

7-1-1995

Analysis of Deaths in New Mexico's Río Abajo During the Late Spanish Colonial and Mexican Periods, 1793–1846

Oswald G. Baca

Follow this and additional works at: <https://digitalrepository.unm.edu/nmhr>

Recommended Citation

Baca, Oswald G.. "Analysis of Deaths in New Mexico's Río Abajo During the Late Spanish Colonial and Mexican Periods, 1793–1846." *New Mexico Historical Review* 70, 3 (1995).
<https://digitalrepository.unm.edu/nmhr/vol70/iss3/2>

This Article is brought to you for free and open access by UNM Digital Repository. It has been accepted for inclusion in *New Mexico Historical Review* by an authorized editor of UNM Digital Repository. For more information, please contact disc@unm.edu.

Analysis of Deaths in New Mexico's Río Abajo During the Late Spanish Colonial and Mexican Periods, 1793–1846

OSWALD G. BACA

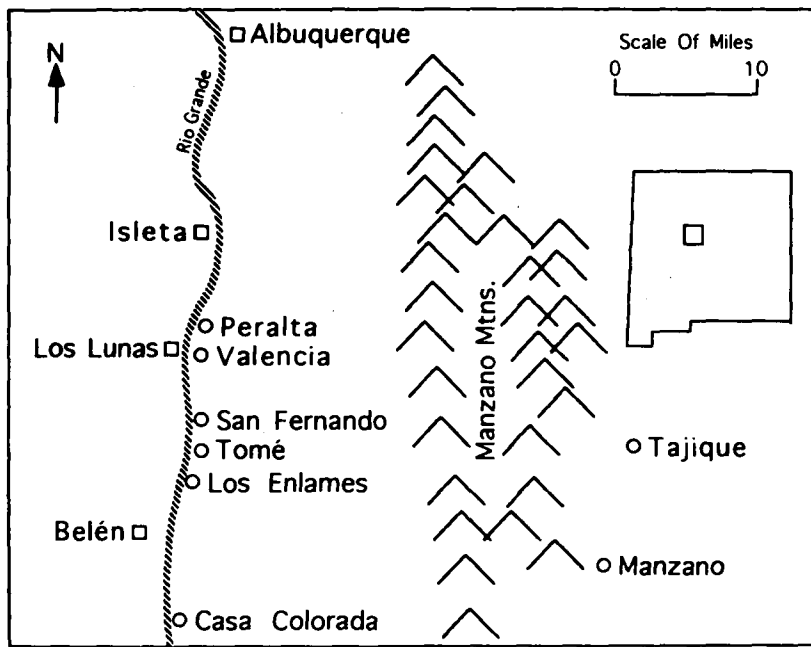
The extent and prevalence of infectious disease in New Mexico during the Spanish colonial and Mexican periods is, for the most part, unknown. Although sporadic notations of smallpox and measles epidemics among the Indians and colonists of New Mexico during the seventeenth through the nineteenth centuries were entered into church records, they provide only a glimpse of the incidence of infectious disease during those periods. This lack of information may be explained, in part, by the fact that although microorganisms were discovered two centuries earlier, it was not until the latter half of the nineteenth century that microbes were demonstrated to be etiological agents of disease. Once the connection between microbes and disease was made, it became possible to identify many pathogenic microorganisms and their modes of transmission. This link also led to the discovery of viruses in the 1890s and in the twentieth century to the development of methods for preventing and treating infectious diseases, including immunization and antibiotic therapy. Edward Jenner, in 1798, announced his discovery of a vaccine for preventing smallpox infection with the cowpox virus; a remarkable advance because it occurred prior to the acceptance of the germ theory of disease and one hundred years before the discovery of viruses. Vaccination against smallpox rapidly spread throughout the Western world, including the far reaches of the Spanish empire. By late 1805, 3,610 children had been vaccinated in New Mexico.¹

Oswald G. Baca is professor of biology at the University of New Mexico and research professor of microbiology at the University of New Mexico School of Medicine.

During the nineteenth century, vaccination certainly protected some New Mexicans against smallpox; however, as church records indicate, epidemics persisted.² Smallpox outbreaks and other microbial-caused diseases, including another much feared disease, diphtheria, continued into the twentieth century and only began to significantly abate in New Mexico with the establishment of the State Department of Public Health in 1919 under the leadership of Governor Octaviano A. Larrazolo. Regulations requiring the reporting of notifiable diseases were adopted the same year, facilitating the quantitative determination of disease prevalence.³ Subsequently, control measures were implemented, including the systematic vaccination of children against smallpox and diphtheria. In 1920 only 316 smallpox cases were reported in New Mexico, whereas in the rest of the United States—twenty-eight states did not require vaccination—over 500,000 cases were recorded from 1919 through 1928.⁴ Eventually, all states mandated vaccination against smallpox, leading to its eradication in the United States by the 1940s.

Recently, Oswald Baca and Mary Ann Baca examined church burial records of the central New Mexico villages of Tomé, San Fernando, Valencia, Casa Colorada, Los Enlames, Peralta, and Manzano for the years 1793–95 and 1809–46.⁵ The compilation of over 1,500 burials was the prelude for assessing the occurrence and prevalence of infectious disease in the predominant Hispanic population, deriving mortality data among children—an important indicator of the general health status of a population—and revealing the extent of hostility between the Native Americans and colonists. Recognizing that not all decedents of the area received last rites under the auspices of the Catholic church, these records probably account for the majority of deaths in the non-Indian population because under Spanish and Mexican rule only the practice of Roman Catholicism was permitted.⁶ The years examined span the late Spanish colonial (1793–1821) and the entire Mexican (1821–46) periods. Records from late 1795 through May 1809 were apparently lost, destroyed, or possibly not written, and are not included in Fray Angélico Chávez's inventory of the archdiocese of Santa Fe's archives.⁷ The Tomé church's burial book for the years 1809 through 1855 was continuously numbered, beginning with page one.

