

A Demographic Analysis of Shaker Mortality Trends

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7. Introduction and Data Sources

The health of Shakers is an important and overlooked aspect of the quality of Shaker life. Their quaint popular image, which centers on crafts, music, and the immaculately restored sites open to the public today, omits certain realities of communal life. Hundreds of Believers lived in each of the Shaker communities, and the resulting crowding offered an excellent environment for the spread of certain infectious diseases. Shaker technology kept other illness at bay. Shaker-World interactions provided opportunities for epidemic disease to enter the community. The disease environment of Shaker communities presents a window on both the health status of the America outside Shakerdom and on conditions unique to Shaker communal societies.

This paper combines techniques of demography and epidemiology to examine health conditions within some nineteenth century Shaker communes. It concludes that Shakers did indeed live unusually long lives; that through cleanliness and effective technology they minimized effects of the most spectacular infectious diseases of the day; and that through crowding and improper treatment, mortality from consumption (pulmonary tuberculosis) was at least as high among the Shakers as it was in the most severely affected areas in the United States.

The Shakers left behind an uneven variety of manuscripts and

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publications that describe broad questions of communal health conditions. Some communities kept very detailed records and some simply did not. Working against the survival of much of these manuscripts was the prolonged decline of the Society. As each community closed, written records were often treated with indifference. Some were sold to collectors, some given to local historical societies, some moved to surviving communities, and some were destroyed. As a result, it is difficult to form a full statistical picture of any one community; however, taking those records that have survived as a composite picture of a representative Shaker community, with appropriate caution, yields insights into the communal disease environment.

Three kinds of manuscripts proved useful in this study. *Membership or population records* are very detailed for some communities, giving exact date and location of birth, entrance into the community, and departure from the community for each member.¹ *Extensive cause of death records* are available for the communities of North Union, Ohio; Tyringham, Massachusetts; and Enfield, Connecticut.² These records give causes for nearly three-fourths of all deaths at these communities. Information on morbidity or nonlethal sickness can be extracted from *journals and letters*. In particular, a journal kept at the Physician's Office in the Harvard, Massachusetts, community contains a wealth of data on epidemics and trends in therapies.³

II. Mortality among the Shakers

A reasonable beginning for quantifying health conditions is to examine mortality among the Shakers. Mortality rates are the crudest measure of lack of health, and since death is so easily determined, mortality measures of different groups of people can easily be compared. Alternatively, measures of longevity can be compared. The inverse of mortality is life expectancy, which is especially appropriate to study, as a long life was one side of being a Shaker which the

1. Isaac N. Youngs, "Names and ages of those who have been gathered . . .", manuscript, The Winterthur Library: The Edward Deming Andrews Memorial Shaker Collection, no. 1078.

2. "A Record of the Deaths that have occurred [sic] in the United Society of Believers at Enfield Conn. Commencing AD. 1787," Western Reserve Historical Society Shaker Collection (hereafter WRHS) manuscript III:A-3; "A Record of Deaths in the United Society at Tyringham Commencing in the year 1790," WRHS III:A-12; "Obituary copied from the original manuscript . . . North Union July 25th 1845," WRHS III:B-29.

3. "Physician's journal or an account of the sickness at Harvard . . .", WRHS V:B-41.

Shakers themselves liked to publicize.⁴ The Shaker claim of unusual longevity appears to be justified by three different measures: age at death, age-adjusted mortality rate, and expected years of life at age 20.

The Shakers offered one consistent claim as proof of the salubrity of the Shaker Way: they lived longer than non-Shakers. For example, Avery's pamphlet "Longevity of Virgin Celibates" includes a collection of statistics on the age at which many Believers died. This provides an appropriate beginning for an examination of how well they lived. Mortality records are usually quite reliable and sometimes are the only way to quantify living standards in historical communities. Even the Shakers could calculate and publicize average age at death, so I take them on their own terms and compare age at death for samples of Shakers and other rural New Englanders in Table I.⁵ Clearly, these New England Shakers died at later ages than the small sample of contemporary Massachusetts residents obtained by Dethlefsen from cemetery gravestones and town vital records.

