the seeds.<sup>41</sup>

Further excavations at Acoma revealed numerous stone tools such as axes of ground stone and flaked stone choppers and knives.<sup>42</sup> The Acomas could have used the axes in clearing fields, while the choppers and knives have a multitude of agricultural applications. Stone knives were also used to plant.<sup>43</sup> Wooden shovels and baskets woven of fibers helped the farmers to haul dirt.<sup>44</sup> All these tools helped the Acoma in their cultivation of the crops they inherited from the Anasazi.

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<sup>40</sup> Alfred E. Dittert, "Culture Change in the Cebolleta Mesa Region, Central Western New Mexico," (Ph. D. dissertation, University of Arizona, 1959), pp. 335-6, pp. 495-496.

<sup>41</sup> Ibid pp. 335-6, pp. 495-496.

<sup>42</sup> Ruppe and Dittert, "Acoma Archeology," p. 270.

<sup>43</sup> Bandelier, Final Report, p. 162.

<sup>44</sup> Dozier, The Pueblo Indians, p. 127.

Prior to the Spanish movement into New Mexico, the Acoma Indians cultivated only a small number of plant species. They planted only three main food crops; corn, beans, and squash. Almost all groups in the pre-Hispanic Southwest grew these three crops.<sup>45</sup> Corn was the staple crop, mainly because it could be grown almost anywhere, even on high plateaus thousands of feet above water courses. It can grow simply with summer rains and winter snows.<sup>46</sup> Although, if these rains did not come, the Acoma irrigation system provided the water.

What the Acomas lacked in species of cultivated crops, they made up in varieties of those crops. They raised five varieties of corn, each of a different color, as well as nine varieties of beans.<sup>47</sup> Modern informants at Acoma maintain that they and their ancestors have grown sweet corn, a mutation of hard-kerneled corn, since pre-historic times. However, south-western Indians did not widely cultivate sweet corn in the pre-Colonial Period.<sup>48</sup>

Additionally, Acoma farmers grew several non-food crops. The presence of elbow-shaped, pottery pipes in archeological sites at Acoma suggests either the cultivation

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<sup>45</sup> Bandelier, Final Report, p. 37.

<sup>46</sup> Ibid, p. 156.

<sup>47</sup> Winter, "Aboriginal Agriculture," p. 27.

<sup>48</sup> Edward F. Castetter and Willis H. Bell, Pima and Papago Agriculture, (Albuquerque: University of New Mexico Press, 1942), p. 87.

of tobacco or harvesting of non-domesticated tobacco.<sup>49</sup>

The Acoma also grew several varieties of gourds, which they used to carry water and store food.<sup>50</sup>

Cotton provided the fiber the Acoma used to weave cloth for clothing and blankets. They, apparently raised a hardy variety of this plant since Acoma is normally too cold and too short of a growing season for most types of cotton. It requires a long growing season, as well as irrigation.<sup>51</sup>

Before 1600, the mode of dress consisted of cotton sheets tied around the neck or shoulders or made into

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<sup>49</sup> Ruppe and Dittert, "Acoma Archeology," p. 270.; According to Leslie White, "no evidence whatever points to a prehistoric cultivation of tobacco." Coronado's men probably did not smoke and make no mention of Pueblo use of tobacco. Spanish colonists, however, both raised and smoked tobacco by 1625. Leslie A. White, "Punche: Tobacco in New Mexico History," New Mexico Historical Review, 18(4):386,388.; Additionally, Adolph Bandelier stated that the Pueblo Indians did not know of tobacco until after Spanish colonization. More southerly tribes, such as the Yaquis, Pimas and Mayos, did use tobacco. Bandelier, p. 37.; However, Winter states that the Acomas did indeed grow a variety of *Nicotina rustica*. Winter, p. 27. The Acoma Origin Tradition maintains that tobacco was the second planted grown by the first mothers of the people. However, this tradition has incorporated aspects of Christianity and information since the arrival of the Spanish. Therefore, despite its location as the second cultivated plant, tobacco could have been introduced into the origin tradition after the Spanish Conquest. M. W. Stirling, "Origin Myth of Acoma," U.S. Bureau of American Ethnology, Bulletin no. 136, (Washington: U.S. Government Printing Office, 1943), p. 6.

<sup>50</sup> Winter, "Aboriginal Agriculture," p. 27.

<sup>51</sup> Winter, "Aboriginal Agriculture," p. 27; Gunn, Scatchen, p. 25; Bandelier, "Final Report," pp. 37, 157.

sleeveless jackets.<sup>52</sup> Luxan described the dress of the Acoma women when he visited the pueblo in 1582. The women took part in a dance, "wearing Mexican blankets, very elegant with colors, feathers, and other trappings." At Zia, Luxan noted the clothing of the men as consisting of blankets "some draped like towels to cover their privates and others like knotted cloaks worn shawl fashion, and also leather shoes in the shape of boots."<sup>53</sup> The Acoma men most likely wore similar clothing.

The early explorers noted the existence of the Acoma crops, especially the food crops, usually because they were hungry, their own food supplies running short. The Pueblos, including Acoma, gave many presents of food and cotton blankets to the Spanish during several of the expeditions.<sup>54</sup>

Hernan Gallegos, the chronicler of the Chamuscado-Rodriguez expedition, recorded only that Acoma had five hundred houses of three and four stories.<sup>55</sup> The expedition visited other pueblos and Gallegos' descriptions of those

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<sup>52</sup> Bandelier, Final Report, p. 157.

<sup>53</sup> Hammond and Rey, Rediscovery, p. 180.

<sup>54</sup> Herbert Eugene Bolton, Coronado: Knight of Pueblos and Plains, pp. 181-183; Hernan Gallegos, "Relation of the Chumascado-Rodriguez Expedition," p. 107; and Diego Perez de Luxan, "Account of the Antonio de Espejo Expedition into New Mexico, 1582," p. 176, both in George P. Hammond and Agapito Rey, The Rediscovery.

<sup>55</sup> Hammond and Rey, Rediscovery, p. 107.

pueblos shed some light onto some of the crops that the Acoma may have cultivated as well. at the time that may also apply to Acoma. The company found the pueblo of San Miguel deserted, but Gallegos described it in more detail than he did most of the pueblos visited by the expedition. "...[We] found many cornfields," he wrote, "like those of Mexico, and also fields of beans, calabashes (squash), and cotton."<sup>56</sup>

A small group of Coronado's men, under the command of Captain Hernando de Alvarado, visited Acoma. Alvarado wrote little about Acoma only reporting that the people were friendly, lived in houses three and four stories high, and "...have abundant supplies of maize, beans, and turkeys like those of New Spain."<sup>57</sup> He added, "They [the people of Acoma] made a present of a large number of [turkey] cocks with very large wattles, much bread, tanned deerskins, pine nuts, flour [corn meal], and corn."<sup>58</sup>

Alvarado's observations of turkeys at Acoma reveal that very little animal husbandry existed at Acoma until after Spanish colonization. Like many other American Indian groups, the Acomas kept dogs, mostly as protection against

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<sup>56</sup> Ibid, p. 82

<sup>57</sup> Herbert Eugene Bolton, Coronado: Knight of Pueblos and Plains. p. 183.

<sup>58</sup> George Parker Winship, The Journey of Coronado, (New York: Allerton Book Co., 1922), p. 40.

animals and intruders.<sup>59</sup> The Acomas raised large flocks of turkeys, that they herded like sheep. However, they raised the turkeys mainly for their feathers, which were used in making blankets, rather than for their meat.<sup>60</sup> At Acoma, Luxan found women who wore blankets made of turkey feathers.<sup>61</sup>

The abandonment of the Anasazi sites and the influx of new tribes began trade patterns that the Acoma capitalized upon. Trade played an important role in the sixteenth century economy of Acoma and the other pueblos. Each pueblo had a commodity that others wanted or needed. The pueblo of Zuni, seventy miles to the west of Acoma, had access to salt, while Tano, located slightly east of the Rio Grande, eighty mile from Acoma, possessed turquoise.<sup>62</sup> The Pueblos even carried on trade over long distances. They traded for parrot plumes that came from the Sierra Madres in central Mexico. Shells from the Pacific Coast as well as the Caribbean Coast reached the pueblos through trade routes.<sup>63</sup> The Acoma may even have traded with the Aztecs of central Mexi-

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<sup>59</sup> Bandelier and Hewitt, Indians of the Rio Grande Valley, p. 36.

<sup>60</sup> Bandelier, Final Report, p. 156; Gunn, Scatchen, p. 26.

<sup>61</sup> Hammond and Rey, Indians of the Rio Grande Valley, p. 180.

<sup>62</sup> Bandelier, Final Report, p. 113.

<sup>63</sup> Bandelier, Final Report, p. 39.



co. Fray Geronimo de Zarate Salmeron heard from a soldier about paintings in an Acoma kiva that resembled Aztecs.

...the first time he [Captain Geronimo Marquez] was on the great cliff of Acoma, he entered an estufa [kiva] and [saw] in it some pictured Indians [painted on the wall]. And as he recognized them for Mexicans [Aztecs] by their dress, he asked the [Acoma] Indians who were those that were there painted; and they replied that it was a few years since some Indians of that dress had come there...<sup>64</sup>

Cotton was an important trade item because it was not grown, or could not be grown, everywhere.<sup>65</sup> The Acoma found new trading partners in the Navajo and Apache, with whom they engaged in the exchange of agricultural and hunting products. Acoma traded cotton mantles with the Navajo for deerskins. Although the Pueblos traded with the Navajo, they did not trust them.<sup>66</sup> The Navajo and the other Athapaskans groups in the Southwest bartered game for farm products, but often-times the Navajo raided and simply took what they wanted.<sup>67</sup>

Prior to Spanish colonization of New Mexico, then, the Acoma farming was impressive. They relied on only a few

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<sup>64</sup> Fray Geronimo de Zarate Salmeron, "Relacion, 1538-1628" Land of Sunshine, 11:336-346, 12:39-48, 104-113, 180-187, p. 182.

<sup>65</sup> Bandelier, Final Report, p. 37.

<sup>66</sup> Ibid, p. 164.

<sup>67</sup> Gutierrez, When Jesus Came, p. xxvii.

crops, on corn, squash and beans, for their sustenance. They cultivated these crops, as well as cotton and gourds, using hoes, planting sticks, and knives made of wood and stone. Water diverted from the local rivers and floodwaters irrigated their crops. Their only domesticated animals were the dog and the turkey, the latter raised more for feathers than for meat. The men worked in the fields, but did not own them. Rather, the pueblo itself owned the fields and the men used them with the permission of the pueblo leaders. The Acoma women worked in the home. Acoma agriculture at the time of the Spanish *entrada* reflected a continuing agricultural tradition based on the agriculture of their Anasazi ancestors. After the Spanish colonization of New Mexico, the Acoma continued the tradition handed down from the Anasazi, but began to incorporate aspects of Spanish agriculture.

Acoma and Spanish Colonial Policy  
in New Mexico  
1598-1821

During the two hundred and fifty years of Spanish political influence in New Mexico, the Spanish sought to establish themselves as directors of the changes they hoped would take place in the lives of the Pueblo Indians. To do so, they instituted colonial policies designed to accomplish their goals. Spanish colonial authorities wanted to integrate the Indians into the Spanish colonial system, but achieved, at best, mixed results. In fact, after two centuries, Spanish attempts to turn the Acoma people into Spaniards had met with little success. Despite a precipitous drop in population, from 3000 in 1598 to 750 in 1850<sup>1</sup> caused by war, disease and population movement, and some Acoma conversions to Catholicism,<sup>2</sup> the Acoma maintained control over their traditions, control of land, and

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<sup>1</sup> Rands, Robert L. "Acoma Land Utilization: An Ethnohistorical Report," Indian Claims Commission Case "Pueblo de Acoma vs U. S. A.," pp. 171, 173.

<sup>2</sup> Ward Alan Minge, Acoma: Pueblo in the Sky, (Albuquerque: University of New Mexico Press, 1991 revised edition), p. 21.

customary use of their tradition lands.

As the proprietor of large and far-flung empire, Spain had peculiar difficulties to contend with. She possessed few people and could not spare many of them for the purposes of colonization. To combat this problem, the Crown sought to colonize her new territories with the native inhabitants. To do so, the Spanish first needed to subjugate and control the Indians. Second, they needed to "civilize" them.<sup>3</sup>

To realize these goals, Spain's colonial legislation attempted to safeguard the Indians and to raise them to some degree of citizenship within the Spanish Empire. This policy was "equalled in humanitarian principles by no other country..."<sup>4</sup> The Papacy gave the Spanish Crown "title over the Indies, with the conditional obligation of carrying on the conversion of the aboriginal population..." with the right to collect tribute.<sup>5</sup> Thus, for the entirety of Spain's New World colonies the "conversion of the aboriginal population was declared to be the most important aim of colonial enterprise, and the Crown expended large sums on the support of missions, the building of churches, and the

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<sup>3</sup> Herbert Eugene Bolton, "The Mission as a Frontier Institution in the Spanish American Colonies," American Historical Review, Oct. 1917, 23(1):52.

<sup>4</sup> Bolton, "The Mission," p. 52. *vol # page*

<sup>5</sup> France V. Scholes, "Church and State in New Mexico," New Mexico Historical Review, 11(1):11.

endowment of ecclesiastical foundations."<sup>6</sup>

The *encomienda* system solved several of Spain's colonial problems. The Spanish desperately needed a labor force to work their mines and plantations. However, the New Laws and Ordinances of 1542 severely curtailed Spain's ability to enslave the Indians. The *encomienda* allowed the Spanish to exploit native labor while avoiding the penalties involved in slavery.<sup>7</sup> The *encomendado*, the conquistador who had been rewarded with a grant of land for staking his life and money to conquer the New World could make use of the native labor force and exact tribute. But he also had obligations to the Indians. He "was appointed and sworn for the express purpose of giving his Indians military protection and of promoting politically and religiously their conversion to civilization."<sup>8</sup>

The missionaries, however, would play the more important role within Spain's colonial program than the *encomendero*, especially in New Mexico. The principal work of the missionaries was the conversion of the heathen Indians to Catholicism. The spreading of the faith was their primary task, "first, last, and always." The

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<sup>6</sup> Scholes, "Church and State," 11(1):10.