During the years that this study covers, the cleric of Tomé's Purísima Concepción Catholic Church also ministered to the inhabitants of a number of other villages north and south of Tomé along the Rio Grande, including San Fernando, Valencia, Peralta, Casa Colorada, and Los Enlames (present-day Adelino), and thirty miles east of Tomé on the far side of the Manzano mountains, Tajique, and Manzano (see map). Until June 1809, Tomé was under the jurisdiction of the Belén church. The year 1793 coincides with the elevation of Belén from mission status to



Map: The Río Abajo research area.

that of independent parish; Fray Cayetano José Ignacio Bernal was the first resident pastor.⁸ Consistent record keeping of baptisms, burials, and other sacramental rites in Tomé and associated villages began with the arrival of Bernal.

Most of the recorded deaths were from the two largest populated villages, Tomé and Valencia. The name Peralta did not appear in the records until the 1840s, hence only a few deaths were recorded from that specific area; the village of Tajique was sparsely inhabited and only a few deaths were noted. The years during which the names of some of the villages first appeared in the records (e.g., Casa Colorada in 1823 and Manzano in 1817), correspond roughly with the years those areas were colonized. Typically, the recording priest noted the person's name, village, and parents' names if the deceased was a child or, occasionally, an unmarried adult.⁹ If the deceased person was married, the spouse's name was usually included. Except for Indians (e.g., slaves) living in Spanish households, rarely was ethnicity indicated. In all cases it was noted if the individual was an adult or child (*parvula* or *parvulo*, female or male child less than thirteen years of age); except during the years 1793 through 1795, ages were seldom recorded (a noteworthy exception was 107-year-old Antonia Rivera of Tomé, buried on 18 November 1811). Although the cause of death was rarely noted, there was an exception: killings by

Indians. Only in four instances was an infectious disease mentioned, and that was in 1816 when smallpox was identified as the cause of death. There were certainly many other smallpox victims. The deaths of two male adults in 1815 and 1835 were attributed to hypothermia.

Approximately two-thirds of all the deaths recorded between 1793 and 1846 were from the two largest communities, Tomé ($n = 562$) and Valencia ($n = 404$) (table 1). Children under the age of thirteen (*parvulos*) accounted for 54 percent of all deaths (tables 2 & 3), an extraordinarily high mortality rate when compared with today's rate of 1 to 3 percent in New Mexico and the rest of the United States.¹⁰ Significantly, more adult females apparently died than adult males (56 percent versus 44 percent; table 2); why this was the case is not explained by this study, although it may have been the result of complications associated with pregnancy and childbirth which are more preventable and treatable today. A partial explanation for this disparity may be that women simply outnumbered men, a situation which—for a number of reasons, including the presence of captive Indian women in the population—apparently obtained during the late eighteenth century.¹¹ Another plausible reason may be that some men simply disappeared (i.e., killed, etc.) without a trace while journeying or laboring away from their homes. In the case of children, there was no difference in the mortality percentage represented by each gender (50 percent each, table 2). In the only years during which ages of decedents were routinely recorded (1793–95) twenty of the twenty-five individuals interred were three years of age or younger (average age of one).

A plot of the total number of recorded deaths per year in all the villages reveals a striking pattern of sharp increases in mortality above baseline levels between 1815 and 1846 that occurred with a periodicity of approximately four to six years (see figure 1). These sharp rises in mortality took place during the years 1815–16, 1822–23, 1826, 1832, 1836, 1839–40, and 1846. The additional deaths above the baseline level represented 29 percent ($n = 428$) of the total recorded deaths ($n = 1,451$) for the years 1815 through 1846. After 1821, the baseline level of deaths for all the villages rose from ten to fifteen per year to more than forty and continued at that level until 1842 when it apparently subsided, but then rose again. This baseline increase was probably a reflection of an increased population. Based on the 1790 and 1850 census data for Tomé and Valencia, one can extrapolate—albeit with only rough precision—an annual baseline mortality rate of 1 to 2 percent during the years 1793 to 1820 and approximately 2 percent in the subsequent years up to 1845. This annual death rate (baseline) is twice the modern-day rate for New Mexico and the rest of the United States of about 1 percent.¹² (The populations of Tomé and Valencia in 1790 were 624 and 137, respectively; in 1850 Tomé had 614 inhabitants and Valencia 249).¹³

TABLE 1: RECORDED DEATHS PER VILLAGE (1793-1846)*#							
Year	Tomé	San Fern.	Los Enlames	Valencia	Casa Color.	Manzano	All villages
1793	11	1		2			14
1794	7	0		0			7
1795	3	0		1			4
1809	2	0		1			3
1810	5	0	1	1			7
1811	5	1	1	1			8
1812	6	3	0	2			11
1813	1	0	0	4			5
1814	2	0	0	1			3
1815	9	11	8	7			35
1816	20	11	5	5			41
1817	2	0	0	1		1	4
1818	5	1	1	6		1	14
1819	0	2	1	1		0	4
1820	6	1	3	0		0	10
1821	14	4	3	8		0	29
1822	15	6	11	15		1	48
1823	15	11	5	14	1	0	46
1824	8	11	6	7	8	0	40
1825	21	3	8	13	7	0	52
1826	41	25	12	51	14	0	143
1827	13	7	4	13	9	3	49
1828	18	6	2	8	7	3	44
1829	11	6	4	11	4	5	41
1830	17	4	0	7	6	3	37
1831	10	12	7	10	3	5	47
1832	20	5	4	20	14	21	84
1833	29	5	3	4	4	5	50
1834	20	4	0	13	1	0	38
1835	32	0	0	8	3	3	46
1836	17	2	0	10	8	24	62
1837	10	2	1	12	4	4	33
1838	31	0	0	10	6	2	50
1839	29	4	4	32	6	7	83
1840	29	0	3	27	20	8	89
1841	8	0	0	18	13	0	39
1842	9	1	0	2	2	0	14
1843	8	1	4	15	5	6	39
1844	11	0	3	6	4	0	24
1845	14	1	3	7	12	3	40
1846	28	3	4	29	9	1	76
Totals	562	154	111	404	170	106	1,513*

* Totals (all villages column) include 2 deaths from Peralta (mentioned for the first time in 1846), 3 from Tajique (1836, 1838, 1839) and 1 from El Cerro (1840).
All inclusive—gender, age, race/ethnicity (e.g., Spaniards, Indians, etc.)