Table 1
Age at death in years, Shakers vs. other New Englanders

<i>Harvard, Massachusetts and Enfield, New Hampshire Shaker Communities</i>			<i>Kingston, Massachusetts</i>		
<i>Years</i>	<i>N</i>	<i>Mean age</i>	<i>Years</i>	<i>N</i>	<i>Mean age</i>
1784-1800	31	44.8	1780-1799	120	33.9
			<i>Cohasset, Massachusetts</i>		
			1780-1799	32	36.1
			<i>Kingston, Massachusetts</i>		
1801-1820	87	52.9	1800-1819	375	37.5
1821-1830	71	54.7	1821-1829	215	42.0

Sources: Shaker data from Edward Deming Andrews, *The People Called Shakers*, page 198; Massachusetts data from Edwin S. Dethlefsen, Colonial Gravestones and Demography. *American Journal of Physical Anthropology* 31 321-333 (1969). Following Dethlefsen's evaluation of data reliability, the pre-1800 data are from town cemetery headstones and post-1800 data are from town vital records.

4. Giles B. Avery, "Longevity of Virgin Celibates," n.d., in Elijah Myrick, "The Celibate Shaker Life," pamphlet published at Mount Lebanon, c. 1889; Calvin Green and Seth Y. Wells, *A Summary View of the Millennial Church* (Albany: C. Van Benthuyssen, 1848; reprint, New York: AMS Press, 1973), pp. 84-85. See also the interview of Frederick Evans by Charles Nordhoff in *Communitistic Societies of the United States* (New York: Dover Publications 1966), pp. 159-160.

5. Edwin S. Dethlefsen, "Colonial Gravestones and Demography," *American Journal of Physical Anthropology* 31 (1969), pp. 321-333.

This is a helpful first approximation. Dethlefsen has reported an uncommon mortality measure, and the Shakers were in fact older at death in each time period. However, mean age at death can be a misleading mortality statistic in the following sense. High rates of infant mortality can lower the sample mean to an average age at death that does not represent the community's adult mortality regime. This shortcoming is magnified when two groups with such different demographic structures as the Shakers and the Massachusetts towns are compared. The Shakers, as a result of their celibacy, had virtually no newborns and few infants or young children residing in their communities. For example, the 1850 census showed that 41 percent of the white population nationally was under the age of 15, while 17 percent of the New Lebanon Shakers were younger than 16, and other Shaker communities had similar proportions of children.⁶ Children and infants had very high mortality rates in the nineteenth century.⁷ The possibility that the greater age at death for Shakers resulted from demographic artifacts and not true mortality differences cannot be excluded by comparing average ages at death.

Comparison of life expectancies of twenty year-olds within and outside Shakerdom describes mortality independent of demographic structure. Life tables to provide such data can be formed by period or by cohort. To infer life expectancy from a cross-section of a population taken in one period requires the assumption of a steady state population; that is, birth, death, and migration rates must be constant for the population over the lifetimes of those in the sample. But movement into and out of Shaker communities was anything but constant. For example, elsewhere I have noted that of the residents of the North Union, Ohio, community present at the 1850 and 1860 censuses, two-fifths would eventually apostatize.⁸ Hence, a period analysis is not really appropriate in the Shaker case. On the other

6. U.S. Bureau of the Census, *Historical Statistics of the United States* (Washington: Department of Commerce, 1975), p. 16; Priscilla J. Brewer, *Shaker Communities, Shaker Lives* (Hanover: University Press of New England, 1986), pp. 228-238.

7. R.S. Meindl and A.C. Swedlund, "Secular Trends in Mortality in the Connecticut Valley, 1700-1850," *Human Biology* 49 (1977), pp. 389-414; Richard H. Steckel, "The Health and Mortality of Women and Children, 1850-1860," *Journal of Economic History* 48 (1988), pp. 333-345.

8. John E. Murray, "Communal Living Standards and Membership Incentives: The Shakers 1780-1880" (Ph.D. diss., The Ohio State University, 1992). Cf. William Sims Bainbridge, "The Decline of the Shakers: Evidence from the United States Census," *Communal Societies* 4 (1984), pp. 19-34, which differs from my results in its failure to distinguish between death and apostasy as causes of leaving the community.

hand, the number of Shakers for whom data are available is so small that a strict cohort analysis, which would follow all Shakers born in a particular decade until their deaths, is not quite feasible either.