<sup>7</sup> Lesley Byrd Simpson, The Encomienda in New Spain: The Beginning of Spanish Mexico, (Berkeley: University of California Press, 1950), p. 6.

<sup>8</sup> Wilhelm Roscher, The Spanish Colonial System, (New York: Henry Holt and Company, 1904), p. 4-5.

Christian faith was the foremost principle in European civilization in general and Spanish civilization in particular. Since the Spanish Crown acknowledged that it had a duty to spread Catholicism to the Indians, from the point of view of both the Church and the State, the first task of the missionary was to extend that faith.<sup>9</sup>

To spread the Christian Word to the Indians, the Spanish colonial program included the founding of missions, such as the Franciscan mission at Acoma. Unlike the missions of California or Paraguay, the missions of New Mexico were not great estates. Rather, the padres acted as parish priests; they conducted mass, administered the sacraments and taught the scriptures.<sup>10</sup>

But the priests played a larger role in the plan of the Spanish Crown. The Catholic kings had three overriding objectives concerning the Indians. "They desired to convert him, to civilize him, and to exploit him."<sup>11</sup> To achieve these aims, the Crown, through the inaction of special secular legislation, tried to help the progress of the Indians toward "civilization." The "New Laws and Ordinances for the Government of the Indies" of 1543 set the Indians on equal legal footing with the conquering Spanish and made

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<sup>9</sup> Bolton, "The Mission," p. 47.

<sup>10</sup> Henry H. Kelly, "Franciscan Missions of New Mexico," New Mexico Historical Review, 15(4): 364.

<sup>11</sup> Bolton, "The Mission," p. 43.

them direct vassals of the Crown. The Indians, however, never achieved the status of full citizenship in the Spanish Empire. As vassals of the Crown, the Indians were considered "wards" of the king. The Spanish, therefore, treated them as children who still needed to be taught the niceties of civilized life. Until they learned and acquired the trappings of civilization, the Indians could not be thought of as adults, hence could not enjoy full citizenship.<sup>12</sup>

According to Herbert E. Bolton, the father of Spanish Borderlands history: "If the Indian were to become either a worthy Christian or a desirable subject, he must be disciplined in the rudiments of civilized life." The task of indoctrinating the Indians in European civilization became the responsibility of the missionaries.<sup>13</sup> As Bolton stated:

...the missionaries were not alone religious agents. Designedly in part, and incidentally in part, they were political and civilizing agents of a very positive sort, and as such they constituted a vital feature of Spain's pioneering system.<sup>14</sup>

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<sup>12</sup> Edward Spicer, Cycles of Conquest, (Tucson: University of Arizona Press, 1962), pp. 281-283; Edward Dozier, The Pueblo Indians of North America, (Prospect Heights, IL: Waveland Press, 1970), p. 50, 72; Adolph Bandelier, Final Report of Investigations Among the Indians of the Southwest United States, Part II, Papers of the Archeological Institute of America, America Series, vol. IV, (Cambridge: J. Wilson and Sons, 1890), pp. 192, 197-8.

<sup>13</sup> Bolton, "The Mission," p. 47.

<sup>14</sup> Ibid, p. 46.

The Spanish initiated their colonial program, in all its facets, when they established a colony in New Mexico. After Coronado's expedition in 1540-41, the Spanish waited forty years before attempting another expedition into the territory. Between 1580 and 1598, several expeditions entered New Mexico, but none establish a colony.

The Chamuscado-Rodriguez and Espejo Expeditions excited interest in the areas to the north of New Spain. Many began to dream of conquering and settling New Mexico.<sup>15</sup> In 1595, the contract for the colonization of New Mexico was awarded to Juan de Oñate, one of the wealthiest citizens of the province of Zacatecas. In the terms of his contract, Oñate became *adelantado*, that is both governor and captain-general of the new province, with the ability to award land in *encomienda*. After many delays, the colonizing expedition left New Spain on February 7, 1598, arriving at the Pueblo of Caypa on July 11 of that same year, which Oñate christened San Juan and where he set up temporary headquarters until the colonists completed the villa of Santa Fe.<sup>16</sup>

Attempts to incorporate the Pueblo Indians into the Spanish Empire began almost immediately. On September 9, 1598, Oñate held an assembly with representatives from all the pueblos the Spaniards had thus far contacted, to whom

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<sup>15</sup> Bolton, Herbert Eugene, Spanish Exploration in the Southwest 1542-1706, (New York: Charles Scribner's Sons, 1916), p. 199.

<sup>16</sup> Ibid, p. 203.



the governor gave rods of office.<sup>17</sup> The *cacique* of Acoma, Zuta-Kapan, was one of the last to take the oath of allegiance, on October 27, and, according to witnesses, swore the oath in a "sullen manner."<sup>18</sup> Most Pueblo leaders communicated a willingness to acknowledge the sovereignty of the Spanish king and to accept the Christian god; prudence reasonably dictated that not to accept the Spanish demands would result in possible drastic consequences. Because of differences in languages, neither group had fully mastered the other's, the Pueblo leaders likely did not fully understand what Oñate said and the implications of his speech.<sup>19</sup>

In mid-September of 1598, Oñate set out for the west in search of wealth. His *maese de campo* (controller of stores), Juan de Zaldivar, followed in November. At Acoma, the inhabitants killed Zaldivar and his fourteen companions.<sup>20</sup> The Acoma apparently accepted the small company peacefully at first, then, without warning or provocation, attacked.<sup>21</sup> Accounts vary, but Zaldivar apparently asked for or demanded provisions for his company. Since

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<sup>17</sup> Bolton, Spanish Exploration, p. 203; J. M. Gunn, Scatchen, (Albuquerque: Albright and Anderson, 1917), p. 35.

<sup>18</sup> Gunn, Scatchen, p.35.

<sup>19</sup> Henry Warner Bowden, American Indians and Christian Missionaries, (Chicago: University of Chicago Press, 1981), p. 42.

<sup>20</sup> Bolton, Spanish Exploration, p. 204.

<sup>21</sup> Minge, Acoma, p. 11.

they had contributed to the supplying of Oñate's company only a month before, the Acoma were disinclined to further deplete their own stores.<sup>22</sup> Zuta-Kapan himself killed Zaldivar with a club while the Acoma warriors killed another twelve soldiers and two servants. Five of the soldiers leaped from the mesa-top, one to his death, while the others escaped with only slight injuries to give word of the attack to Oñate.<sup>23</sup>

Zaldivar and his company of seventy men arrived at Acoma on January 21, 1599 and made three attempts to persuade the Acoma to surrender peaceably met with failure. During the night of the twenty-first, Zaldivar's men scaled the cliffs in preparation for an attack the following day, but did not succeed in taking the pueblo on that assault.<sup>24</sup> Oñate sent Vicente de Zaldivar to avenge his brother Juan's death and, after a two day battle, the Acoma surrendered.<sup>25</sup>

In a letter to the viceroy in Mexico, Oñate briefly described the attack and its aftermath.

They [the Acoma] are a people whom I have compelled to render obedience to His Majesty, although not by means of legal instruments like the rest of the

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<sup>22</sup> Jack D. Forbes, Apache, Navaho and Spaniard, The Civilization of the American Indian Series, vol. 115, (Norman: University of Oklahoma Press, 1960), p. 87.

<sup>23</sup> Gunn, Scatchen, p. 36.

<sup>24</sup> Minge, Acoma, p. 11.

<sup>25</sup> Bolton, Spanish Exploration, p. 204; Gunn, Scatchen, p. 36.

provinces. This has caused me much labor, diligence, and care, long journeys, with arms on the shoulders, and not a little watching and circumspection; indeed, because my *maese de campo* was not as cautious as he should have been, they killed him with twelve companions in a great pueblo and fortress called Acoma, which must contain about three thousand Indians. As punishment for its crime and its treason against his Majesty, to whom it had already rendered submission by a public instrument, and as a warning to the rest, I razed and burned it completely, in the way in which your Lordship will see by the process of this cause.<sup>26</sup>

Only six hundred Acoma remained after Zaldivar's devastating attack. Zaldivar forced the survivors off of the mesa and onto the valley floor where they were to build their settlement.<sup>27</sup>

Because Acoma had sworn obedience to the Spanish and

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<sup>26</sup> Bolton, Spanish Explorations, p. 218.

<sup>27</sup> Gunn, Scatchen, p. 36; The actuality of the massacre occurring at Acoma is a question still open to debate. The Spanish seemed sure that the massacre of Zaldivar and the resultant massacre of the Acoma by Vicente Zaldivar took place at the Sky City. However, as Gunn pointed out, the Acoma "have not tradition of this particular fight or that the town was ever destroyed." (Gunn, pp. 36-37). Archeological evidence concurs. Nothing in the archeological record, (granted that it is rather limited) suggests that Acoma had ever been razed in the manner the Spanish sources relate. (See Reynold J. Ruppe and Alfred E. Dittert, "The Archeology of Cebolleta Mesa and Acoma Pueblo," El Palacio, 59(1952):191-219; Reynold J. Ruppe, "The Acoma Culture Province: An Archeological Concept," PhD dissertation, Harvard University, 1953; Alfred E. Dittert, "Culture Change in the Cebolleta Mesa Region, Central Western New Mexico," PhD dissertation, University of Arizona, 1959). Gunn suggests that the actual pueblo to Spanish leveled was located nearby Acoma and that the Spanish mistook that pueblo for Acoma. Gunn points out that "within a radius of 15 to 20 miles are the ruins of several different pueblos, some of these like Acoma and similarly located, one in particular, about 16 miles west of the pueblo [Acoma]." "The ruins appear as though the village had been destroyed by some other force than the slow disintegration that time produces." (Gunn, p. 37).

therefore became vassals of the King, the Spanish could try the Acoma as Spanish subjects who had committed treason.<sup>28</sup> In February of 1599, Oñate presided over a hearing to determine the seriousness of the crimes committed by the Acoma and to ascertain their guilt. After the trial, the Spanish carried out sentences on many of the remaining Indians. Oñate sentenced all men and women over twelve years of age to twenty years of servitude. Those men over twenty-five were to have half of one foot cut off. Children under twelve and old people were declared free, but the old people were put into the care of the Querechos (Apaches). Fray Alonso Martinez gained custodianship of the girls, sixty of whom he may have subsequently sent to convents in Mexico. Vicente de Zaldivar acquired custody of the boys.<sup>29</sup> Oñate and Zaldivar claimed that the Acoma, despite their bitter defeat at the hands of the Spanish, later welcomed them "with festivity and rejoicing."<sup>30</sup>

However, the Acoma wanted to have little to do with the Spanish. Since most of the Spanish settlements lay along the Rio Grande, sixty miles east of Acoma, the Acoma had their wish and made few contacts with the interlopers. As

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<sup>28</sup> J. Manuel Espinosa, The Pueblo Indian Revolt of 1696 and the Franciscan Missions in New Mexico: Letters of the Missionaries and Related Documents, (Norman: University of Oklahoma Press, 1988), p. 8.

<sup>29</sup> Minge, Acoma, pp. 13-14.

<sup>30</sup> Ibid, p. 15.

historian of Acoma Ward Alan Minge has correctly asserted, "The resultant isolation of Acoma is basic to understanding the land and its people throughout their history."<sup>31</sup>

The Acoma reconstructed their community on the mesa-top between 1629 and 1640, although no records remain to verify this. Acoma tribesmen that Oñate had sentenced to twenty years of slavery probably returned to Acoma after their period of servitude and participated in the rebuilding of the pueblo with those few they had left behind.<sup>32</sup>

Father Zarate Salmeron is said to have "pacified" the Acoma around 1620<sup>33</sup> and possibly served the pueblo from 1623 to 1626.<sup>34</sup> In his "Relacion," the father mentioned Acoma, but did not state that he had resided there as its priest.<sup>35</sup>

In 1629, Acoma received a full-time priest in the person of Fray Juan Ramirez, who founded Acoma mission. According to Acoma tradition, Fray Ramirez helped the Acoma in the rebuilding of their pueblo, teaching them woodworking

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<sup>31</sup> Ibid, p. 17

<sup>32</sup> Ibid, p. 20.

<sup>33</sup> White, Leslie A., The Acoma Indians: People of the Sky City, (Glorieta NM: the Rio Grande Press, Inc., 1973), first issued as part of the 47th Annual Report of the U. S. Bureau of American Ethnology, (Washington, D. C.: U. S. Government Printing Office, 1932), p. 27.

<sup>34</sup> Minge, Acoma, p. 20.

<sup>35</sup> Fray Geronimo de Zarate Salmeron, "Relacion, 1538-1628," C. F. Lummis, translator, Land of Sunshine, 11:336-346, 12:39-48, 104-113, 180-187, p. 182.

and the construction of houses using adobes of mud.<sup>36</sup> With labor from Acoma Pueblo, Ramirez built the church of San Esteban Rey (Saint Stephen the King) on the top of Acoma Mesa, within the village itself.<sup>37</sup> Ramirez's arrival and stay at Acoma began a long and, at times, painful relationship between the Indians and the Spanish. Some of this pain stemmed from the activities of the missionaries and their role in the colonization of New Mexico.

The missionaries, like Fray Ramirez, established themselves at a pueblo and attempted to affect change almost immediately upon arrival. While the Spanish Crown held title to the New Mexico province, local government of the pueblos rested in the hands of the Indians themselves. When a friar established a mission, the governor organized the pueblo into a self-governing political body and appointed officers from the natives.<sup>38</sup> The Indians continued to

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<sup>36</sup> Minge, Acoma, p. 20.

<sup>37</sup> Forrest, Earle R., Missions and Pueblos of the Old Southwest, (Cleveland: The Arthur H. Clark Co., 1929), pp. 162, 164; Fray Alonso de Benavides stated in his "Memorial of 1634" that Ramirez saved the life of a child, who had been bewitched by a sorcerer. He persuaded the mother to let him baptize the child so that "she might enjoy paradise." "[S]carcely had she received the waters of holy baptism when she became well and healthy. . . . This incident confirmed all those Indians of the truth of holy baptism, which they now believed and which was being preached to them." F. W. Hodge, George Hammond, and Agapito Rey, eds., Fray Alonso de Benavides' Revised Memorial of 1634, Coronado Cuarto Centennial Publications, vol. 4, (Albuquerque: University of New Mexico Press, 1945), pp. 72-73.