Number of Deaths

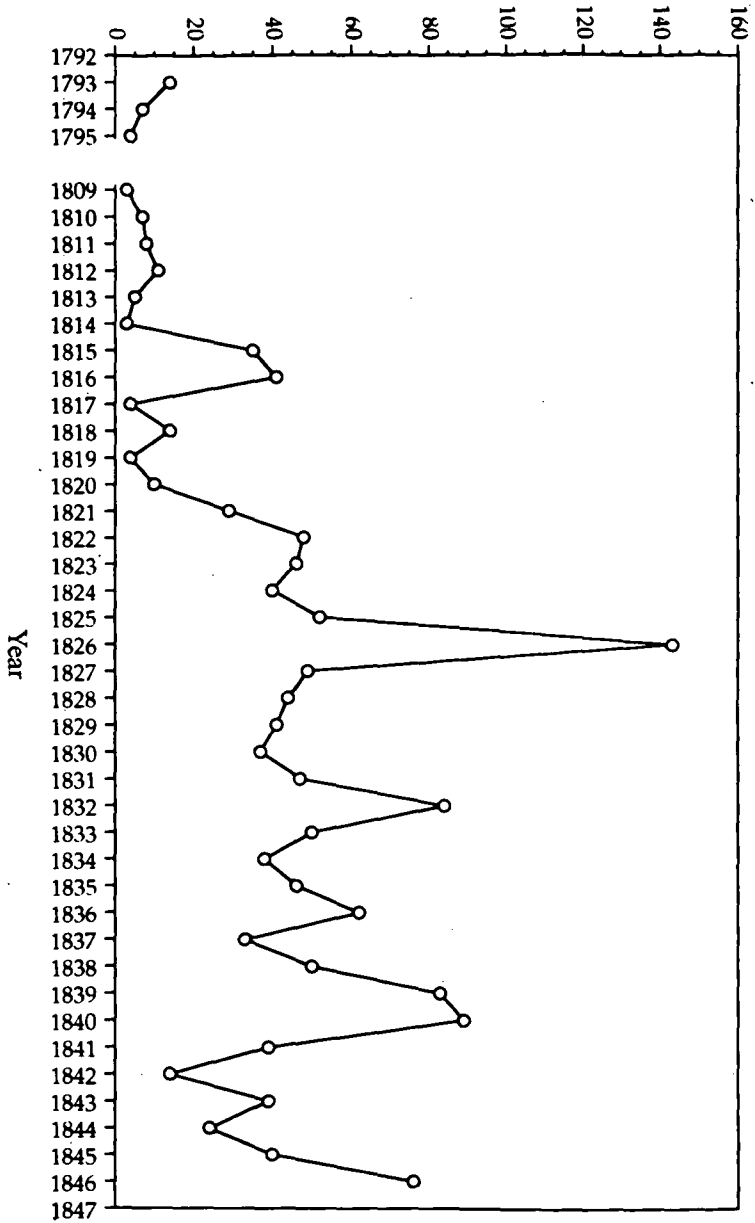


Figure 1: Total number of deaths in the villages of Tomé, San Fernando, Los Enlames, Valencia, Casa Colorado, Peralta, Tajique, and Manzano during the years 1793-1846