As a compromise, I have estimated a life table which includes all Shakers present between 1820 and 1860 in the New Lebanon Church Family. The effect is to treat this group of people as if they were a single cohort, which makes any dynamic trends in longevity vanish. That is a small price to pay, though, as I seek only an average life expectancy that can be compared to other such estimates for contemporary Americans. One problem rarely encountered in other American studies is how to treat people who leave the sample through means other than death, that is, through migration. As a voluntary society, the Shakers experienced withdrawals or apostasies that were a much larger proportion of their population than any emigration from a national population. In order not to lose the information provided by the presence of each apostate (that each such person did *not* die while a Shaker), the statistical package I used (PROC LIFETEST in SAS) treated apostates as right-censored observations.⁹ That is, their birth, entrance, and apostasy dates were known, but their death date was not known, so the apostates were included in the denominator of the age specific death rates while they were Shakers and simply dropped from the sample, with no death recorded, when they apostatized.

Table 2 shows years of expected remaining life for 20 year-olds in several American communities of the nineteenth century, as well as some national estimates. A broad range of populations are represented.¹⁰ The results again consistently support the Shaker claim to longevity. While early nineteenth-century Moravians could expect to live 44 to 46 additional years when they were 20 years of age, and residents of antebellum rural Massachusetts could expect 45 additional years, the New Lebanon Shakers lived on average over 54 additional years. Holding mortality constant among the age groups that formed the greatest demographic difference between the Society and the World, young Shakers could expect to live at least a decade longer than their cohorts in the World. The Shakers experienced

9. Harold A. Kahn, *Introduction to Epidemiologic Methods* (New York: Oxford University Press 1983), p. 144.

10. Beverly Smaby, *The Transformation of Moravian Bethlehem: From Communal Mission to Family Economy* (Philadelphia: University of Pennsylvania Press, 1988), pp. 76-83; Meindl and Swedlund, "Secular Trends"; Maris A. Vinovskis, *Fertility in Massachusetts from the Revolution to the Civil War* (New York: Academic Press, 1981), p. 35; A.J. Jaffe and W.I. Lourie, "An Abridged Life Table for the White Population of the United States in 1830," *Human Biology* 14 (1942), pp. 352-371.

Table 2
Life Expectancy at Age 20

<i>Group or place</i>	<i>Source</i>	<i>Years of study</i>	<i>Additional expected years</i>
Moravians	Smaby	1784-1803	46.2
Moravians	Smaby	1804-1823	43.9
Moravians	Smaby	1824-1843	41.5
Portsmouth, N.H.	Estes	1809-1811	36 (M) 37 (W)
Greenfield, Mass.	Meindl and Swedlund	1803-1814	31.2
Boston	Vinovskis	1826-1835	35.8
Boston	Vinovskis	1839-1841	37.7
Boston	Vinovskis	1859-1861	36.6 (M) 38.9 (W)
Salem	Vinovskis	1818-1822	35.0 (M) 41.1 (W)
Salem	Vinovskis	1840-1842	42.0 (M) 40.8 (W)
Rural U.S.	Jaffe and Lourie	1826-1835	42.9
Rural Massachusetts	Jaffe and Lourie	1859-1861	45.1 (M) 45.2 (W)
United States	Pope	1800-1809	44.4 (M) 45.3 (W)
United States	Pope	1820-1829	41.1 (M) 38.2 (W)
New Lebanon Shakers	All members	1820-1860	56.8 (M) 54.6 (W)
New Lebanon Shakers	Life members only	1820-1860	56.4 (M) 54.4 (W)

All years are mean expected additional years of life at age 20, except for Portsmouth, which is for 21 year olds. Dates indicate period of study, except the Pope and Meindl and Swedlund studies, which are of birth cohorts. If sex not given, both sexes are pooled.

longevity unknown to other Americans until the second half of the twentieth century. The full tables presented in Table 3 show that the Shaker longevity advantage in young adulthood continued into old age.