<sup>38</sup> Bolton, "The Mission," p. 60.

elect their own officials and neither the missionaries nor the encomenderos could intrude in the election of these officials or countermand the prerogative of the Pueblos to live under their own governmental body.<sup>39</sup>

This is not to say that some Spaniards did not try to influence the Pueblo governments through pressure on Pueblo leaders. In a petition to the king, Fray Alonso de Benavides, *custodio* of New Mexico from 1623 to 1629<sup>40</sup> asked that the governors be forbidden from deposing a pueblo chief or governor, since "the Indians greatly resent seeing their leaders and chieftains mistreated."<sup>41</sup>

At the same time the missionaries established a local pueblo government modeled on Spanish ideas, they gave title to a four league tract of land around the pueblo.<sup>42</sup> In many areas, encomenderos ignored the law prohibiting them from living within this area owned by the Indians.<sup>43</sup> Since most colonists lived within a fifty to eighty mile radius

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<sup>39</sup> H. Allen Anderson, "The Encomienda in New Mexico, 1598-1680," New Mexico Historical Review, 60(4):362.

<sup>40</sup> F. W. Hodge, George P. Hammond, and Agapito Rey, eds., Fray Alonso de Benavides' Revised Memorial of 1634, Coronado Cuarto Centennial Publications, vol. 4, (Albuquerque: University of New Mexico Press, 1945), pp. 2, 4; The chief clergyman of the Custody of New Mexico was called the *custodio*.

<sup>41</sup> Hodge, Hammond, and Rey, Benavides, p. 172.

<sup>42</sup> Bolton, "The Mission," p. 60; one league equals approximately 2.6 miles.

<sup>43</sup> Anderson, "The Encomienda," p. 362.

around Santa Fe, most of the Spanish depredations occurred within this limited area.<sup>44</sup> Acoma, located over seventy miles from the center of Spanish colonial influence, probably did not suffer the encroachment on their lands to which other pueblos fell subject.

In addition to Christianity and Spanish governmental styles, the missionaries attempted to teach the Indians the more basic elements of Spanish civilization. "Discipline and the elements of European civilization were imparted at the missions through religious instruction, through industrial training, and, among more advanced natives, by means of rudimentary teaching in arts and letters."<sup>45</sup>

One industry taught by the missionaries to the Pueblos was Spanish agriculture. Agricultural teaching was a part of the conversion program; it was a method through which the priests were able to interact with the Indians and the Franciscans, by teaching Spanish agriculture to the Acoma, sought to Europeanize them. The Spanish thought that they and their entire culture were superior to the Indians and their "barbarian" ways of life. Therefore, the goal and even the obligation of the missionary in New Mexico was to "civilize" the Indian by teaching him Spanish, converting him to Christianity, Hispanicizing his agriculture and

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<sup>44</sup> Espinosa, The Pueblo Indian Revolt of 1696, pp. 11, 28.

<sup>45</sup> Bolton, "The Mission," p. 55.



encompassing him as a citizen of the Spanish Empire.

The Spanish used several techniques to attempt to change the ways of life of the Pueblos and to civilize them. The first was force. This method entailed both the use of military might, as in the case of the Zaldivar Massacre of 1598 at Acoma, and individual punishment meted out by the missionaries in the form of whippings and beatings in an attempt to, primarily, eradicate native religious beliefs. At the same time, force reminded the Pueblos who had the superior firepower since the missionaries could call on the military.<sup>46</sup>

A decree of 1621 illustrated one example of a type of punishment inflicted on the Indians while, at the same time, forbidding it.

The practice of cutting the hair of Indians guilty of minor offenses was forbidden. This order was the result of a complaint that the friars had used this form of punishment "for errors and light faults." For the Indians this was a great affront, and as a result some of them had gone to live in the unconverted pueblo of Acoma, "returning to idolatry."<sup>47</sup>

Persuasion, another method used by the missionaries, included the giving of gifts, preaching, and teaching. The Pueblos received crop seeds, tools and livestock as gifts given by the missionaries in their attempts to persuade the

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<sup>46</sup> Spicer, Cycles of Conquest, p. 324; Dozier, Pueblo Indians, p. 50.

<sup>47</sup> Scholes, "Church and State," p. 155.

Indians of the benefits of becoming Christians and good Spanish citizens. The Franciscans used demonstration, as a part of the method of persuasion, throughout all the Pueblos. Through demonstration projects the missionaries and their assistants imparted their knowledge of Spanish agriculture to the Indians.<sup>48</sup>

By allotting plots of land from the Acoma to cultivate to support the missionaries, the Franciscan fathers demonstrated to the Pueblo Indians methods of Spanish agriculture. While demonstrating agricultural methods, the missionaries also instructed the Acoma in the use of the tools they introduced, and the care of the introduced livestock species and nicely provided for themselves in the process through the collection of tribute.<sup>49</sup>

Many of the materials used by the Franciscans in their missions in New Mexico had to be obtained from the Spanish colonies in central Mexico. In order to transport these materials to New Mexico, the Spanish Crown inaugurated a supply service in 1609. This service sent caravans of goods from Mexico to the New Mexican missions once every three years, although the reality of the situation meant that the

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<sup>48</sup> Spicer, Cycles of Conquest, pp. 326-327.

<sup>49</sup> Adolph F. Bandelier, Final Report of Investigations Among the Indians of the Southwest U. S., part II, Papers of the Archeological Society of American, America Series, vol. IV, (Cambridge:J. Wilson and Sons, 1890), p. 217.

missions did not receive supplies very regularly.<sup>50</sup> A statement of the supplies the missionaries were supposed to receive every three years, drawn up by Minister-Provincial Fray Francisco de Velasco, contained a list of a wide variety of goods, ranging from those necessary for the conduct of religious services to new clothes for the priests. The list contained many items of an agricultural nature as well, including; three adzes, and ten hoes for every friar, one mule, ten heifers and ten sheep for every friar.<sup>51</sup>

With determination, zeal, and an irregular supply of materials, the Franciscan missionaries of New Mexico set off to save the souls of their heathen charges by converting them to Christianity and making them productive members of the Spanish Colonial Empire. The friars hoped to accomplish their lofty goals, in part, through prostylization and teaching the Spanish style of agriculture.

Oftentimes, especially in the seventeenth century, the missionaries and their goals came into conflict with the Spanish settlers, especially the governors, and their goals. Each group saw the land and its inhabitants in different lights. The missionaries looked upon the Indians as children to be taught. The colonists, on the other hand, saw the Indians as field laborers or household servants. In-

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<sup>50</sup> France V. Scholes, "The Supply Service of the New Mexican Missions in the Seventeenth Century," New Mexico Historical Review, 5(1): p. 93-96.

<sup>51</sup> Scholes, "Supply Service," pp. 100-105.

deed, sometimes the land itself proved to be more important in the settlers' minds than the labor to till it.<sup>52</sup>

Because the colonists needed both land and labor, many yielded to the temptation of exploiting the Indians to work their fields, some of which the Spanish appropriated from the Indians themselves.<sup>53</sup> In the early years of the colony, the Spanish had a very small population, only 750 in 1630, 1500 in 1697 and 4448 in 1752,<sup>54</sup> they thus needed the Indians to labor for them. Land was plentiful, but because of the arid environment, most of it could not be farmed and the Spanish coveted Pueblo land because it could be farmed and was close to water.

In the mid-eighteenth century, Governor Thomas Velez Cachupin remarked that the province of New Mexico was the most fertile in all of New Spain. However, the Spanish did not own the richest soil, the Pueblos did.<sup>55</sup>

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<sup>52</sup> For an in-depth analysis of the conflict between the clergy and the government in seventeenth century New Mexico, see the articles by France V. Scholes, "Church and State in New Mexico," New Mexico Historical Review, 11(1):9-26, 11(2):145-173, 11(3):283-293, 11(4):297-349, 12(1):78-101 and "Troublous Times in New Mexico," New Mexico Historical Review, 12(2):134-174, 12(4):380-452, 13(1):63-84, 15(3):249-268, 15(4):369-417, 16(1):15-40, 16(2):184-205, 16(3):313-327.

<sup>53</sup> Scholes, "Church and State," p. 165.

<sup>54</sup> Espinosa, Pueblo Revolt of 1696, p. 11, 58; Anderson, "The Encomienda," p. 176.

<sup>55</sup> Marc Simmons, "New Mexico's Colonial Agriculture," Palacio, 89(1):6.

These Pueblo towns are located on the most fertile and richest soil of New Mexico with much land for cultivation and raising of all types of livestock. And the lands that each possessed before the Spaniards knew about them have not been altered.<sup>56</sup>

At times, the Spanish settlers attempted to wrest control of land away from the Indians by making secret grants. Benavides petitioned the crown to force the governors to issue these grants in public, with warning to the Indians who owned the land adjacent to the grant.

These grants are made in secret so that when the poor Indians want to return to their lands the Spaniards are already in possession of them, and from there they expand and add to their lands more than was given them. They force the Indians, by evil treatment and by losses to their cattle, to abandon their lands and to leave their possessions to the Spaniards.<sup>57</sup>

Inevitably, conflicts arose between the clergy and the Spanish colonists. In their efforts to alleviate the problems caused by the two opposing factions, the Crown dispensed a large amount of confusing and conflicting legislative acts, ostensibly designed to protect the natives. The end result reduced the Indians to the "status of [a] permanent legal minority..."<sup>58</sup>

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<sup>56</sup> Robert Ryal Miller, ed. and trans., "New Mexico in Mid-Eighteenth Century: A Report Based on Governor Velez Capuchin's Inspection," Southwestern Historical Quarterly, 1975/76, 79(2):175.

<sup>57</sup> Hodge, Hammond, and Rey, Benavides, p. 72.

<sup>58</sup> Schole, "Church and State," p. 20.

Because of the conflicts between the clergy and the secular government in New Mexico, the viceroy in Mexico issued a series of decrees advising each party to keep to its own sphere of work and not to interfere in the affairs of the other. Thus, neither the clergy nor members of the provincial government could remain in pueblos during election days as the priests had complained that secular officials had attempted to influence the outcome of those elections of native officials. The Spanish were forbidden to graze their flocks within three leagues of pueblos to avoid the destruction of Pueblo crops while the missionaries were forbidden to interfere in the collection of tribute from those pueblos already subject to payment of tribute.<sup>59</sup>

The colonists had levied tribute from the Pueblos since almost the first day of their arrival in New Mexico. At first, the tribute insured the survival of the colony. Oñate distributed the articles taken from the Indians to the colonists. Food comprised most of these items; the Spanish collected five to six thousand *fanegas* of maize and beans, as well as meat.<sup>60</sup>

But the collecting of tribute continued throughout the Spanish period. Early in the colonial era, certain clergymen, in attempts to lessen the imposition on the natives, fought to curtail the gathering of tribute from certain

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<sup>59</sup> Scholes, "Church and State," pp. 154-155.

<sup>60</sup> Anderson, "The Encomienda," p. 357.

segments of the Indian population. Fray Alonso de Benavides was one of the foremost among these reform-minded clerics. In a letter to the king, Benavides stated some of the problems with the system and solutions to those problems.

It is requested that all the *caciques*, chief captains, governors, alcaldes, and fiscales of the churches, on account of the big tasks they perform for the republic and the service of your Majesty, be exempt from tribute and personal service while they hold their offices. They are so busy in their offices that even their fields are cared for by others, as they are unable to do it themselves. The native lords and chieftains resent very much that they are compelled to pay tribute.<sup>61</sup>

Benavides also asked the King to advise the governors that newly converted Indians would not be asked for tribute or to render personal service for ten years after that tribe had been baptized.<sup>62</sup> He stated:

...the main and general answer given to us by those pagans for not becoming Christians is that when they do become Christians they are at once compelled to pay tribute and render personal service.<sup>63</sup>

The missionaries, however, collected tribute as well, although more for their own consumption than for profit.

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<sup>61</sup> Hodge, Hammond, and Rey, Benavides, p. 170.

<sup>62</sup> Ibid, p. 176.

<sup>63</sup> Ibid, p. 176.

Fray Francisco Anatasio Dominguez who visited Acoma on December 17, 1776, during a tour of the missions, recorded the tribute given by the Acoma to their priest.

The father of this mission [Laguna] does not have as much trouble as those mentioned before, because here (the same is true of Acoma and Zuni) the father is given a sheep a week, and *frijoles* [beans], broad beans, eggs, lard, salt, flour, a tallow candle, and milk in the summer every day. The fiscal for the week collects all this from the pueblo...<sup>64</sup>

The Pueblos revolted several times throughout the seventeenth century. The Acoma themselves revolted in 1629, 1645, and almost rebelled again in 1650. The Pueblo Revolt of 1680 threw the Spanish out of New Mexico for 12 years.<sup>65</sup> Indeed, the Spanish could not regain control of Acoma until 1699, when Governor Cubero finally performed the Act of Obedience, requiring loyalty to the Spanish Crown, at Acoma.<sup>66</sup>

The Pueblos had revolted under the repressive yoke of Spanish colonial rule which, despite the assurances of the "New Laws and Ordinances," treated the Indians less than well. The well-meaning Franciscans also share in the blame for stirring unrest. The role as strict disciplinarians,

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<sup>64</sup> Eleanor B. Adams and Fray Angelico Chavez, eds. The Missions of New Mexico, 1776: A Description by Fray Anatasio Dominguez, and Other Contemporary Documents, (Albuquerque: University of New Mexico Press, 1956), p. 186.

<sup>65</sup> Gunn, Scatchen, pp. 39-40.

<sup>66</sup> Minge, Acoma, p. 32.



often using corporal punishment to chastise errant Indians, did little to endear them to their wards.<sup>67</sup> In the 1650s, one Franciscan missionary among the Hopi was convicted of putting hot turpentine on an Indian accused of idolatry. The Hopi died and the court removed the missionary from his office.<sup>68</sup>

The Pueblo religious leaders had, since the beginning of missionary activity, been at odds with the Franciscans for the latter's opposition to traditional religious authority and ceremonies.<sup>69</sup> Franciscans were "horrified" by Kachina masks and smashed them at every opportunity, thus causing religious leaders much anguish.<sup>70</sup> To smash a Kachina mask would be to a Pueblo Indian like splintering a crucifix would be to a Christian.