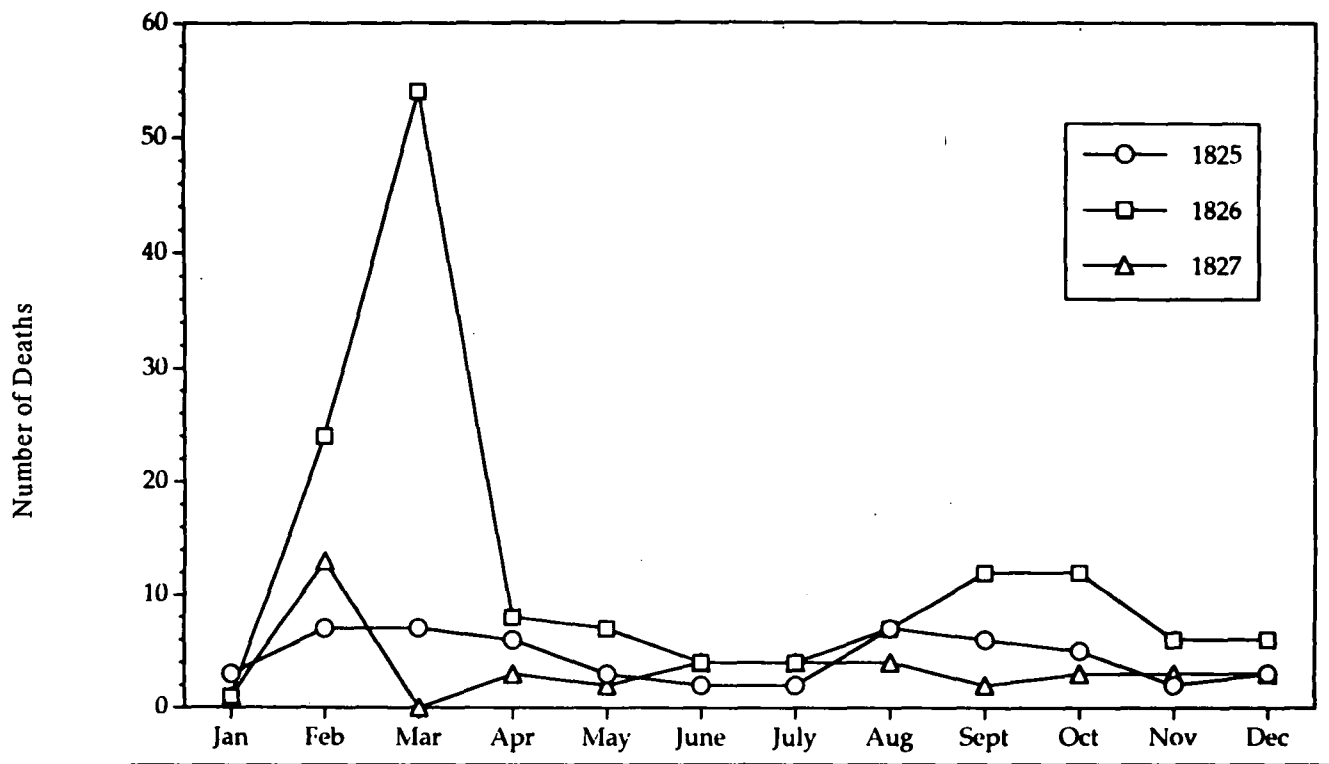


Figure 2: Total number of deaths (month-by-month) in Tomé, San Fernando, Los Enlames, Valencia, Casa Colorado, and Manzano during the years 1825, 1826, and 1827.

TABLE 2: MORTALITY: ADULTS AND CHILDREN*				
Year	Adults		Children #	
	Females	Males	Females	Males
1793	0	3	4	7
1794	0	0	5	2
1795	1	1	0	2
1809	2	0	0	1
1810	5	1	0	1
1811	6	2	0	0
1812	5	5	1	0
1813	3	2	0	0
1814	3	0	0	0
1815	25	10	0	0
1816	21	15	3	2
1817	2	3	0	0
1818	4	6	1	3
1819	1	2	1	0
1820	7	2	0	1
1821	10	7	4	8
1822	6	18	10	13
1823	6	6	20	7
1824	11	6	12	9
1825	18	12	11	9
1826	30	17	53	40
1827	9	8	15	16
1828	13	5	11	14
1829	8	5	14	15
1830	8	9	10	9
1831	13	4	13	17
1832	12	6	31	33
1833	10	17	8	15
1834	13	3	12	10
1835	11	10	9	16
1836	12	19	14	17
1837	11	3	6	13
1838	18	14	12	6
1839	26	27	17	13
1840	12	11	34	31
1841	4	0	19	16
1842	3	6	3	2
1843	9	15	6	9
1844	9	3	4	8
1845	6	8	10	16
1846	8	11	28	16
Totals	381	302	401	397

* All villages and inhabitants (Spaniards, Indians, etc.)
Children under the age of 13 (parvulos).

TABLE 3: CHILD MORTALITY*

Year	Parvulos / as #	percent of all deaths	Children of unknown parentage	percent of all parvulos / as
1793	11	79		
1794	7	100		
1795	2	50		
1809	1	20		
1810	1	14		
1811	0	0		
1812	1	9		
1813	0	0		
1814	0	0		
1815	0	0		
1816	5	12		
1817	0	0		
1818	4	27		
1819	1	25		
1820	1	10		
1821	12	41		
1822	23	46	4	17
1823	27	59	4	15
1824	21	51	6	29
1825	20	38	2	10
1826	93	65	13	14
1827	31	63	8	26
1828	25	57	2	8
1829	29	71	1	3
1830	19	49	2	11
1831	30	63	7	23
1832	64	76	3	5
1833	23	46	1	4
1834	22	58	6	27
1835	25	53	7	28
1836	31	49	7	23
1837	19	56	5	26
1838	18	36	0	0
1839	30	36	3	10
1840	65	70	12	18
1841	35	90	10	29
1842	5	33	0	0
1843	15	38	0	0
1844	12	50	0	0
1845	26	62	4	15
1846	44	58	2	5
Total	798	54	109	14+

* All villages
Children less than 13 years of age (all inclusive—Spaniards, Indians, etc.)
+ Average percent for the years 1822-1846

The most dramatic increase in mortality took place in 1826 when the baseline level of 40 recorded deaths per year rose 250 percent to 143 in the villages along the Rio Grande (table 1, figure 1). The loss of life in Tomé and Valencia was extremely high. Based on the 1790 and 1850 census figures, the forty-one deaths in Tomé that year represented approximately 7 percent of its population; 20–37 percent ($n = 51$) of Valencia's inhabitants perished. Children under the age of thirteen (*parvulos*) accounted for 65 percent ($n = 93$) of all deaths (tables 2 & 3). Although not as dramatic as the 1826 event, the villages of Tomé and Valencia had very high mortalities during the other episodes. In 1839–40 and 1846, the populations of Tomé and Valencia were reduced by 5 and 12 percent, respectively.

Based on two revealing clues—time of year and multiple deaths in the same household within a short period—it can only be concluded that the pronounced increases in mortality were, except for the 1822 episode, precipitated by infections of the respiratory tract with contagious airborne microorganisms. Without exception, the enhanced mortalities of 1815–16, 1823, 1826, 1832, 1836, 1839–40, and 1846 took place during the cold months of the year; this revelation alone implicates airborne microbes. For example, in 1826 the sharp rise in deaths occurred during February and March (figure 2). Of the 143 recorded deaths, more than one-half ($n = 78$) occurred during February and March; 73 percent ($n = 57$) of the 78 decedents were children and 23 percent ($n = 18$) were adult women; 8 of the women were Indians. The enhanced mortalities of 1822 and, in part, those of 1836, were the result of conflict with Indians. In the intervening years—between epidemics—deaths occurred randomly throughout the year (see figure 2, 1825 & 1826).