A noteworthy finding is that Shaker Brethren could expect to live longer than Shaker Sisters. This result may be related to other biomedical markers to be discussed later in this essay, which show Shaker Brethren to have fared better than Sisters. Possibly it is typical of nineteenth century Americans, as a recent study has concluded that longer life expectancies for women than men may be a twentieth century phenomenon.¹¹ Interpretation in light of recent feminist studies, which suggest that sexual inequality within Shaker communities was greater than previously thought, requires some care, as I

11. Clayne L. Pope, "Adult Mortality in America Before 1900: A View from Family Histories," in Claudia Goldin and Hugh Rockoff, editors, *Strategic factors in Nineteenth Century American Economic History: A Volume to Honor Robert W. Fogel* (Chicago: University of Chicago Press, 1992), pp. 267-296.

Table 3
Life tables for Shakers and other rural Americans

	Rural New England 1826-1835	Rural Massachusetts 1859-1861		New Lebanon Shakers 1820-1860	
<i>Age group</i>	<i>Both sexes</i>	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
<5		⁴⁷ / ₆	⁴⁸ / ₄	1 76 4	73 1
5-9	54.6	55.5	54.8	f	
10-14	51.0	52.7	52.3	\	
15-19	46.7	48.7	48.4	J	
20-29	42.9	45.1	45.2	56.8	54.6
30-39	36.2	38.1	39.2	47.4	45.5
40-49	29.6	31.3	33.5	37.5	37.5
50-59	22.5	23.4	25.9	28.3	29.2
60-69	15.3	16.3	18.4	19.3	21.1
70-79	8.4	10.2	10.9	11.3	13.0
>=80	1.0 5.3	5.9	5.9	7.9	

The first three columns are from Vinovskis (1981), p. 35 and Jaffe and Lourie (1942). The last two were calculated using PROC LIFETEST on SAS 5.18.

will show later in the essay.¹² In any case, for both sexes the results of the life table analysis presented here strongly support the Shaker claim of unusually long lives.

Because the difference between Shaker and non-Shaker longevity is so great, it is worthwhile to examine the claim from one more perspective: death rates. As with age, two estimates are available, one crude and one which takes into account the demographic differences between the Shakers and the World. The most reliable mortality rates for America at this time are taken from Massachusetts vital statistics registers, which began in 1842. They are not perfect, but suffice after data from the 1840s are omitted, which are known to be in error by as much as half. Data from following years must be adjusted for undercounting of deaths by roughly fifteen percent in 1850, eight percent in 1860, and three to four percent in 1869.¹³

Table 4 gives death rates as deaths per 1000 people for Massachusetts and per 1000 person-years for the three Shaker communities with well documented mortality statistics. The Shaker communities have higher *crude* death rates than Massachusetts in each of the three

12. Cf. Marjorie Procter-Smith, *Shakerism and Feminism: Reflections on Women's Religion and the Early Shakers* (Old Chatham: Shaker Museum and Library, 1991).

13. Edward Meeker, "The Improving Health of the United States: 1850-1915," *Explorations in Economic History* 9 (1972), pp. 353-373.

Table 4
Crude and age-adjusted death rates per 1000 person years, all ages
Adjusted for Massachusetts undercount

<i>Years</i>	Massachusetts	Three Shaker Communities	
	<i>CDR</i>	<i>CDR</i>	<i>SMR</i>
1852-1858	19.6	22.6	0.87
1856-1863	19.9	22.8	0.88
1865-1873	19.7	20.0	0.75

Death rates, 15-29 year olds
Adjusted for Massachusetts undercount

<i>Years</i>	Massachusetts	Three Shaker Communities
	<i>CDR</i>	<i>Death Rate</i>
1852-1858	9.8	11.8
1856-1863	9.8	11.7
1865-1873	10.1	6.8

The three Shaker communities are North Union, Ohio; Tyringham, Massachusetts; and Enfield, Connecticut. The CDR is deaths per 1000 person-years. The SMR, or Standardized Mortality Ratio, is the ratio of actual Shaker deaths to the number of Shaker deaths expected after adjusting for the Shaker age group structure. The age adjustment was made indirectly, by imposing the Shaker demographic structure on Massachusetts age-specific death rates. The Massachusetts data are published in the annual Reports of the Secretary of the Commonwealth. They have been corrected for undercounting as described in Vinovskis (1981) and Meeker (1972).