Excessive tribute was another factor in the hostilities the Pueblos had for the Spaniards.<sup>71</sup> For close to one hundred years, the Spanish had forced the Indians to give them food and other items. In the late seventeenth century, New Mexico experienced several years of intense drought that

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<sup>67</sup> Dozier, The Pueblo Indians, pp. 54-55; Spicer, Cycles of Conquest, p. 326.

<sup>68</sup> Spicer, Cycles of Conquest, p. 325.

<sup>69</sup> Minge, Acoma, p. 23.

<sup>70</sup> Spicer, Cycles of Conquest, p. 326.

<sup>71</sup> Anderson, "The Encomienda," p. 372.

caused many hardships to the Indians.<sup>72</sup> Not only did they have to feed themselves from a land in the throws of a severe drought, but they had several thousand free-loaders living near them who wanted food as well.

The continuing Church-State dispute was also a major factor in the Revolt.<sup>73</sup> Constant bickering between governors and missionaries emboldened the Pueblos to kill friars, as in the case of Taos Indians in the 1640s.<sup>74</sup> The feud caused the Spanish population to divide into two factions, thus presenting a splendid opportunity for the Pueblos to attempt to force their unwanted guests out of their territory.<sup>75</sup>

A Tewan Indian named Po-pe fomented and led the rebellion from Taos, where he had taken refuge after prosecution by the Spanish authorities for various crimes, including witchcraft. Po-pe's plan called for a concerted effort by all of the pueblos to drive the Spanish from New Mexico on the eighteenth of August, 1680. The Spanish discovered the plot on the ninth, whereby the Indians immediately set about

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<sup>72</sup> Anderson, "The Encomienda," p. 369; Espinosa, Pueblo Revolt of 1696, p. 31.

<sup>73</sup> Anderson, "The Encomienda," p. 372; Espinosa, Pueblo Revolt of 1696, p. 29.

<sup>74</sup> Espinosa, Pueblo Revolt of 1696, p. 30.

<sup>75</sup> Ibid, pp. 31-32.

their task of destroying or driving out the Spanish.<sup>76</sup> The Spanish had a population of approximately twenty-nine hundred, mostly living along the course of the Rio Grande whereas the Pueblo war chiefs commanded around six thousand warriors, many of whom were excellent horsemen. In addition, thirty-three Franciscan friars lived at missions in the pueblos, including Acoma.<sup>77</sup>

At Acoma, when the inhabitants learned that the rebellion had begun and the Pueblos were killing missionaries, they seized their own friars, as well as an old mestizo (mixed blood) woman. The Acoma stripped these three of their clothing and dragged them around the pueblo by a rope, while the Indians beat them. Eventually, the Acoma took them to the convent, stoned them to death and pierced them with lances, then threw their bodies in a deep pit.<sup>78</sup> This was the only part the Acoma could play in the Revolt since they were so far from the other pueblos and from the majority of Spanish colonists.<sup>79</sup> That the Acoma killed their missionaries after humiliating and torturing them, then defiled their bodies, dramatically illustrates the anger

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<sup>76</sup> Fray Silvestre Velez de Escalante, letter written April 2, 1778, anonymous translator, Land of Sunshine, 12(1900):247-250, 309-314, p. 249; Espinosa, Pueblo Revolt of 1696, pp. 33-34.

<sup>77</sup> Espinosa, Pueblo Revolt of 1696, p. 33.

<sup>78</sup> Ibid, pp. 35-36.

<sup>79</sup> Minge, Acoma, p. 24.

towards the Spanish that had built up over the years.

The Revolt forced the Spanish out of New Mexico for twelve years, but they eventually returned to reclaim what they considered their land. Governor Diego de Vargas Zapata Lujan Ponce de Leon organized and carried out the Reconquest and Recolonization of New Mexico in 1692. In that year, through diplomacy and very little bloodshed, Vargas succeeded in persuading twenty-three pueblos to join again in Spain's empire.<sup>80</sup> By 1694, the settlers had reoccupied Santa Fe after a quickly crushed attempt by the Tewa and Tano to rebel and drive the Spanish once more from the area.<sup>81</sup> But Vargas's problems with rebel were not yet over.

Between 1694 and 1695, missionaries began to return to some of the pueblos and the Spanish settlements reached some level of normalcy. By December of 1695, however, the missionaries realized that the Indians were planning another uprising. The harsh winter of 1695-96 put incredible burdens on the Spanish settlers and the Pueblo leaders perceived that this time would be good for rebellion.<sup>82</sup> At this time, the Acoma joined forcefully with the other hostile pueblos and on June 4, 1696, the Pueblos revolted. However, by August, Vargas had succeeded in subduing most of

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<sup>80</sup> Espinosa, Pueblo Revolt of 1696, p. 39.

<sup>81</sup> Ibid, pp. 44, 43.

<sup>82</sup> Ibid, p. 47.

the rebel Indians. An expedition against Acoma in that month met with failure, since the Indians refused to come down from the mesa.<sup>83</sup> Peace overtures from Acoma waited for several more years.

After the Reconquest, life returned to pre-Revolt status. But, the Revolt had accomplished a few major victories. The encomienda system in New Mexico was dead, no longer would the Pueblos pay tribute to semi-feudal overlords.<sup>84</sup> The Pueblos continued to support their friar, as the relation of Fray Dominguez illustrates. Except for recurring Apache and Navajo raids,<sup>85</sup> life continued as usual.

However, in the eighteenth century, the Franciscan missionaries could not regain the fervor they had exhibited in the seventeenth. Acoma Pueblo, as well as the other western pueblos, were almost abandoned by the Spanish missionaries. Franciscans did manage to reestablish a mission at Acoma, but keeping a padre in residence proved to be quite a chore.<sup>86</sup>

In 1821, on September 16, Mexico won her independence

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<sup>83</sup> Espinosa, Pueblo Revolt of 1696, pp. 50, 54; Minge, Acoma, p. 27.

<sup>84</sup> Anderson, "The Encomienda," p. 372.

<sup>85</sup> See Ward Alan Minge, "Record of Navajo Activities Affecting the Acoma-Laguna Area, 1746-1910," Acoma-Laguna Exhibit #530 in docket #229 for Indian Claims Commission Case, "Pueblo de Acoma vs U. S. A."

<sup>86</sup> Dozier, Pueblo Indians, p. 86.

from Spain, thus producing many political changes for Mexico and the Americas. On the northern periphery of Mexico, however, the Pueblo of Acoma did not feel these changes. The Acoma continued to live their lives untroubled by the change in administration.<sup>87</sup> Mexican rule of the area, however, was short-lived. In the Treaty of Guadalupe Hidalgo in 1848, which ended the Mexican American War, Mexico ceded the area to the United States.<sup>88</sup>

In conclusion, the period of Spanish colonization witnessed few changes in Acoma traditions and the control of their own land. Despite the efforts of the missionaries and the Spanish Crown, they could not turn the Pueblo Indians into good, Christian, Spanish citizens. The Acoma celebrate some of the Christian holidays, such as the Feast of San Estevan and Christmas.<sup>89</sup> Other celebrations continue from the pre-Spanish period. One occurs during the period between July 10-14 and another on the first weekend of October. Very little is known about these ceremonies, other than that they are rain-bringing ceremonies, as the pueblo is closed to non-Acoma during these times.<sup>90</sup> The Acoma freely

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<sup>87</sup> Minge, Acoma, p. 42.

<sup>88</sup> Spicer, Cycles of Conquest, pp. 4-5.

<sup>89</sup> Mary Sedgewick, Acoma, the Sky City, (Cambridge: Harvard University Press, 1926), p. 253; Minge, p. x.

<sup>90</sup> Minge, Acoma, p. x; Ester Gayo Maring, "The Religio-political Organization, Customary Law and Values of the Acoma (Keresan) Pueblo Indians: A Study in Acculturation and Social Control," PhD dissertation, University of Indiana,

mix Christian and native beliefs.

The land that the Acoma farmed prior to the colonization of New Mexico continued to be in their hands when the United States took control of the territory. However, the Spanish did influence the manner that the Acoma tilled the soil and what they cultivated.

Agriculture and Economy at Acoma  
in the Spanish Colonial Period  
1598-1821

Acoma contact with the Spanish through trade and, especially, through interaction with the missionaries stationed within the community itself brought about further changes in the agricultural economy of the pueblo. The Acoma farmers continued to plant and to harvest their traditional crops, but incorporated only certain crops introduced by the Franciscan friars. They also became pastoralists and began to raise a wider variety of livestock that the friars brought and gave to them. New and different tools increased productivity thereby providing a greater surplus of produce that the Acoma traded with their traditional partners of exchange, the Navajo and Apache, as well as in the new market of the Spanish colonists.

Despite these seemingly important material introductions, substantial changes in Acoma economy and society did not occur. Rather, the Acoma incorporated those elements in Spanish society that they wanted and for which they had a use and made them their own. The Acoma traditionally resisted much change, seeking rather to fit new practices in



the existing order so that too much change would not upset the harmonious balance of their universe.<sup>1</sup>

Such incorporation was not new to the Acoma. Their ancestors had practiced limited borrowing from other cultures for hundreds of years. Such changes as the planting of wheat or the herding of sheep reflect surface, material changes, while the fundamental structure of Acoma culture remained true to Acoma conditions prior to the Spanish Colonial Period.

The first full-time missionary to live at Acoma was Fray Juan Ramirez. He arrived at Acoma in 1629 and, according to Acoma tradition, helped to rebuild the pueblo. With the labor of the Acoma, Fray Ramirez built a large mission church on the mesa top, which is still standing.<sup>2</sup> This Franciscan friar began a program to 'civilize' the Acoma people which was continued by those missionaries who followed him.

The Franciscan missionaries who went to Acoma to teach Christianity to the inhabitants of that community taught the Acoma Spanish farming methods. In order to teach Spanish agriculture, the friars introduced Spanish plants, as well as plants with which the Spanish had become familiar during

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<sup>1</sup> Ester Gayo Maring, "The Religio-political Organization, Customary Law and Values of the Acoma (Keresan) Pueblo Indians: a Study in Acculturation and Social Control," PhD dissertation, University of Indiana, 1969), pp. 281-282.

<sup>2</sup> Ward Alan Minge, Acoma, Pueblo in the Sky, (Albuquerque: University of New Mexico Press, 1991), p. 20.

their time in Mexico. The missionaries also brought in Spanish tools to facilitate their agricultural endeavors. Additionally, they introduced different species of livestock, both to help with agricultural pursuits and as food.

Many of the materials used by the Franciscans in their missions in New Mexico had to be obtained from the Spanish colonies of central Mexico. In 1609, in order to transport these materials to New Mexico, the Spanish Crown inaugurated a supply service. This service sent caravans of goods from Mexico to the New Mexican missions once every three years, although the reality of the situation meant that the missions did not receive supplies very regularly.<sup>3</sup> A statement of the supplies the missionaries were supposed to receive every three years, drawn up by Minister-Provincial Fray Francisco de Velasco, contained a list of a wide variety of goods, ranging from those necessary for the conduct of religious services to new clothes for the priests.<sup>4</sup> The list contained many items of an agricultural nature as well, including: three adzes and ten hoes for every friar,<sup>5</sup> one mule, ten heifers and ten sheep for every friar.<sup>6</sup> The friars gave these tools and animals, as well as seeds, to the

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<sup>3</sup> France V. Scholes, "The Supply Service of the New Mexican Missions in the Seventeenth Century," New Mexico Historical Review, 5(1):93-96.

<sup>4</sup> Ibid pp. 100-105.

<sup>5</sup> Ibid p. 103.

<sup>6</sup> Ibid, pp. 104-105.

Indians, to be used in their farms. With these tools and animals, the priests taught Spanish agriculture to the Acoma.

But one facet of the Acoma social structure that underwent little change after Spanish colonization was the division of the usable and arable land among the inhabitants of the community. Prior to Spanish colonization, each pueblo claimed an area of land around the village, although this area was usually not well-defined. This situation did not change. Within each pueblo's tract, the men were at liberty to till a field and thereby gained control of that field. When the occupier of the field died, the land passed to his son or sons, although strict rules of inheritance did not exist. The holder of the field could also exchange or barter the control of the field, but only to other members of the village, or even only to other members of his clan.<sup>7</sup>

While land continued to be "communally owned", the idea that the land could be given to another person in exchange for money had gained a foothold. According to anthropologist Leslie White, a family left the reservation shortly before his arrival in the late nineteen-twenties and, "the head of the family 'sold' his land to other men in Acomita.

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Adolph Bandelier, Final Report of Investigations Among the Indians of the Southwest U. S., Part II, Papers of the Archeological Institute of America, America Series, vol. IV, (Cambridge: J. Wilson and Sons, 1890), p. 161.

The man said he had a right to do this because he had spent much money and labor in improving the land, clearing it of brush, rocks, etc., and fencing it. And he did receive compensation for it."<sup>8</sup> Whether the sale of land represents a change that took place during the Spanish period or the American period is unclear. White's narrative suggests that the exchange of land for money was something new. If the Acoma began to sell their land to each other during the American period, changes in land tenureship during the Spanish period were minimal.

According to contemporary sources, the village owned the land and individuals used the land with the consent of the *cacique*. The individual farmers could continue to cultivate the land as long as they needed and as long as they continued to undertake their community duties.<sup>9</sup>

Leslie White's description of Acoma property rights and land tenure, observed during the late nineteen-twenties and early thirties, is particularly illuminating.

Theoretically, all land is communally owned, but each farm, however, is said to "belong" to some particular family.

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<sup>8</sup> Leslie A. White, The Acoma Indians: People of the Sky City, (Glorieta, NM: the Rio Grande Press, Inc., 1973), p. 34. First published as part of the 47th Annual Report of the U. S. Bureau of American Ethnology, (Washington D. C.: U. S. Government Printing Office, 1932).

<sup>9</sup> Adolph F. Bandelier and Edgar L. Hewitt, Indians of the Rio Grande Valley, (Albuquerque: University of New Mexico Press, 1937), p. 43.