An episode of enhanced mortality which is not apparent in figure 1 took place in January–February 1841. Beginning abruptly with New Year's day, there were thirty-three deaths during the subsequent month and a half-long period. Incredibly, no deaths were recorded for the previous two months (November–December 1840). Too many deaths occurred suddenly during January–February 1841 without the usual buildup observed in infectious disease outbreaks. A plausible explanation for this ostensible and improbable lack of deaths in November and December 1840 is that the January–February 1841 episode actually began in November, causing many deaths which the priest simply did not have time to record. During the remaining ten months of 1841 there were only six recorded burials (also improbable) which accounts for the apparent normal baseline level of deaths for the year.

That the enhanced mortalities occurred during the cold months of the year implicates airborne infectious microorganisms which enter via inhalation and colonize the respiratory tract; prime candidates include several viruses (smallpox, measles, influenza) and bacteria (diphtheria

and pertussis).¹⁴ Transmission of these agents from one person to another typically occurs via aerosolized droplets expelled from the respiratory tracts of infected carriers. In the northern hemisphere, the diseases caused by these agents occur with highest frequency during the cold seasons (i.e., fall through early spring). The enhanced incidence during the cold months is due, in part, to higher concentrations of exhaled airborne microbes in the air of the less-ventilated crowded dwellings of fall-winter which greatly increases the probability of their being inhaled by susceptibles.

From the records alone, it is not possible to identify with certainty the specific airborne microbe(s) of the 1826 epidemic; however, in light of the extremely high death rate, it is very likely that smallpox virus was the etiological agent. Case-fatality rates as high as 30 percent were not unusual in smallpox epidemics.¹⁵ An epidemic in which smallpox was most certainly the agent occurred in the Tomé-San Fernando-Valencia area during the fall-winter of 1815-16 and trailed off into the summer (figure 2 and table 1). Particularly hard hit was San Fernando which lost twenty-two residents, a significant number considering that in 1790 it had seventy-three inhabitants, a population that did not increase in the ensuing twenty-six years (extrapolated on the basis of mortality figures during non-epidemic years).¹⁶ In 1816, the recording priest noted in the margins of the burial book the term *viruelas* (smallpox) next to the names of four decedents (two adult Indian women from San Fernando and one child from Tomé and another from Valencia). One of the Indian women was *de servicio del* Capitán Bartolomé Baca who earlier that year on 12 January buried an adult son. Overall, more adults than children were killed, and of the adults, about twice as many women died as men (table 2). Although smallpox usually struck during the cold months and early spring, these four deaths occurred in the summer (three in June, one in August) and were probably remnants of a smallpox outbreak that had begun the previous December.

That contagious microbial agents were responsible for the episodic increases in mortality is also evidenced by the occurrence in some of the households of more than one fatality within a short period. For example, within an eight-day span in February 1826 two children from the Valencia house of don Francisco Antonio Otero were interred, a daughter and a Navajo *comprada* (a female who had been purchased). Don Bartolomé Baca of San Fernando (governor of New Mexico, 1823-25) buried two *criados* (servants) in January and March during the 1832 epidemic. Earlier it was noted that Baca lost a son and an adult Indian slave within five months of each other during the 1815-16 episode. During the 1840 outbreak, between 16 February and 2 March, don Vicente Otero buried three adult Indian women from his Valencia hacienda.

As is the case in many microbial-caused epidemics, it is likely that the outbreaks of infectious disease revealed in this study occurred when the number of susceptible individuals attained a threshold level.¹⁷ Typically, infection with highly contagious agents such as smallpox and measles results in lifelong immunity and would explain why, in most of the outbreaks described, children—who most likely had not been previously exposed or were born after the previous epidemics—were the principal victims. Adults were also affected and were the main victims during the 1815–16 and 1839 outbreaks; in all likelihood they too had not been previously exposed to smallpox (1815–16) or other etiological agents. The origin of the microbes—exogenous or endogenous—involved is not clear; however, the likely agents (smallpox, measles, diphtheria, influenza, pertussis) can reside within populations (endogenous organisms), expressing themselves either sporadically or in epidemics when threshold levels of susceptibles are attained.¹⁸ Of course, these agents can also be imported. That a more virulent imported microbe caused the 1826 outbreak is suggested by the extraordinary number of deaths that resulted. Only five years previously, in 1821, the Mexican government officially sanctioned direct trade by New Mexicans with the United States; under Spanish rule direct trade was prohibited.¹⁹ It is possible that along with the trade came a highly virulent strain of microorganism (smallpox?). The epidemics of 1839–40 may have been caused by smallpox imported along the Santa Fe trail from the High Plains region where it raged from 1837 to 1838.²⁰ Another possible source of smallpox could have been California where the disease devastated the Indian populations from 1837 through 1839.²¹ Trade between New Mexico and California began around 1829.²²

Mortality data of Indians living in the Tomé–San Fernando–Valencia area were derived; they accounted for approximately 5 percent ($n = 88$) of the 1,500 deaths (table 4). Most of the Indians ($n = 75$) lived in “Spanish” households of those communities. Ten of the seventy-five were from the San Fernando hacienda of don Bartolomé Baca. The majority were identified in the records as *Yndios* (or *Indios*); sixteen were Navajos, two Yumas, one Acoma, two Zuni, one Apache, and one “Payute.” Indians living in Spanish households were described in the death records as: *serviente/servidor* ($n = 9$, servant), *en servicio* ($n = 9$, in the service of), *perteneciente a* ($n = 1$, belonging to), *comprado* ($n = 8$), *criado de* ($n = 6$, raised by a person other than the natural parent), *de* ($n = 18$, of), *de la casa de* ($n = 8$, from the house of), and, occasionally, *rescatado* ($n = 2$, ransomed from other Indians). Most (56 percent) of these Indian servants/slaves were adult women ($n = 42$), 24 percent were *parvulas*

TABLE 4: INDIAN MORTALITY*				
Year	Adultos	Adultas	Parvulos	Parvulas
1794				1
1812		1		
1815		2		
1816		2		
1819	1			
1821		2		
1822		1		
1823		3		1
1824	2		1	
1825	1			
1826	2	10	4	8
1827			1	1
1828		1		
1829		2		
1830		2	1	2
1831		7		1
1832		2	2	
1833	2			
1834		3		
1835	1			1
1836		2		
1838		2		1
1839		1		1
1840		5		
1841		1		
1846		3		1
Total	9	52	9	18

* Most lived in "Spanish" households in the Tomé-San Fernando-Valencia area. Ten of the 88 were from the hacienda of Bartolomé Baca of San Fernando (6 adultas, 3 adultos, 1 parvulo).