time periods. However, this is the result of the unusual Shaker demographic structure. Adjusting for the differences in age structures is done with a common epidemiological statistic, the Standardized Mortality Ratio (SMR), which is the ratio of observed deaths to expected deaths. The number of expected deaths is adjusted indirectly for differences in the Shaker demographic structure. The age-group specific death rates in Massachusetts were imposed on the Shaker age group populations, which yielded the number of expected deaths by age group. The expected death rate is the sum of these over all the age groups. Thus, in the 1852-1863 period, the Shakers died at a rate just 87 percent of the expected death rate after accounting for demographic differences between Massachusetts and the three Shaker communities. The SMR suggests that higher Shaker crude death rates are indeed artifacts. The only conclusion possible is that Shaker longevity was a real phenomenon.¹⁴

14. Judith S. Mausner and Shira Kramer, *Mausner & Bahn Epidemiology: An Introductory Text* (Philadelphia: W.B. Saunders, 1985), pp. 338-344.

In mortality terms, Shakerdom was not uniformly superior to the World. The data at the bottom of Table 4 show that into the 1860s, mortality among young adults was worse for "the Shakers than in the World. Since these Shakers, as I noted above, could expect to live longer than most Americans, here is a paradox. The resolution lies in the far smaller age specific death rates among those over 30 years of age. Factors behind this differential mortality, namely disease patterns in Shaker communities, will be addressed in the next section of this essay.

Before analyzing Shaker morbidity, it is important to examine one special cause of death that has attracted the attention of scholars in the past: suicide. Using suicide rates to make inferences about more general issues of mental health is risky. Still, Brewer uses arguments developed by Kern to conclude that "suicide was not atypical" among the Shakers.¹⁵ But this is not accurate. Kern and Brewe consider only the New Lebanon Shaker community. One of the "suicides" there may more accurately be described as an accident: that of Isaac Newton Youngs in August 1865. The senile Youngs defended himself while momentarily unattended, because he believed the building he lived in to be on fire.

A greater problem is drawing inferences about Shaker mental health from just one community's data. Table 6 below shows that "suicide" accounted for only 1 of the 507 deaths at the three communities with cause of death records. Even if the death attributed to "poison" is treated as a suicide, the rate of suicide per 10,000 person-years in this sample is just 0.77, while the rate in Massachusetts between 1856 and 1894 was 0.81. The difference is negligible. Further, a recent study of the Canterbury Shaker community found only one suicide at that community, in 1872, for a rate of 0.51 per 10,000 person-years over the nineteenth century. Relative to the Massachusetts data cited in Kern, the Shakers as a whole do not seem to have been unusually susceptible to suicide.¹⁶

15. Brewer, *Shaker Communities*, p. 175; Louis J. Kern, *An Ordered Love: Sex Roles at Sexuality in Victorian Utopias-the Shakers, the Mormons, and the Oneida Community* (Chapel Hill: University of North Carolina Press, 1981), pp. 104-105.

16. Shaker populations to calculate rates found in Brewer, *Shaker Communities* pp. 215-217; Massachusetts data in Samuel W. Abbott, "The Vital Statistics of Massachusetts: A Forty Years' Summary," in *The Demographic History of Massachusetts* (New York: Arno Press 1976), pp. 818-820; Canterbury data from Richard Corbit Borge *Canterbury Shaker Village: A Demographic Analysis*, Ph.D. diss., 1989, University of New Hampshire.

III. Disease among the Shakers

The Shaker mortality record consists of many different causes of death. Shakers generally had lower prevalence of the infectious diseases that were technologically preventable. For example, Shaker skill at water provision kept incidence of and mortality from cholera and typhoid at very low levels (Tables 5 and 6). Several communities carefully constructed long aqueducts leading from pure underground springs. The Shakers themselves were somewhat aware of the relation between clean water and health. Elijah Myrick incorrectly attributed the decline in scrofula at the Harvard, Massachusetts, community to its improved water supplies. Scrofula is a synonym for lymphatic tuberculosis, and is not water-borne. Shaker cleanliness also prevented serious problems with typhus, a louse-borne disease associated with poor sanitation. Waste products, including urine for later use in tanning and waste to be recycled as fertilizer, were disposed of at a distance from the dwellings. Cotton and linen underwear for brothers (drawers) and sisters ("shimmies") were plentiful and frequently washed.¹⁷ By contrast, in much of urban America at the time, wastes from tenements and draft animals accumulated in street gutters faster even than the herds of swine that provided the only sanitation services that could dispose of them. A New England physician supposed that not one in five of his patients bathed even once a year. Even in small town and rural America, sanitary conditions varied widely.¹⁸