This means that they are using it and that they have the right to continue to use it, but should they neglect the land and allow it to lie idle someone else may ask the *cacique* [the chief person of authority in the pueblo] to allot the land to him. And the *cacique* has the authority to do this.

Usually, the land stayed within the family, to be divided among the children upon the death of the father.<sup>10</sup>

As Gallegos witnessed in the pueblo of Malaga, the *cacique* controlled access to the field. He then gave control of the field to those men who needed it, especially newlyweds.<sup>11</sup> The control of the productive land by the *cacique* did not change. White reported the same situation at Acoma in the first quarter of this century. However, by the time White wrote, it is evident that some European notions of land ownership had displaced the more traditional notions. There are several possible explanations for this change. The missionaries probably encouraged privatization of pueblo land in an attempt to further Europeanize the Indians. Privatization might also have resulted as a natural offshoot of increasing involvement in a growing free-market economy in colonial New Mexico.

Amateur anthropologist George Wharton James stated in

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<sup>10</sup> White, The Acoma Indians, p. 34.

<sup>11</sup> George P. Hammond and Agapito Rey, The Rediscovery of New Mexico, Coronado Cuarto Centennial Publication 1540-1940, vol. III, (Albuquerque: University of New Mexico Press, 1966), p. 102.

1920 that both the men and women tended the fields and, remarked James, "the women are as proficient farmers as the men." However, the hunting of animals fell to the men, a "duty and privilege," that James believed the men did not mind.<sup>12</sup> Regardless of age or sex, everyone helped work the fields. Men, women, and children old enough to do so, worked. "The men do most of the heavy field work," stated White, "but women often perform the same tasks at planting and harvesting. The women do most of the garden work, although the men share in this, too."<sup>13</sup>

Ordinary farming activities in the fields were performed individually, each farmer bore responsible for his own plot of land.<sup>14</sup> However, it was customary among the Pueblo Indians in general for everyone to help prepare, plant, hoe, irrigate and harvest the *cacique's* fields, which, in reality, was a community field. The people performed this duty for ritualistic reasons.<sup>15</sup> They also did this because the *cacique* busied himself with the affairs of the pueblo. The people took care of his fields out of respect for his endeavors on their behalf so that he would not

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<sup>12</sup> George Wharton James, Land of The Delight Makers, (Boston: the Page Company, 1920) p. 137.

<sup>13</sup> White, The Acoma Indians, p. 33.

<sup>14</sup> Bandelier and Hewett, p. 39.

<sup>15</sup> Edward F. Castetter and Willis H Bell, Pima and Papago Agriculture, (Albuquerque: University of New Mexico Press, 1942), p. 229.

have to worry about his land.

That the women began to work in the fields represents a substantial change in the social structure of Acoma Pueblo. Prior to Spanish colonization, the field was the property of the man. Rather, the man had tenure of the field. By the time of White's observations, women had begun to gain some access to the fields. This may be due, in part, to the changing role of women in the system of labor. In pre-Hispanic times, the women did not work in the fields; that was the domain of her husband. With the introduction of sheep by the missionaries and the need of the man to guard and care for the sheep herd, the woman became more involved in the production of crops. This involvement led, over time, to women gaining tenure of the fields where they worked.

The Acoma continued to use irrigation technology throughout the Spanish Colonial Period. The Acomas continued to irrigate their crops because, in their arid environment, they could not rely wholly on rainfall to provide adequate water. The Spanish did not interfere with the irrigation since they themselves did not have a better method of watering their gardens.<sup>16</sup>

At different times, various priests visiting Acoma remarked on the Acoma irrigation systems employed in the

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<sup>16</sup> Marc Simmons, "New Mexico's Colonial Agriculture," Palacio 89(1):4.

fields. The Acoma maintained fields in two locations, both along rivers, the Rio Cubero and the Rio San Jose. In 1749, Fray Andres Varo reported that the Acomas traveled seven leagues from the pueblo to irrigate fields along the Rio Cubero, located approximately twelve miles north of Acoma.<sup>17</sup> Fray Manuel de Trigo stated in 1754 that the fields of the Acomas lay four leagues from the pueblo, on the Rio San Jose, but all the fields depended on rain since there was no irrigation system "or other lands for cultivation."<sup>18</sup> De Trigo probably did not mention that the fields used irrigation simply because he traveled along the wrong path and could not see them.

Fray Francisco Atanasio Dominguez's description of the Acoma fields in 1776 provides a look at the locations of those fields, as well as which fields have been irrigated.

The Indians have lands wherever the cañadas [canyons] in the south, east, north, and northwest...provide arable level ground. All are completely dependent on rain, for although there are two small springs, they only suffice as drinking water for some small livestock. They have made a low bank of earth around them for this purpose. When it rains the *milpas* [fields] do well, but if rain is completely lacking, there are hardships, as has been the case for three years now, when there has been great drought.

Three leagues up the cañada from Laguna and 5 or 6 northeast of Acoma...there is a place called Cubero in a cañada which runs between mesas from south to north.

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<sup>17</sup> Robert L. Rands, "Acoma Land Utilization: An Ethnohistorical Report," Indian Claims Commission Case "Pueblo de Acoma vs U. S. A.," docket no. 266, p. 29.

<sup>18</sup> Rands, "Acoma Land Utilization," p. 29.



It is about a league long from south to north and about half a league wide from east to west. The Indians sow all they can in it on both sides of the river [the Rio Cubero] that flows to Laguna; they irrigate with it and harvest very reasonable crops. In this very place they plant for the convent wherever the father chooses, usually harvesting 40 fanegas of wheat, the same amount of maize, and a little of each kind of green vegetable.<sup>19</sup>

In 1782, Fray Agustin de Morfi reported on the extent of the Acoma fields and their irrigation practices.

At the bottom of the penol itself a plain is formed surrounded by mesas...The plain abounds in pasture lands where the Indians of the pueblo have their cultivated fields....

These Indians have another large cultivated field of two short leagues wide from east to west and a half a league long from north to south in the spot which they call De Cuero, five leagues to the west of La Laguna. [Probably along the Rio San Jose]. It is the best which they possess, as much because of the good quality of the land as because they utilize the irrigation which the spring of El Gallo makes easy for them. Notwithstanding they do not till these fields because invasions of the Gila Apaches have killed in them many of their people and run off many herds.<sup>20</sup>

The irrigation systems used by the pueblos could be described in much the same terminology as the circulation system of the human body without the circulatory element. The main artery, the *acequia madre*, drew from the source and

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<sup>19</sup> Eleanor B. Adams and Fray Angelico Chavez, The Missions of New Mexico, 1776: A Description by Fray Atanasio Dominguez, and Other Contemporary Documents, (Albuquerque: University of New Mexico Press, 1956), p. 194.

<sup>20</sup> Fray Juan Agustin de Morfi, "Geographical Description of New Mexico," in Forgotten Frontiers; A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Alfred Barnaby Thomas, ed. and trans., (Norman: University of Oklahoma Press, 1932), p. 105.

ran the length of the irrigated fields. This main canal could be fourteen or fifteen feet wide and two to four feet deep. Secondary canals or *sangria* (bleeders) led from the *acequia madre* into the irrigated fields. Flood gates erected at each end of the secondary canal controlled water flow.<sup>21</sup> An additional benefit of irrigation, besides providing water for the crops, was a renewal of the soil. As water from the irrigation canals flowed across the fields, it could deposit up to one quarter inch of silt, thus replenishing the fertility of the soil.<sup>22</sup>

Early Spanish ordinances defined responsibility for the regulation and distribution of water used for irrigation. In the Spanish towns, the ditch chief or *mayordomo* held responsibility for the construction and maintenance of canals used to carry water from the source as well as distribution of that water. The pueblos also used the Spanish water management procedures, possibly because they had no choice in the matter. However, in the pueblos two officers divided the responsibilities held by a single Spanish official. The ditch chief supervised construction and maintenance of the canals, while the *cacique* controlled dispensation of the water. The construction and maintenance of the canals, especially the main irrigation canal, the *acequia*

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<sup>21</sup> Alvin R. Sunseri, "Agricultural Techniques in New Mexico at the Time of the Anglo-American Conquest," Agricultural History 47(4):331.

<sup>22</sup> Simmons, "Colonial Agriculture," p. 6.

*madre*, were of a communal nature. Everyone suspended their regularly duties and work at mid-morning to construct or repair the irrigation system.<sup>23</sup>

The Acoma continued to use the Spanish system of water control through the second quarter of the twentieth century. The governor organized the pueblo residents for service in the repair and maintenance of the irrigation ditches, although he sometimes relegated this responsibility to the ditch boss.<sup>24</sup> The *mayordomos*, for four held that position in the middle years of this century, were elected to care for the irrigation canals. They controlled ditch maintenance and "regulate[d] the water supply after the water is flowing."<sup>25</sup>

Clearly, irrigation practices at Acoma remained undeviating from their pre-Spanish norms throughout the Spanish Colonial Period. The Acoma had practiced irrigation prior to the entrance of the Spanish into New Mexico and continued to do so after the Mexicans had relinquished their claim to the territory. The Acoma did learn better water-use management from the Spanish, but this represents only an improvement in management rather than a radical change in tech-

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<sup>23</sup> Sunseri, "Agricultural Techniques in New Mexico," pp. 330-331.

<sup>24</sup> S. D. Aberle, "The Pueblo Indians of New Mexico: Their Land, Economy and Civil Organization," American Anthropologist, October, 1948, no. 4, part 2, p. 33.

<sup>25</sup> Ibid p. 43.

niques.

The tools the Spanish introduced to Acoma, tools such as the plow, as well as improvements on implements with which the natives were already familiar, enhanced the Acoma tool chest. The Pueblos already used hoes of stone and wood, but the durable metal tools introduced by the Spanish, as well as new tools, greatly helped the Indian farmers. These new tools, and improvements on old ones, helped Acoma farmers by increasing productivity and decreasing the amount of manual labor necessary to cultivate a field, while possibly helping to stimulate an increase in the amount of land that could be feasibly cultivated.

The most important tool Spanish settlers used and the missionaries introduced to the Pueblos was the plow. Because of the scarcity of metal, many Spaniards during the colonial period built plows that were nothing more than the crotches of trees, with one branch for the body and the other for the handle.<sup>26</sup> Sometimes the Spanish fashioned plows out of two sticks, the one that was used as the body shod with a metal tip called a *reja*.<sup>27</sup> However, these metal tips were frequently not used because of the expense. The farmers fastened a beam, resembling a wagon tongue, to the plow and harnessed that to a team of oxen. One man

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<sup>26</sup> Sunseri, "Agricultural Techniques in New Mexico," p. 334-335.

<sup>27</sup> Simmons, "Colonial Agriculture," p. 5.

guided the oxen team and another tended the plow. One disadvantage with this plow was that it made a very shallow furrow, frequently no more than six inches deep. More advanced, two-handed plows with a steel moldboard did not reach New Mexico until the 1840s, when American traders brought them over the Santa Fe Trail.<sup>28</sup>

In 1885 and 1886, Captain John Gregory Bourke, while on special assignment, journeyed through New Mexico in search of ethnological material.<sup>29</sup> A short ways from Acoma he saw Indians "plowing with the rude wooden instruments of this country. This was fastened to the horns of a pair of small oxen, driven by one of the Indians and led the other."<sup>30</sup>

Other tools introduced by the Spanish were even simpler than their plow. One such tool consisted simply of a heavy log roller pulled by an ox that served to compact the soil and level the field. The harrow was a similar instrument that the farmers used to break up clods of dirt and cover seeds in their furrows. It was merely a squared beam with wood or iron teeth pulled by an ox.<sup>31</sup>

Another tool that the Spanish brought with them was the coa, consisting of a iron blade, forty centimeters in

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<sup>28</sup> Simmons, "Colonial Agriculture," p. 9; Sunseri, "Agricultural Techniques in New Mexico," p. 334-335.

<sup>29</sup> Lansing B. Bloom, "Bourke on the Southwest," New Mexico Historical Review 1933, 8(1):6, 8.

<sup>30</sup> Bloom, "Bourke on the Southwest," 1936, 11 (1):106.

<sup>31</sup> Simmons, "Colonial Agriculture," p. 9.

length, shaped somewhat like a wide, short sickle with a long wooden handle mounted in a socket. The coa is an all-purpose tilling tool used in much the same fashion as a hoe. The Spanish used the coa to "hill" corn, in other words, to mound earth around the base of a corn stalk, thus providing extra support for the plant against the wind.<sup>32</sup>

The introduction of the plow and other Spanish tools played an integral part in the transformation of Acoma agriculture. However, the use of metal tools began slowly and only accelerated as access to those tools became easier and more reliable. Metal tools did not become common to the Acoma farmer until the 1800s and some Acomas continued to use many stone tools well into the twentieth century.<sup>33</sup>

In the early twentieth century, George Wharton James saw digging sticks in use similar to those used by the Acoma before the Spanish Conquest.

To see a man planting corn with his rude stick shovel-- a smoothed-off bough from a tree, with the lower end broad and sharpened so that it can be thrust into the ground--is to wonder how results can be produced with such primitive appliances.<sup>34</sup>

The introduction of new tools to the Acoma by the Spanish produced limited changes in Acoma agriculture. The

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<sup>32</sup> Ibid p. 8-9.

<sup>33</sup> Dittert, Alfred E., "Culture Change in the Cebolleta Mesa Region, Central Western New Mexico," PhD. dissertation, University of Arizona, 1959, p. 570.

<sup>34</sup> James, Land of the Delight Makers, p. 188.

Acoma had only limited access to metal tools, the most important innovation in the tool chest, until the nineteenth century. The Spanish themselves had only limited access to metal tools. Both of these groups received metal tools in greater quantities only after the opening of the Santa Fe Trail, which provided them with an avenue to American manufactured merchandise. The plow, however, produced more substantial changes.

With the plow, the Acoma farmer could cultivate a greater amount in less time than with only his old hoe and digging stick. The Acoma still used these two ancient tools, as illustrated by James's account and photographs from the late nineteenth century.<sup>35</sup> But, the plow became a dominant tool for the Acoma to break the soil in order to cultivate their traditional crops, as well as those brought by the Spanish. The plow and oxen team allowed the Acoma farmer to turn more soil than with only his hoe. The main function of both of these implements was to break up the soil, thus allowing the farmer to plant a seed in ground loose enough for it to take root. Both the hoe and plow did this, but, obviously, a man with oxen and a plow could cover more ground than one with a hoe.<sup>36</sup>

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<sup>35</sup> Charles Lummis, "Acoma Farmer," photograph, 1892, as reproduced in M. K. Keegan, Enduring Cultures: A Century of Photography of the Southwest Indians, (Santa Fe: Clearlight Publishers, 1990), plate 43.