($n = 18$), 8 percent were adult males ($n = 6$), and 12 percent were *parvulos* ($n = 9$). Of the eight Indians described as *comprados*, three were adult women, three were *parvulas* and two were *parvulos*; six of the eight were Navajos.

An unusual entry in the burial records was that of an adult resident of San Fernando from the United States ("Estados Unidos del Norte") who was baptized, died, and buried at Tomé on 16 February 1826. This entry is unusual because it is the only notation of a foreigner in the burial records.

An unexpected revelation was the number of "orphaned" children of unknown parentage (*padres no conocidos* or *padres incognitos*) the majority of whom were referred to by the recording priests as *espuestos* or, occasionally, *expósitos* (orphans/foundlings) (table 3). These so-called foundlings (forty-two females, forty-four males) and the other twenty-three children of unknown parentage comprised 14 percent of all children ($n = 766$) who received last rites during the years 1822 through 1846. That a deceased child was of unknown parentage was not indicated in the Tomé burial records prior to 1822 and only was noted after the replacement in 1821 of the Franciscan friars at Tomé with secular priests, beginning with Francisco Ygnacio de Madariaga. During the eighteenth century, illegitimate children of mixed ancestry abandoned at the doorsteps of the local New Mexico missions were referred to as *hijos de la iglesia* (children of the church); this designation did not appear in the Tomé death records.²³ Eight of the eighty-five *espuestos* were identified as Indian. It is likely that many of these *espuestos* were born to unmarried mothers living in the same households where the children were supposedly abandoned. Because of the social stigma associated with illegitimacy, it is likely that in most instances the terms were euphemistically used. This disapprobation of illegitimacy would also account—prior to Madariaga's arrival—for clerics (and families?) omitting any hint of illegitimacy from the church records.

That some of the *espuestos* were indeed foundlings, and possibly victims of poverty, is certainly not excluded. For example, around the year 1800 in Spain, approximately 50 percent of foundlings deposited at Madrid's major orphanage were legitimate children abandoned by their impoverished parents.²⁴ Undoubtedly, some of the so-called *espuestos* were children of captive Indian women fathered by their masters or other household members. Compelling data have been presented by Ramón A. Gutiérrez that such exploitation occurred in New Mexico.²⁵ The level of illegitimacy inferred by the present study is not unusual when compared with figures available for other nineteenth century locales. A comprehensive study by Shirley F. Hartley comparing illegitimacy in a number of countries during the late nineteenth century revealed the following rates for the year 1876: Iceland, 23 percent; Austria, 14 percent; Sweden

TABLE 5:
DEATHS ATTRIBUTED TO INDIANS
1793-1798* 1809-1852

Year	No.	Village	Sex	Indians implicated
1793	1	Tomé	Male adult	Apaches
	1	Los Chavez	Male adult	Apaches
1798	3	Sabinal	Male adults	Apaches
1809	2	Sabinal	Male adults	Apaches
1810	1	Cevilleta	Male adult	Apaches
	1	Tomé	Male adult	Apaches
1822	1	Los Lentes	Male adult	Navajos
	8	Valencia	Male adults	Navajos
	3	Los Enlames	Male adults	Navajos
	3	Tomé	Male adults	Navajos
	1	?	Male adult	Navajos
1823	1	San Fernando	Male adult	Navajos
	1	Los Enlames	Male adult	Navajos
	1	Tomé	Male adult	Navajos
1833	1	Manzano	Male adult	Apaches
	1	Valencia	Male adult	Apaches
	2	Los Enlames	Male adults	Apaches
	1	?	Male adult	Apaches
1835	1	Casa Colorada	Male adult	Navajos
	2	Tomé	Male adults	Navajos
	1	?	Male adult	Navajos
	1	Valencia	Male adult	Apaches
1836	1	Valencia	Male adult	Apaches
	2	Manzano	Male adults	Apaches
	10	Manzano	Male adults	"Yndios"
1839	3	Valencia	Male adults	Navajos
1840	1	Tomé	Male adult	Navajos
1843	2	Casa Colorada	Male adults	"Enemigos"
Total	57			

* Three victims were specifically identified as "Español" (1822, Valencia), one as "Yndio-Coyote" (1822, Valencia), and two as "Yndio" (1835, one from Tomé and the residence of the other not indicated). In Tomé church records, "enemigos" (enemies) connoted Indians.

and Denmark, 10 percent; Italy, France, and Hungary, 7 percent (nineteenth-century rates for the United States were not included).²⁶ In another study, bastardy rates of 16 percent to 24 percent were recorded in the Rennes region of France during the years 1809 to 1814.²⁷ The inferred illegitimacy rates of the current study might be corroborated by a close examination of baptismal records.