No Shakers died of cholera at the three villages with cause of death records, and in fact the 1832 nationwide cholera epidemic seems to have passed over other Shaker villages. In an entry dated 20 June 1832, a New Lebanon journalist noted the outbreak of the cholera in Montreal, news of which arrived in nearby Albany on Friday 15 June, and by the next day was common knowledge in New York City. He further recorded that Albany had suffered 250 cholera deaths in July alone and that the Shakers at Watervliet had accepted twenty refugees fleeing there from Albany, but mentioned not one case of cholera at either New Lebanon or Watervliet. Even though New York was the hardest hit state in the Union, as the Hudson

17. Charles F. Wingate, "Shaker Sanitation," *The Plumber and Sanitary Engineer* 3 (1880), p. 397; Edward R. Horgan, *The Shaker Holy Land: A Community Portrait* (Harvard: Harvard Common Press, 1987), p. 123; Beverly Gordon, *Shaker Textile Arts* (Hanover: University Press of New England, 1980), pp. 152-153, 184, 194.

18. James H. Cassedy, *Medicine in America: A Short History* (Baltimore: Johns Hopkins University Press, 1991), pp. 50-58. See also Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago: University of Chicago Press, 1962).

Table 5
A partial list of epidemics cited in Shaker records

<i>Date</i>	<i>Disease</i>	<i>Location</i>	<i>Comment</i>
May 1983	Fever	Enfield, Conn.	
Winter 1813-1814	"Cold Plague" (influenza?)	South Union	"many young people destroyed"
Spring 1813	"spotted fever" or "cold plague"	New Lebanon	15 deaths
Fall 1815	"severe sickness"	South Union	"hooping coughs, chills, lingering fevers"; at least 50 cases, 16 dead
1816	"Great Sickness"	Shirley	"famine year"
December 1820	influenza, "canker in the throat"	Harvard	20 young women affected
March 1826	measles	Enfield, N.H.	33 cases
March 1830	"brake bone fever" (dengue fever?)	Shirley	two-thirds of members in two of three families affected
December 1834	influenza	Harvard	"about everyone is sick"
March 1835	cholera	Harvard	at least 10 cases, 1 death at North Family
Spring 1836	mumps	Harvard	18 cases
February 1837	measles	New Lebanon	1 death
March 1837	measles, influenza, lung fever	Shirley	one-third of Church Family affected, several near death
March 1843	influenza	Harvard	
May 1843	scarlet fever	Harvard	
March 1850	influenza	North Union	"an uncommon time of sickness", 2 deaths
November 1851	fever	Enfield, Conn.	
May 1853	measles	Enfield, Conn.	
Winter 1859-1860	putrid sore throat	Enfield, Conn.	one Shaker death, "many" nearby deaths

Sources: Shaker manuscripts. See text.

River and Erie Canal acted as conduits of the disease, journals and letters written at the other two New York communities of Watervliet and Sodus Bay are quiet on the topic. Such memories likely encouraged Elder Frederick Evans to claim in 1874 that "the cholera has never yet touched a Shaker village." Actually, in addition to a spring 1835 outbreak at the Harvard North Family, the physicians' journal there cites four other cases of cholera. But overall, the toll of cholera on Shaker communities was relatively low.¹⁹