<sup>36</sup> Michael Partridge, Farm Tools Through the Ages, (Boston: New York Graphic Society, 1973), p. 36.

When the Franciscan fathers came to Acoma, they brought with them new crops. The introduction of new crops had several effects. New crops intensified agricultural productivity and also expanded the need for arable land. Additionally, a wider variety of crops provided relief from the failure of the crops the Acomas raised before Spanish colonization. Finally, the introduction of additional crops helped to diversify the diet of the Acomas.<sup>37</sup>

Not only did these crops come from the friars' native Spain, but from the Spanish possessions in Mexico as well. From these two places, the missionaries carried wheat, barley, oats, watermelons, muskmelons, peaches, apricots, apples, pears, grapes, peas and other vegetable seeds to the Acoma.<sup>38</sup> All these crops came from Spain. But, during the one hundred years that Spain controlled Mexico prior to the colonization of New Mexico, Spaniards learned how to cultivate a wide variety of plants native to the New World. The friars brought several of these with them to New Mexico. The Spanish introduced chilies, tomatoes, different varieties of corn and Mexican varieties of beans, as well as tobacco. One variety of Mexican corn, Cristolina de Chihuahua, is thought to have rapidly cross-pollinated with varieties native to the Southwest, thus producing a hybrid

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<sup>37</sup> Simmons, "Colonial Agriculture," p. 5.

<sup>38</sup> Douglas Hurt, Indian Agriculture in America, (Lawrence: University of Kansas Press, 1987), p. 43; Bandelier, p. 210.



that increased crop yields. Later on in the colonial period, the Spanish introduced the many-rowed Mexican Dent corn variety. This variety had a major impact on native corn, much like the Cristolina variety, and is the ancestor of the widely-used, modern Corn-belt Dent variety.<sup>39</sup>

Corn continued to be a major food item in the Acoma pantry. Corn came in many different forms at Acoma, each with its own name. *Kashaish* is white corn meal while *hati* is made of corn soaked in pots until it sprouts, takes in water and sweetens. The corn is then sun-dried and ground, yielding a sweet, yellowish flour. *Skekaiousa hati* is sweet corn roasted in earth, then ground.<sup>40</sup> The corn meal was used primarily in the making of *guayaves*, or wafer bread, similar to Hopi *piki* bread.<sup>41</sup> The Acomas continued to consume much beans and squash. However, other crops, introduced during the Spanish Period gained more and more favor in the Acoma diet.

The Acomas continued to plant the American Triad (corn, squash, and beans) after the establishment of the mission at Acoma. To their traditional crops the Acomas added those crops, (wheat, barley, oats, peaches, apricots, and other fruits, chilies, tomatoes, new bean varieties, melons, and

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<sup>39</sup> Simmons, "Colonial Agriculture," pp. 4-5.

<sup>40</sup> White, "New Material from Acoma," U. S. Bureau of American Ethnology, Bulletin no. 136, (Washington, D. C.: U. S. Government Printing Office, 1943), p. 349.

<sup>41</sup> Ibid p. 338.

other vegetables) introduced by the missionaries. Some of these crops became minor supplemental items in the Acoma diet while others, notably peaches, became important to the diet and to the economy of the pueblo as an item of trade. Exactly when the mission fathers introduced these crops to their wards is unclear, the documentation is sadly lacking, yet reports made after the Pueblo Revolt of 1680, by both Spaniards and Americans, indicate that the Acomas did not accept some crops, especially wheat, wholeheartedly.

Much can be learned about the crops the Acomas raised by looking at the foods that they served. In 1933, the journal El Palacio published an article by Frank Beckworth depicting a day he spent in Acoma. In the following excerpt Beckworth described the lunch he ate in one of the houses.

In the center of the table was a milk pan with yellow corn meal in it, in which were mixed small bits of meat; you broke off a slab of bread, and with that as a scoop or ladle, got your portion upon it, and ate ladle, contents and all. Butter was on the table; and nice white man's bread--to my inquiry Mrs. Johnson told me they had a white nurse come into the homes and teach them how to cook yeast bread.

Coffee again and the delicious peaches.<sup>42</sup>

This meal was the second in rapid succession. The peaches in the first meal of Beckworth's narrative were grown by the family in their own small orchard and sun-dried on the roof of the house and then boiled just before they were to be

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<sup>42</sup> Frank Beckworth, "A Day in Acoma," El Palacio 35(Dec. 1933):207-208.

eaten.<sup>43</sup>

That a non-Indian nurse had to teach the Acoma women how to use wheat reveals that this crop was not widely accepted by the Acoma. White, on one of his visits to Acoma, interviewed an old man who told him that;

When I was very small my mother's father and mother went to Laguna to sell some pottery and buy some things. They brought back some wheat. That was the first time I ever saw it.<sup>44</sup>

The old man could possibly have not seen wheat because of his young age at the time of the story, yet, he treated this occurrence as unusual. Wheat had been grown at Acoma since, most likely, the seventeenth century when it was introduced by the Franciscan friars. The two stories listed above imply that the Acoma did not use wheat themselves until very late. They probably either gave it to the priest or traded it.

Shortly after the cession of New Mexico in 1848, the United States government sent several military reconnaissance missions into these new territories. The reports of some of these missions help to document the status of agriculture at Acoma at the end of the Spanish and Mexican Periods but before the intervention of Anglo-American culture and agricultural practices.

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<sup>43</sup> Ibid, p. 206.

<sup>44</sup> White, "New Material from Acoma," p. 328.

Lieutenant J. W. Abert commanded the first of these missions. Abert reported that on his way up Acoma mesa to the pueblo, he and his companion, Lt. Peck, "...were constantly meeting and passing Indians, who had their 'burros' laden with peaches." In addition to the Indians, he passed several Mexicans leading burros burdened by peaches. Upon reaching the mesa summit, he noted that large quantities of peaches, cut in half, drying in the sun covered the roofs of the houses. In the lowest floor of the houses the Acomas stored corn, melons, pumpkins and other foodstuffs. "The fronts of their houses are covered with festoons of bright red peppers, and strings of pumpkins and muskmelons, that have been cut into ropes, and twisted into bunches to dry for winter use."<sup>45</sup>

The Acoma grew the peaches mentioned in Abert's report, as well as in Beckworth's narrative, in the *cañadas* surrounding Acoma Mesa. Solomon Bibo, a trader living near the Acoma Reservation, testified that the Acoma maintained extensive peach orchards in *cañons* two to three miles west of Acoma. One of these *cañons* went by the name of 'Peach

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<sup>45</sup> Congress, House, "Examinations of New Mexico in the Years 1846-47", report by Lt. J. W. Abert, 30th Cong., 1st. Sess., 1847-48. vol. 4, p. 471. (ss# 517); Congress, Senate, "Reports of Explorations and Surveys, to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean. Made Under the Direction of the Secretary of War, in 1853-4," report by Lt. A. W. Whipple, 33rd Cong., 2nd. Sess., 1853-54, vol. III, p. 63. (ss# 760).

Cañon Arroyo.<sup>46</sup> Paradise Cañon, Cañada de la Cruz, the San Jose Valley, Cebolla Cañon and Seven Cedars also contained peach groves.<sup>47</sup> The Acoma raised apricots in the Juan Tafoya Cañon, which was near Marquez,<sup>48</sup> west of Acoma Mesa.

First Lieutenant James Harvey Simpson of the Army Corps of Topographical Engineers, passing through in 1849, also left a description of Pueblo life in the Southwest. While Simpson and his company marched along the Rio San Jose near Acoma he noticed that maize and melons were widely cultivated, "the luxuriance of their growth attesting the good quality of the soil." In fact, muskmelons were in such great abundance the people of Acoma and Laguna gave many to the soldiers. The people preserved the melons for winter by peeling, de-seeding and hanging them to dry in the sun. Simpson described one old, dry cedar tree as being covered with drying muskmelons.<sup>49</sup>

The Pueblo Indians have always preserved and stored part of a good year's harvest for those years when crops failed or other disaster that left the village without the means to feed itself straight from the field. By incorporating the crops given them by the priests, the Acomas

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<sup>46</sup> Rand, "Acoma Land Utilization," p. 80.

<sup>47</sup> Ibid, p. 83.

<sup>48</sup> Ibid, p. 83.

<sup>49</sup> Simpson, "Colonial Agriculture," p. 145.

thereby increased the number of species of plants at their disposal. If a catastrophe occurred that destroyed their corn crop, an important part of the Acoma diet, the harvest of the other crops would make up the difference, thus helping to reduce the threat of starvation. However, if an introduced crop would benefit the pueblo in ways a traditional crop would not, the Acomas stopped cultivating the traditional crop in favor of the imported one. One such traditional crop was cotton.

When the Spanish first arrived in New Mexico, the Acomas cultivated cotton for use in clothing. Antonio de Espejo, in 1583, was the last to mention the presence of cotton products at Acoma.<sup>50</sup> The Acomas probably continued to cultivate cotton for many years after the Spanish conquest, but cotton was nearly gone from agriculture in the entire Southwest by the late nineteenth century.<sup>51</sup>

One explanation for the demise of cotton is the introduction of sheep. Wool is a warm and durable fiber, more so than cotton.<sup>52</sup> Sheep herding is also less work than raising cotton. Unlike cotton, a sheep population is self-perpetuating. To raise cotton the farmer must plow the

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<sup>50</sup> Antonio de Espejo, "Report of October, 1583," in The Rediscovery of New Mexico, 1580-1594, edited and translated by George P. Hammond and Agapito Rey, (Albuquerque: University of New Mexico Press, 1966), p. 213.

<sup>51</sup> Hurt, Indian Agriculture in America, p. 43.

<sup>52</sup> Ibid, p. 43

field and plant it year after year. To reap a substantial amount of fiber, the farmer must plant a large field. It is much easier to watch over a herd of sheep, a job that could be given to a young boy, than to spend days in the field breaking one's back. Also, cotton bolls must be picked one at a time and then, prior to the development of the cotton gin in the 1790s, each seed must be removed by hand. While shearing sheep is not the easiest of tasks, it is much easier than transforming cotton on the plant into cloth. Not the least of sheep's assets is that they provide two crops, one might shear a sheep for its wool and then eat it or its young.

By the late nineteenth century, the Acoma clothed themselves in wool. G. Butler, in a tour of the Southwest, in [date] described the clothing worn by Acoma men and women. The men, wrote Butler, wore large blankets, probably of wool, while the women wore "dark woollen robe[s], made of two pieces, above five feet long and three broad, sewed together at one of the narrow ends."<sup>53</sup> The men wove the wool into material used to make clothes. Butler found four sitting in an estufa, clad only in loin cloths, "each with a loom in front of him weaving a blanket."<sup>54</sup>

Clearly, the introduction of sheep by the Spanish had a

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<sup>53</sup> G. Butler, "Acoma and the Acoma Indians," Catholic World, vol. 16, pp. 708-9.

<sup>54</sup> Ibid, pp. 711-12.

noticeable impact upon Acoma agriculture, clothing, food, and labor. But, the Spanish introduced other animals to the Acoma as well. Among these new, domestic animals were draught and pack animals such as horses, mules, burros, and oxen.<sup>55</sup>

Fray Francisco Anatasio Dominguez who, during a tour of the missions, visited Acoma on December 17, 1776, left a good account of the church and the pueblo, as well as a little bit about the agriculture of the Acoma. In this passage Dominguez referred to the agricultural produce given to the Franciscan missionaries by the Acoma. Included in this list were references to the various species of animals introduced by the missionaries and raised by the Acoma.

The father of this mission [Laguna] does not have as much trouble as those mentioned before, because here (the same is true of Acoma and Zuni) the father is given a sheep a week, and *frijoles* [beans], broad beans, eggs, lard, salt, flour, a tallow candle, and milk in the summer every day. The fiscal for the week collects all this from the pueblo...<sup>56</sup>

The mission father apparently ate fairly well off of the labor of his charges. This excerpt reveals that the Acoma raised the ever-present sheep, as well as chickens, from which the Acoma collected the eggs, pigs, from whose fat the Acoma made the lard, and cattle, who produced the

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<sup>55</sup> Bandelier, Final Report, p. 210; Hurt, Indian Agriculture in America, p. 43.

<sup>56</sup> Adams and Chavez, The Missions of New Mexico, p. 186.



milk. The Acoma raised fewer of these animals than sheep. They evidently did not particularly care for hogs. Even in 1883, the Acoma Reservation contained only thirty pigs compared to over ten thousand sheep, or even twelve hundred cattle.<sup>57</sup>

As Abert noted in his report, both Hispanics and Pueblos used burros to haul produce to and from markets. The introduction of pack animals stimulated trade in two ways. Burros, mules and horses made market trips easier for the Pueblos by allowing them to haul larger amounts of produce. The introduction of pack animals also increased the value of the corn crop, since the animals needed the grain for food. If a bad year hit the area and the Spanish did not raise enough to feed themselves, let alone their animals, they would have to go to the Pueblos and buy grain to keep themselves and their animals alive.<sup>58</sup> Pack animals became important in trade with the neighboring Spaniards.

The Acomas had maintained trade relations with neighboring tribes long before the Spanish entrance into the Southwest. Antonio de Espejo reported that the Navajo, ...came down to serve the people in the towns, mingling

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<sup>57</sup> Pedro Sanchez, Indian Agent, "Statement of Number of Animals Owned by Pueblos of New Mexico, 1883," in Reports of Inspection of the Field Jurisdictions of the Office of Indian Affairs, 1873-1900, roll #41, Pueblo and Jicarilla Agency, (Washington, D. C.: National Archives and Records Service, General Services Administration, 1978), Microfilm copy in Record Group 75, microform #1070.