The burial records from 1793 to 1846 revealed that fifty-seven adult males were killed by Indians: a total of forty-five from the study area [Tomé (n = 8), Valencia (n = 14), Los Enlames (n = 6), San Fernando (n = 1), Casa Colorada (n = 3), and Manzano (n = 13)]; included were eight from nearby villages and four whose residence was not indicated (table 5). Intriguing is the finding that all of the deaths were only of adult males. These deaths attributed to Indians represented 3 percent—or an average of one per year—of all recorded deaths in the area between 1793 and 1846. Of the fifty-seven individuals, eighteen were recorded as having been killed by Apaches, twenty-seven by Navajos, and twelve by unidentified “Yndios.” The villages most affected were Valencia and Manzano. On 18 April 1822 eight men killed by Navajos were given last rites, six from Valencia, one from Los Lentos (located across the Río Grande from Valencia) and one of unknown residence. Later that year, on 5 May, four men (three from Los Enlames and one from Tomé) killed by Navajos were interred; in August Navajos killed two residents of Tomé and one from Valencia. These deaths in the Tomé–Valencia area during 1822 were probably the result of Navajo reprisal raids in the Río Abajo and Río Arriba or service in the citizen army.²⁸ The previous year Governor Facundo Melgares had directed campaigns against the Navajos which continued into 1823 under the command of his successor, José Antonio Vizcarra. One of the campaign officers was Captain Baca of San Fernando. In 1836, twelve men from Manzano were killed by Indians: two by Apaches and ten by “Yndios”; two were buried on 26 April, four on 15 November and five on 26 December. Along with an already enhanced mortality caused by infectious disease during the months of January through April in the Tomé–Valencia area, these deaths of Manzano residents further skewed the overall mortality for 1836 significantly above the base-line level (see figure 1).

That other individuals from these central New Mexico villages were killed by Indians and not identified or included in the burial records is not ruled out. Evidence for such omission comes from other records cited by Frank McNitt in his book on the Navajo wars.²⁹ He wrote that in December 1840, three men killed by Navajos during reprisal raids were buried in Tomé. As pointed out earlier, the Tomé cleric failed to register any deaths for that month or for November.

These data indicate that the threat from Indians during this period and in this area was not as pronounced as claimed by some writers.³⁰ Of course, the records studied do not provide any information regarding those injured by Indians, nor do they reveal casualties among Indians if some of the deaths resulted during pitched battles.

Marc Simmons recently wrote that gastrointestinal infections were probably quite common in New Mexico during the Spanish colonial and Mexican periods.³¹ Given the universal lack of consistently secure drinking water and proper disposal and treatment of human waste, that is not an unreasonable conclusion. Of course, the same was true for the rest of the contemporary Western world during the eighteenth and nineteenth centuries. Indeed, the most common microbial disease entities in the United States during those centuries were agents of enteritis in the summer and other microbes that caused respiratory infections during the winter.³² The present study illustrates that during the late Spanish colonial and Mexican periods respiratory infectious diseases were the major cause of death in the Río Abajo during the years of revealed enhanced mortality; one-third of all deaths recorded between 1815 through 1846 can be attributed to these epidemics. The patterns discerned in this investigation implicate infectious airborne microbes such as smallpox, diphtheria, pertussis, influenza, and measles. Although gastrointestinal infectious diseases were a very likely and important cause of morbidity, no evidence (i.e., increased mortality in the summer months) was uncovered that they contributed significantly to mortality during the years 1793 through 1846. The high death rates among children revealed in this study were not unique to the Río Abajo, they were common throughout the United States and Europe, contributing to an estimated life expectancy at birth in the United States of only thirty-five years during the latter part of the eighteenth century and close to forty years by the mid-nineteenth century.³³ This research is now being extended into the post-Mexican period. Preliminary analysis of the burial records from the Río Abajo after the American invasion in 1846 indicates that epidemics of contagious airborne diseases resulting in horrific mortality rates continued into the early decades of the twentieth century.

NOTES

This study was supported, in part, by grants from The University of New Mexico's Center for Regional Studies, Albuquerque. The author wishes to thank Yan-Ping Li for technical assistance.

1. Lansing Bartlett Bloom, "Early Vaccination in New Mexico," *Historical Society of New Mexico* 27 (Santa Fe, New Mexico: Santa Fe Publishing Company, 1924), 8.
2. Fray Angélico Chávez, *Archives of the Archdiocese of Santa Fe, 1678-1900* (Washington, D.C.: Academy of American Franciscan History, 1957), 235-36.
3. Myrtle Greenfield, *A History of Public Health in New Mexico*, (Albuquerque: University of New Mexico Press, 1962), 13, 22.
4. *Ibid.*, 27; Graham S. Wilson and A. Ashley Miles, *Topley and Wilson's Principles of Bacteriology and Immunity*, 2 vols. (Baltimore, Maryland: Williams and Wilkins Company, 1964), 2:2282.
5. Oswald G. Baca and Mary Ann Baca, *A Compilation of Burial Records of the Central New Mexico Villages of Tomé, San Fernando, Los Enlames, Valencia, Peralta, Casa Colorada, and Manzano, 1793-1795 & 1809-1846* (Albuquerque: Center for Regional Studies and Southwest Hispanic Research, University of New Mexico, 1993); Our Lady of the Immaculate Conception Catholic Church (Purísima Concepción) burial records, Tomé, New Mexico, Church of Jesus Christ of Latter Day Saints Genealogical Library, Albuquerque, microfilm numbers 017026 (1793-1847) and 017028 (1809-1885).
6. David J. Weber, *The Mexican Frontier, 1821-1846: The American Southwest Under Mexico* (Albuquerque: University of New Mexico Press, 1982), 162.
7. Chávez, *Archives of the Archdiocese of Santa Fe*.
8. Andrew Hayes, *150th Anniversary of the Founding of the Parish of Our Lady of Belen* (Belen, New Mexico: Our Lady of Belen Parish, 1943). The priests at Tomé from 1793 through 1853 were: Cayetano José Bernal (1793-1801); José Ygnacio Sanches (1809-21); Francisco Ygnacio de Madariaga (1821-38); Mariano de Jesus Lucero (1838-39); Rafael Ortiz (1839-45); José de Jesus Cabeza de Baca (1845-53), Baca and Baca, *A Compilation of Burial Records*, 117.
9. The first entry in the Tomé burial records which follows is from 3 March 1793 and, except for noting the age of the child, is typical of the 1,532 entries from 1793 through 1846. See Baca and Baca, *A Compilation of Burial Records*, 5. "En veinte, y seite de Marzo de mil setecientos noventa y tres a<ño>s' En esta Yg<lesi>a' de Tomé yo el M<in>stro Fr<ay> Cay<eta>no" Bernal *di Sepultura* al cuerpo dif<un>to" de Juana, Parvula q<u>e' nacio, y murio el dia veinte y seis hija leg<itim>a' de Blas Sedillo y de Victoria Garcia vecinos de y p<ar>a' q<u>e' conste lo firme. *Vt Supra*. Fray Cayetano José Bernal <rubrica> Ministro." Translation: On the 27th of March 1793 in this church of Tomé I the minister Fray Cayetano Bernal buried the deceased body of Juana, child, who was born and died on the 26th day, legitimate daughter of Blas Sedillo and Victoria Garcia, neighbors. Signed: Fray Cayetano José Bernal, minister.
10. Centers for Disease Control and Prevention, "Infant Mortality-United States, 1990," *Morbidity and Mortality Weekly Report* 42 (12 March 1993), 161.
11. Ramón A. Gutiérrez, *When Jesus Came, the Corn Mothers Went Away: Marriage, Sexuality, and Power in New Mexico, 1500-1846* (Stanford, California: Stanford University Press, 1991), 327.
12. Centers for Disease Control and Prevention, *Morbidity and Mortality Weekly Report* 42 (12 March 1993), 170, table 3.

13. Virginia Langham Olmstead, *Spanish and Mexican Colonial Censuses of New Mexico: 1790, 1823, 1845* (Albuquerque: New Mexico Genealogical Society, 1975), 17-25; *New Mexico 1850 Territorial Census*, 4 vols. (Albuquerque: New Mexico Genealogical Society, 1976), 1:48-57.
14. Wilson and Miles, *Topley and Wilson's Principles of Bacteriology and Immunity*, 2:1668, 1989, 2008, 2269, 2391; Elliot Goldstein and Paul D. Hoeprich, "Diphtheria"; Chien Liu, "Influenza"; Stephen I. Morse, "Whooping Cough"; Paul D. Hoeprich, "Bacterial Pneumonias"; S. Michael Marcy and Sidney Kibrick, "Measles"; J. Donald Millar, "Smallpox, Vaccinia and Cowpox," in *Infectious Diseases: A Modern Treatise of Infectious Processes*, ed. Paul D. Hoeprich (Hagerstown, Maryland: Harper & Row, 1977), 249, 273, 277, 297, 691, 736.
15. Wilson and Miles, *Topley and Wilson's Principles of Bacteriology and Immunity*. 2:2268.
16. Olmstead, 18-19.
17. Wilson and Miles, *Topley and Wilson's Principles of Bacteriology and Immunity*. 2:1540-62.
18. *Ibid.*
19. Weber, *The Mexican Frontier*, 97.
20. Clyde D. Dollar, "The High Plains Smallpox Epidemic of 1837-38," *Western Historical Quarterly* 8 (January 1977), 15-38.
21. Weber, 237.
22. *Ibid.*, 101, 134.
23. Gutiérrez, *When Jesus Came*, 156.
24. Joan Sherwood, *Poverty in Eighteenth-Century Spain: The Women and Children of the Inclusa* (Toronto, Ontario: University of Toronto Press, 1988), 95, 111.
25. Gutiérrez, 199-201.
26. Shirley Foster Hartley, *Illegitimacy* (Berkeley: University of California Press, 1975), 36-39.
27. Jean Meyer, "Illegitimates and foundlings in pre-industrial France," in *Bastardy and its Comparative History: Studies in the History of Illegitimacy and Marital Nonconformism in Britain, France, Germany, Sweden, North America, Jamaica and Japan*, ed. Peter Laslett, Karla Oosterveen and Richard M. Smith, (Cambridge, Massachusetts: Harvard University Press, 1980), 257.
28. Frank McNitt, *Navajo Wars: Military Campaigns, Slave Raids, and Reprisals* (Albuquerque: University of New Mexico Press, 1990), 52-54; Weber, 94.
29. McNitt, *Navajo Wars*, 81.
30. Gilberto Espinosa and Tibo J. Chavez, *El Rio Abajo* (Pampa, Texas: Pampa Print Shop, 1966), 65, 95.
31. Marc Simmons, "Hygiene, Sanitation, and Public Health in Hispanic New Mexico," *New Mexico Historical Review* 67 (July 1992), 208
32. Richard Harrison Shryock, *Medicine in America: Historical Essays* (Baltimore, Maryland: Johns Hopkins University Press, 1966), 14.
33. *Ibid.*, 12, 14.

Call for Papers

36th Annual Conference of the
Western History Association
October 9-12, 1996

Lincoln, Nebraska

*Grasslands and Heartlands: Remembering and Representing
the Great Plains in History and Literature*

The program committee for the 1996 meeting of the Western History Association requests proposals for papers and sessions on all aspects of Western and frontier history. For this meeting in Lincoln, Nebraska, we especially welcome panels and papers that explore the history of the grasslands and its peoples. This will be a joint meeting of the Western History Association and the Western Literature Association, so we encourage proposals that reflect on the interplay of imagination and experience, of myth and memory, in reconstructions and representations of the Great Plains. We look as well for interregional and international proposals: for comparative assessments of the biotic and human communities of woodlands and grasslands, of prairies and deserts, of plains and pampas.

A brief summary of prospective papers, with participant names, addresses and telephone numbers, and a short paragraph on each presenter, chair, and commentator will be most useful. The committee will assume that all those whose names appear in the proposals have agreed to participate.

Proposals should be sent by September 1, 1995 to the committee chair:

John Mack Faragher
Department of History
Yale University
Box 1504A Yale Station
New Haven, Connecticut 06520-7425
voice (203) 432-0727 fax (203) 432-7587