<sup>58</sup> Hurt, Indian Agriculture, p. 64.

and trading with them, bringing them salt, game (such as deer, rabbits and hares), dresses chamois skins, and other goods in exchange for cotton blankets and various articles accepted in payment.<sup>59</sup>

While documentary evidence is sketchy, the Acomas probably continued to trade their produce to the Navajo and also traded with the new Spanish and Mexican markets. Lt. Abert noticed trade between Mexicans and the Acomas in the mid-nineteenth century. He also met a wealthy Acoma man, with an escort of eight to ten men, on his way to Santa Fe, probably to trade.<sup>60</sup> The Mexicans traded for peaches. The Acomas could have traded for cloth. It is much easier to plant peach orchards once than plant cotton fields every year. Once the young trees had taken hold in the soil, they needed less maintenance over the course of the year than a field of cotton. The peaches could be harvested easily and sold right away, or traded, while the cotton had to be harvested, then processed and woven. Therefore, it makes more economic sense to plant peaches and trade them for cloth that would require many more hours of work.

The well-stocked Pueblo Indian granaries had long attracted Hispanic buyers. Not only did the presidential quartermaster in Santa Fe buy Pueblo grain to feed the troops, but civilians went to the pueblos in times of crops failures. The distances between the Spanish population

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<sup>59</sup> Hammond and Rey, Rediscovery, p. 213.

<sup>60</sup> Abert, "Examinations of New Mexico," p. 470.

centers in New Mexico and the trade centers in old Mexico kept the Hispanics of the northern province from producing surpluses. Because of the distance, there was little incentive to provide a surplus for trade in commercial agricultural produce. Because the Spanish-Mexicans grew for subsistence and produced little or no surplus, they sometimes found themselves without enough to eat during years of a bad harvest. During these times of trouble, the Hispanics of the New Mexico traded with the Pueblos, who kept with their tradition of over-production of crops and laying them away for years when not enough food could be grown.<sup>61</sup>

The Acoma farmers probably produced more of a surplus by the mid-nineteenth century than they had before Spanish colonization. Despite an extreme drop in population, from a possible 3000 in 1598 to 750 in 1850,<sup>62</sup> the Acoma farmed more land at the latter date. Exact figures of the number of acres cultivated by the Acoma are not available. However, during the Spanish period, they began to farm along the Rio Cubero, below Acoma Mesa itself, and in the myriad arroyos and cañons around the pueblo, in addition to those fields along the Rio San Jose that they had farmed since before the Spanish *entrada*.<sup>63</sup> Fewer men at Acoma could

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<sup>61</sup> Simmons, "Colonial Agriculture," p. 8.

<sup>62</sup> Rand, "Acoma Land Utilization," pp. 170, 173.

<sup>63</sup> Adams and Chavez, The Missions of New Mexico, p. 194; de Morfi in Thomas, Forgotten Frontiers, p. 105; Rand, "Acoma Land Utilization," pp. 80, 83.

farm more land and produce a larger surplus because they used the plow and oxen. With the plow and a team to pull it, two men could break more ground for planting than they could with only their hoes. Because of their adoption of the plow, the Acoma could feed their population, store a surplus for future use, and trade with their neighbors.

While most of the Spanish settled near the Rio Grande, some founded towns along Rio San Jose or Rio Cubero near Acoma. Spanish settlers established three towns in the vicinity of Acoma prior to the middle of the eighteenth century. Encina, Cebollita and San Antonio were located just north of the Rio San Jose and between the Rio Cubero. Other settlements existed near Zuni, less than seventy miles west of Acoma, and about twenty miles to the east of Laguna.<sup>64</sup> The Acoma could reach all of these Spanish towns to trade in little time.

The Acoma also traded for tools. The first metal tools used by the Acoma farmers came, at no expense, from the Franciscan missionaries.<sup>65</sup> Later, the Acoma had to obtain these now necessary agricultural implements on their own. Metal tools were hard to find even for the Spanish until the opening of the Anglo-American trade on the Santa Fe Trail

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<sup>64</sup> Map of New Mexico by Don Bernardo de Miera y Pacheco, 1779, in Thomas, Forgotten Frontiers, p. 87.

<sup>65</sup> Edward Spicer, Cycles of Conquest, (Tucson: University of Arizona Press, 1962), p. 326.

after 1821, when Mexico gained its independence from Spain.<sup>66</sup> Whether the Acoma traded with Hispanics who, in turn, traded with the Anglos, or whether they traded directly with the American merchants is unknown. However, what is known is that the Americans took home wool, which was a staple commodity of the Pueblos in general and Acoma in particular.<sup>67</sup>

In New Mexico during the Spanish Colonial Period, the Pueblo Indians of Acoma increasingly farmed for profit. Because they had the best land, access to water, and the tradition of intensive farming for production of surpluses, they could sell crops to their Spanish neighbors or trade for items that they needed but could not make themselves, such as metal implements.<sup>68</sup> Additionally, the Acoma dropped the production of certain agricultural commodities that they had practiced prior to Spanish colonization in favor of more profitable items that required less work for production.<sup>69</sup>

The economy of Acoma continued to be agricultural through the three hundred years of the study period. Prior to Spanish contact, the Acoma cultivated several species of

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<sup>66</sup> Warren A. Beck, New Mexico: A History of Four Centuries, (Norman: University of Oklahoma Press, 1962), p. 112.

<sup>67</sup> Ibid, p. 118.

<sup>68</sup> Hurt, Indian Agriculture in America, p. 64.

<sup>69</sup> Bandelier, Final Report, p. 210-211.

plants and raised one species of livestock, the turkey.<sup>70</sup> When the Spanish arrived, especially the Spanish Franciscan missionaries, the Acoma gained access to a wider variety of plant cultigens, as well as other species of livestock including sheep, horses, burros, and cattle. Additionally, the Friars gave new tools to their charges and instructions on the cultivation of the introduced crops.<sup>71</sup> The Acoma did not adopt these new technologies overnight; rather, the acculturation process continued throughout the period.

The Spanish missionaries hold primary responsibility for the changes brought about in Acoma agriculture after Spanish colonization. The Franciscans taught the Acomas the methodology used to grow the new crops they introduced, as well as use of the new tools and the care of the new species of livestock. The effects of these changes in agriculture go beyond simply the changes in crops, methodology and tools. The introduction of new crops led to greater trade. The added Spanish population also meant new markets. So too did the introduction of livestock, especially sheep. The introduction of sheep led to changes in the system of labor. Sheep also replaced cotton as the material of choice for clothing.

The use of horses, burros and oxen, to plow the fields,

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<sup>70</sup> Bandelier, Final Report, p. 156; J. M. Gunn, Scatchen, (Albuquerque: Albright and Anderson, 1917), p. 26.

<sup>71</sup> Hurt, Indian Agriculture, p. 43; Bandelier, Final Report, p. 210.

process crops, and carry burdens, caused further changes in the types of crops grown. While the integration of many of the Spanish introductions progressed slowly, even with the not so subtle pressure of the missionaries, the Acomas took what was given them and made them their own. By the time of the American occupation of New Mexico, the Acomas had incorporated Spanish agricultural technology into their way of life. Despite these material changes, the underlying structure of the pueblo, their land-use customs, social organization, and division of labor, remained relatively unchanged.

## Agricultural Change at Acoma Pueblo

1598-1821

### Summary and Conclusions

All societies change over time and Acoma Pueblo, in the years between the Spanish *entrada* in 1598 and the Mexican takeover of New Mexico in 1821, is no exception. Spanish influence, through the medium of the Franciscan missionaries, made itself felt in Acoma agriculture by offering a wide variety of crops, animals, and tools. The Acoma began to use different tools to till their fields and to cultivate their crops. They also began to raise different crops in addition to those grown prior to Spanish colonization. The missionaries hold primary responsibility for making these additions available because of their direct involvement at Acoma while attempting to integrate the Acoma into Spanish civilization. Despite the attempts of the missionaries to change the society of the pueblo, the Acoma maintained control over their traditions, their land, and customary use of the land, while incorporating Spanish crops, livestock, tools, and agricultural technology.

To understand the changes in farming that Acoma experienced in the two hundred and fifty years between the



time Spanish settlers first reached New Mexico and Mexican Independence, the Marxist political-economic theoretical framework provides a viable approach to the problem of socio-economic change at Acoma. Socio-economic change at Acoma does not fit exactly within the margins of Marxist political-economic theory but Marx does furnish a starting point, while allowing for divergence from orthodox Marxist political-economic theory.<sup>1</sup>

The concept of a mode of production looms large in Marx's theory of political-economy. While Marx remained ambiguous about this idea, later political-economic theoreticians have defined it as describing a "dynamic set of relations among elements that occur in concrete human interactions which are determinants of other such relations."<sup>2</sup> These interacting relations include both the forces of production and the relations of production.<sup>3</sup>

The forces of production include the laborer and the laborer's means of production. The means of production include the objects of production (in the case of the Acoma, these are crops and livestock) and the means (hereafter

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<sup>1</sup> For an in-depth discussion of Marx's political-economic theory see M. C. Howard and J. E. King, The Political Economy of Marx, 2nd edition, (New York: Longman Group Limited, 1985).

<sup>2</sup> Janet Siskind, "Kinship and Mode of Production," American Anthropologist, 80(4):863.

<sup>3</sup> Howard and King, The Political Economy of Marx, p. 12.

cited as submeans) of production, which are tools and technology, as well as property and other natural resources (hereafter cited as resources), and ideas used in the procurement of the objects of production.<sup>4</sup>

The relations of production are, for Marx and orthodox Marxists, class relations that take the form of property relations.<sup>5</sup> However, to understand property relations as they occurred at Acoma, the relations cannot be understood to mean class relations as the Acoma have no class system. Because no class structure existed and everyone worked, regardless of sex or even age, and all farmers enjoyed equal appropriation of the submeans of production, the agricultural economy of Acoma could be classified as agricultural communism.<sup>6</sup> Communism in this sense is not a political ideology. Agricultural communism describes the way in which the society makes its living, through agriculture. Communism describes a system of communal ownership of property and resources.

The economy of Acoma remained an agricultural economy

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<sup>4</sup> Siskind, "Kinship," p. 863.

<sup>5</sup> Howard and King, The Political Economy of Marx, pp. 6-7.

<sup>6</sup> Barry Hindess and Paul Q. Hirst, Pre-capitalist Modes of Production, (London: Routledge and Kegan Paul, 1975), p. 27. The authors use "primitive communism" here, but "primitive" is ethnocentric and suggests inferiority while being somewhat vague as a concept. Agricultural communism is more precise and does not have the negative connotation of "primitive."

through the two hundred and fifty years of Spanish colonization. Prior to Spanish contact, the Acoma cultivated several species of plants and raised one species of livestock, the turkey.<sup>7</sup> When the Spanish arrived, especially the Spanish Franciscan missionaries, the Acoma gained access to a wider variety of plant cultigens, as well as other species of livestock including sheep, horses, burros, and cattle. Additionally, the friars gave new tools to their charges and instructions on the cultivation of the introduced crops.<sup>8</sup> The Acoma did not adopt these new technologies overnight; rather, the acculturation process continued throughout the period of Spanish colonization.

Acculturation, to use anthropologist Ester Maring's definition of the term, is "culture change that is initiated by the conjunction of two or more autonomous cultural systems."<sup>9</sup> However, this cultural change at Acoma entailed the borrowing of material culture from their Spanish neigh-

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<sup>7</sup> A. F. Bandelier, Final Report of Investigations Among the Indians of the Southwest US, part II, Papers of the Archeological Institution of America, America Series, vol. IV, (Cambridge: J. Wilson and Sons, 1890), p. 156; J. M. Gunn, Scatchen, (Albuquerque: Albright and Anderson, 1917), p. 26.

<sup>8</sup> R. Douglas Hurt, Indian Agriculture in America, (Lawrence: University of Kansas Press, 1987), p. 43; Bandelier, p. 210.

<sup>9</sup> Ester Gayo Maring, "The Religio-political Organization, Customary Law and Values of the Acoma (Keresan) Pueblo Indians: a Study in Acculturation and Social Control," Ph. D. dissertation, University of Indiana, 1969, p. 281.

bors with little or no change in non-material culture.<sup>10</sup> Even today the Acoma believe that maintenance of the harmonious balance of the universe through ceremony is a requisite if the universe is to survive. Change of any kind would upset this delicate balance. Therefore, the Acoma people "consciously seek to perpetuate traditional values..."<sup>11</sup> The borrowing of material culture by the Acoma took place gradually, over a period of centuries, thus lessening the likelihood of upsetting the harmonic balance of all things by rapidly adopting ideas and material culture from another culture.

Borrowing did indeed occur and that borrowing affected the Acoma socio-economic system. An examination of the changes that occurred reveals that these changes, small and large, produced other modifications to Acoma.

Much of the material borrowing took place in the arena of the Acoma means of agricultural production. To maintain an agricultural subsistence patterns, agricultural societies require access to arable land and water. These are the resources. The farming resources used by the Acoma, land and water, remained in pueblo control throughout the period. The Acoma continued to control the same land and water that they had prior to Spanish colonization.

The Acoma continued to live and to farm the same land

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<sup>10</sup> Maring, "Religio-political Organization," p. 284.

<sup>11</sup> Ibid, p. 281.

that they had tilled since, at least, the thirteenth century. Neither the Spanish nor the Mexicans after them ever took possession of this land or change the system of land tenure. On the contrary, the Spanish helped to preserve Acoma when the Spanish Crown granted Acoma the title to the land on which they lived and farmed. After the American takeover of New Mexico, the United States Congress confirmed the Spanish grant.<sup>12</sup> Within the bounds of this land grant runs the Rio San Jose. It is from this river that the Acoma divert water to irrigate their main fields twelve miles from Acoma Mesa.

This illustrates that neither the Spanish nor the Mexicans and Americans took control of the resources of the Acoma forces of production from the pueblo, rather they reinforced this control by the pueblo. However, the ways in which the Acoma used these resources and gained access to them changed slightly due to Spanish influence.

Spanish influence served to refine the use of irrigation water, especially in the way in which the *mayordomo* or ditch boss controlled access to water. The position of water manager itself was a product of Spanish influence.<sup>13</sup> However, having a *mayordomo* and allowing him to govern access to a valuable commodity in the arid Southwest is in keeping with Acoma traditional values of community ownership

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<sup>12</sup> Minge, Acoma, p. 59.

<sup>13</sup> Sunseri, "Agricultural Techniques," p. 330.

of resources. The position of *mayordomo* and his authority only served to provide greater structure dispensing of this commodity better.

Likewise, the division of the arable land among Acoma farmers did not greatly change. The pueblo owned the land communally, as it had from before Spanish colonization. The *cacique* still retained the right of allotting available land to someone in need of it.<sup>14</sup> The acquisition of land without going to the *cacique* may represent some change. When a farmer died, his land passed to his sons. The inheritance of land does not represent a change in land-use rights. However, a farmer could also acquire land through barter and trade.<sup>15</sup> By the first quarter of the twentieth century, an Acoma farmer could sell or buy land, although sale of land seems to have been a novel idea and probably originated after the American takeover of New Mexico.<sup>16</sup> Whether Acoma men could exchange their land or barter it in the period prior to Spanish colonization is unknown, but is likely. Therefore, changes in access to land appear to have been minimal during the Spanish colonial period.

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<sup>14</sup> Adolph F. Bandelier and Edgar L. Hewitt, Indians of the Rio Grande Valley, (Albuquerque: University of New Mexico Press, 1937), p. 43.

<sup>15</sup> Bandelier, Final Report, p. 161.

<sup>16</sup> Leslie A. White, The Acoma Indians: People of the Sky City, (Glorieta, NM: the Rio Grande Press, Inc., 1973), p. 34. First published as part of the 47th Annual Report of the U. S. Bureau of American Ethnology, (Washington, D. C.: U. S. Government Printing Office, 1932).

The resources of production used by the Acoma at the end of the Spanish colonial period were identical to those used by their ancestors two hundred and fifty years before. Their land base remained the same as it had as did the water that they used to irrigate their crops. The relations of production, the relations between those who controlled access to the resources, also endured, despite minor adjustments in the management of water appropriation.

Water appropriation may have undergone some change, but the technology used to distribute the water to the fields stayed constant from the beginning of the Spanish period through the mid-nineteenth century. The Acoma continued to irrigate their crops because, in their arid environment, they could not rely on rainfall alone to provide adequate water. The Spanish did not interfere with the irrigation. Rather, the Spanish adopted Pueblo irrigation practices, though they modified them somewhat.<sup>17</sup>

Some researchers have contended that the Acoma did not learn irrigation techniques until after Spanish colonization or even until the end of the nineteenth century.<sup>18</sup> However, Luxan's description of the Acoma's irrigated fields twelve miles north of the pueblo strongly suggests the use of ditch irrigation. Had the Acomas solely used flood-plain irrigation, Luxan would not have described the irrigation

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<sup>17</sup> Simmons, "Colonial Agriculture," p. 4.

<sup>18</sup> Maring, "Religio-political Organization," p. 23.

system in the way he did; "as if built by Spaniards."<sup>19</sup>

Other submeans, especially tools, of the agricultural means of production at Acoma changed more than resources or irrigation technology. Technological changes were more dramatic than the changes in resource utilization. The influence of the Acoma's Franciscan missionaries brought about these changes.

Prior to Spanish colonization, the primary tools used by the Acomas in the cultivation of their fields were the digging stick and the hoe. The digging stick was fashioned of wood while the hoe consisted of a stone head affixed to a wooden handle.<sup>20</sup>

The Spanish missionaries introduced several new tools to the Acoma. Some tools were only metal versions of tools with which the Acoma already possessed familiarity, such as the hoe. However, one tool greatly increased the productivity of the Acoma farmer. That tool was the plow. The plow, pulled by oxen or mules, allowed the farmer to cultivate more land, despite the primitiveness of the device.<sup>21</sup>

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<sup>19</sup> George P. Hammond and Agapito Rey, The Rediscovery of New Mexico, Coronado Cuarto Centennial Publication 1540-1940, vol. III, (Albuquerque: University of New Mexico Press, 1966), p. 182.

<sup>20</sup> Alfred E. Dittert, "Culture Change in the Cebolleta Mesa Region, Central Western New Mexico," PhD dissertation, University of Arizona, 1959, pp. 335-6, pp. 495-6.

<sup>21</sup> Marc Simmons, "New Mexico's Colonial Agriculture," Palacio 89(1):5, 9.; Alvin R. Sunseri, "Agricultural Techniques in New Mexico at the Time of the Anglo-American Conquest," Agricultural History, 47(4):334-5.



The integration of Spanish tools, especially metal tools, helped the Acoma farmers by decreasing the man-hours necessary to cultivate a field. This is especially true of the plow and oxen. However, the introduction of oxen fostered a switch in the types of crops produced. Oxen must have feed and so the Acoma cultivated hay for animal forage.

The objects of production, those crops grown and livestock raised by the Acoma, underwent the most radical changes during the age of missionary activity at the pueblo. The friars presented new crops and new animals to the Acoma farmers. These introductions brought about the most extreme changes in Acoma agriculture.

After the establishment of the mission on Acoma Mesa, the Franciscan missionaries taught the Acoma the cultivation of crops brought by them from Spain and from Spanish possessions in the Valley of Mexico. The missionaries were new to the cultivation of maize, squash and beans, while the Acomas had cultivated these three plants for millennia. Since the maize, squash, and beans continued to be a major component in the Acoma diet, with the Spanish introductions as minor crops, Spanish influence in methodology played a minor role as well.

The Acomas continued to rely heavily on their traditional crops. Maize, squash, and beans endured as mainstays in the Acoma diet because they were dependable sources of food; they could be easily grown on the land around Acoma

and had been familiar crops for hundreds of years. That is not to say that the Acomas did not expand their diets. Many Spanish imports became part of the menu of the pueblo. Chile, melons and, especially, peaches became important crops. Wheat remained a fringe crop for many years after its introduction.<sup>22</sup>

The incorporation of these crops is less a product of Spanish pressure than a realization, either conscious or unconscious, by the Acomas that this incorporation would broaden their ecological safety net. The Pueblo Indians have always preserved and stored part of a good year's harvest for those years when crops failed or other disaster that left the village without the means to feed itself straight from the field.<sup>23</sup> By incorporating the crops given them by the priests, the Acomas thereby increased the number of species of plants at their disposal. If a catastrophe occurred that destroyed their corn crop, an important element in the Acoma diet, the harvest of the other crops would make up the difference, thus helping to reduce the threat of starvation. However, if an introduced crop would benefit the pueblo economy in ways a traditional crop would not, the Acomas stopped cultivating the traditional crop in favor of the imported one. One such tradi-

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<sup>22</sup> Frank A. Beckworth, "Day in Acoma," El Palacio, 35(1933):207-8. White, "New Material from Acoma," p. 328.

<sup>23</sup> Simmons, "Colonial Agriculture," p. 8.

tional crop was cotton.

When the Spanish first arrived in New Mexico, the Acomas cultivated cotton for use in clothing. Antonio de Espejo, in 1583, was the last person to mention the presence of cotton products at Acoma.<sup>24</sup> The Acomas probably continued to cultivate cotton for many years after the Spanish conquest, but cotton was nearly gone from agriculture in the entire Southwest by the late nineteenth century. One explanation for the demise of cotton is the introduction of sheep. Wool is a warm and durable fiber, more so than cotton.<sup>25</sup> Sheep herding is also less work than raising cotton. Unlike cotton, a sheep population is self-perpetuating. To raise cotton the farmer must plow the field and plant it year after year. To reap a substantial amount of fiber, the farmer must plant a large field. It is much easier to watch over a herd of sheep, a job that could be given to a young boy, than to spend days in the field breaking one's back. Also, cotton bolls must be picked one at a time and then, (prior to the development of the cotton gin in the 1790s), each seed must be removed by hand. While shearing sheep is not the easiest of tasks, it is much easier than transforming cotton on the plant into cloth.

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<sup>24</sup> Antonio de Espejo, "Report of October, 1583," in The Rediscovery of New Mexico, 1580-1594, edited and translated by George P. Hammond and Agapito Rey, (Albuquerque: University of New Mexico Press, 1966), p. 213.

<sup>25</sup> Hurt, Indian Agriculture, p. 43

Not the least of sheep's assets is that they provide two crops; one might shear a sheep for its wool and then eat it.

The missionaries also introduced the husbanding of chickens, goats, cattle, horses, and mules to the Acoma. Hog production never developed at Acoma. The pueblo's inhabitants raised few chickens, but cattle gained a foothold in the agricultural system, although not to the extent that sheep did. The Acoma never raised horses, donkeys, and mules in the numbers that they did sheep,<sup>26</sup> but these animals greatly facilitated the conduct of another area of the Acoma economy.

One area within the Acoma economy that intensified as the years of Spanish colonization progressed was trade. Trade had been necessary to Acoma's economy prior to Spanish colonization and became increasingly important after the Acoma felt the effects of Spanish technological influences because of greater agricultural surpluses.

The Acomas had maintained trade relations with neighboring tribes long before the Spanish entrance into the Southwest. Antonio de Espejo reported that the Navajo,

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<sup>26</sup> Pedro Sanchez, Indian Agent, "Statement of Number of Animals Owned by Pueblos of New Mexico, 1883," in Reports of Inspection of the Field Jurisdictions of the Office of Indian Affairs, 1873-1900, roll #41, Pueblo and Jicarilla Agency, (Washington, D. C.: National Archives and Records Service, General Services Administration, 1978), Microfilm copy in Record Group 75, microform #1070.

...came down to serve the people in the towns, mingling and trading with them, bringing them salt, game (such as deer, rabbits and hares), dresses chamois skins, and other goods in exchange for cotton blankets and various articles accepted in payment.<sup>27</sup>

Because of the dangers involved in traveling far from the pueblo to hunt, due to the presence of Navajo and Apache raiders, the Acoma traded with these tribes for meat. Instead of hunting themselves, the Acoma obtained their animal protein through trade.

While documentary evidence is sketchy, the Acomas probably continued to trade their produce to the Navajo and also traded with the new Spanish and Mexican markets. Albuquerque was only seventy miles east of Acoma. This was not a long or a hazardous trip if one owned horses or mules. Also, while most of the Spanish settlements lay near the Rio Grande, several small Spanish villages were near the pueblo.<sup>28</sup> Lt. Abert noticed trade between Mexicans and the Acoma in the mid-nineteenth century. The Mexicans also traded with the Acoma for peaches.<sup>29</sup>

The Acoma may have traded for cloth in return. It is much easier to plant peach orchards once than plant cotton

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<sup>27</sup> Antonio de Espejo in Hammond and Rey, Rediscovery, p. 213.

<sup>28</sup> Map of New Mexico by Don Bernardo de Miera y Pacheco, 1779, in Alfred Barnaby Thomas, Forgotten Frontiers, (Norman: University of Oklahoma Press, 1932), p. 87.

<sup>29</sup> Congress, House, "Examinations of New Mexico in the Years 1846-47," report by Lt. J. W. Abert, 30th Congress, 1st Session, 1847-8, vol. 4, p. 470.

fields every year. Once the young trees had taken hold in the soil, they needed less maintenance over the course of the year than a field of cotton. The peaches could be harvested easily and sold right away, or traded, while the cotton had to be harvested, then processed and woven. Therefore, it makes more economic sense to plant peaches and trade them for cloth that would require many more hours of work. One item of note is that during the early years of the Santa Fe trade, half of the merchandise brought to New Mexico by Anglo-American traders were cotton goods.<sup>30</sup>

The Acoma also traded for tools. The first metal tools used by the Acoma farmers came, at no expense, from the Franciscan missionaries as part of their work.<sup>31</sup> Later, the Acoma had to obtain these now necessary agricultural implements on their own. Occasionally, the Spanish would find themselves short of food during a bad harvest. The Pueblos, who kept a tradition of storing surplus grain from a good harvest, would trade this surplus grain to the starving Spanish colonists. Some items they would receive in exchange were tools.<sup>32</sup> Metal tools were hard to find even for the Spanish until the opening of the Anglo-American

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<sup>30</sup> Warren A. Beck, New Mexico: A History of Four Centuries, (Norman: University of Oklahoma Press, 1962), p. 112.

<sup>31</sup> Edward Spicer, Cycles of Conquest, (Tucson: University of Arizona Press, 1962), pp. 292. Dozier, Pueblo Indians, p. 50.

<sup>32</sup> Simmons, "Colonial Agriculture," p. 8.

trade on the Santa Fe Trail after 1821, when Mexico gained its independence from Spain.<sup>33</sup> Whether the Acoma traded with Hispanics who, in turn, traded with the Anglos, or whether they traded directly with the American merchants is unknown. However, what is known is that the Americans took home wool, which was a staple commodity of the Pueblos in general and Acoma in particular.<sup>34</sup>

The Spanish missionaries hold primary responsibility for the changes brought about in Acoma agriculture after Spanish colonization, by making new tools and seeds available for Acoma use. The Franciscans also taught the Acomas the methodology used to grow the new crops they introduced, as well as use of the new tools and the care of the new species of livestock. The effects of these changes in agriculture go beyond simply the changes in crops, methodology and tools. The introduction of new crops led to greater trade and new markets, especially those markets created by the increasing Spanish population. So too did the introduction of livestock, especially sheep. Sheep replaced cotton as the material of choice for clothing. The use of horses, burros and oxen, to plow fields, process crops, and carry burdens, initiated further changes in the types of crops grown. While the integration of many of the Spanish introductions progressed slowly, even with the not

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<sup>33</sup> Beck, New Mexico, p. 112.

<sup>34</sup> Ibid, p. 118.

so subtle pressure of the missionaries, the Acomas took what was given them and made them their own. By the time of the American occupation of New Mexico, the Acomas had incorporated Spanish agricultural technology into their way of life.

Agriculture at Acoma slowly changed in the two hundred and fifty years of Spanish settlement in New Mexico. However, those changes occurred only in the objects of production, the crops and livestock, and the submeans of production, the tools used in the production of the objects. Even in the area of tools, the Acoma only added a few new tools preferring to improve existing ones. The resources of production and the relations of production remained true to their pre-Spanish forms, with few changes. The over-all mode of production, agricultural communism, also persisted due to the lack of substantial changes in the relations of production. Spanish colonial policy had failed in the pueblo that was the farthest point from the farthest point in the Spanish Empire.



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