Data on chronic disease suggests that the Shaker record is reliable. Symptoms of congestive heart failure, if untreated, include the gathering of water in various parts of the body visible on the outside, for example, around the ankles. This water (Greek: *hydrops*) gave the condition the name by which it was formerly known, dropsy. Dropsy is helpful in making a quantitative check on the reliability of Shaker cause of death records, because standards for its diagnosis were both easy to apply and consistent over time. Proportions of deaths in the United States attributed to dropsy or congestive heart failure have remained in the two to five percent range from the early eighteenth century to the present time. For the Shakers, between 1785 and 1820 when only data from Tyringham and Enfield, Connecticut, are available, the proportion of Shaker deaths attributed to dropsy was 4.1 percent of 98 deaths. In the entire period covered by the three Obituaries, 3.7 percent of the 507 deaths was attributed to dropsy. In a recent study of Canterbury, the proportion was 4.6 percent of 304 deaths. That the proportion of Shaker deaths due to dropsy falls within the "normal" range provides some reassurance that the data are reliable.²⁰

Some disease problems followed from particular Shaker practices or the realities of communal life. In the late 1830s, a minority of Shakers in several Eastern communities adopted the Graham diet as promoted by Sylvester Graham of cracker fame. At New Lebanon and Shirley in the spring of 1837, an outbreak of measles was followed by complications including "severe dysentery" and "continual puking." One child died and several were reported to be near death ("at death's door"). Severe complications and death among children following measles is consistent with nutritional deprivation. In this case, the Graham diet may have played a role, as some Shakers went beyond its abstinence of meat to give up cheese as well and to

19. Rosenberg, *The Cholera Years*, p. 21; "Domestic journal of important occurrences," WRHS V:B-60; Nordhoff, *Communitistic Societies*, p. 160.

20. J. Worth Estes, *Hall Jackson and the Purple Foxglove: Medical Practice and Research in Revolutionary America 1760-1820* (Hanover: University Press of New England), p. 143; Borges, "Canterbury Shakers", p. 223.

Table 6
Causes of death at three Shaker communities

<i>Cause</i>	<i>Number</i>	<i>Percent of All Deaths</i>	
Accident	8	1.6	
Apoplexy or fits	14	2.8	
Asthma	5	1.0	
Bilious colic	2	0.4	
Camp distemper	1	0.2	
Cancer, unspecified	16	3.2	
Cancer on neck		1	0.2
Cancer under lip		1	0.2
Internal cancer		1	0.2
Stone cancer		1	0.2
Chronic inflammation	1	0.2	
Congestion	1	0.2	
Congestion of brain	2	0.4	
Consumption	124	24.5	
Quick consumption		4	0.8
Consumption of the liver		1	0.2
Bronchial consumption		1	0.2
Dropsical consumption		2	0.4
Croup	1	0.2	
Diabetes	2	0.4	
Dropsy	19	3.7	
Swelled legs		1	0.2
Dysentary or putrid dysentary	7	1.4	
Dyspepsy	5	1.0	
Erysipelas	3	0.6	
Fever, unspecified	1	0.7	
bilious fever		1	0.2
brain fever		1	0.2
epidemic fever		1	0.2
malignant fever		1	0.2
putrid fever		1	0.2
Gravel	1	0.2	
Heart disease	10	2.0	
Infection in knee (tetanus?)	1	0.2	
Influenza epidemic	2	0.4	
Insanity	3	0.6	
Internal weakness	1	0.7	
Kidney complaint	2	1.4	
Jaundice		2	1.4
Kidney inflammation		3	2.2
Lightning	1	0.2	

Lung fever or pleurisy	17	3.4
Bronchitis	2	0.4
Lung congestion	2	0.4
Old age	21	4.1
Palsy or numb palsy	7	1.4
Paralysis	8	1.6
Poison	1	0.2
Rumatic complaint	1	0.2
Rupture or hernia	2	0.4
Scrofula	3	0.6
Spinal disease	2	0.4
Strange	1	0.2
Stricture or inflammation of bowels	3	0.6
Sudden	5	1.0
Sudden cold	1	0.2
Suicide	1	0.2
Tumor	1	0.2
20 year cough	1	0.2
Typhoid, fever or pneumonia	3	0.6
Typhus fever	2	0.4
Ulcer	2	0.4
Complicated	4	0.8
No attribution or unknown	141	27.8
Total deaths recorded	507	

Note: Totals sum to greater than the number of deaths recorded in the manuscript due to multiple causes for some deaths.

water down milk by half. The combination would have severely reduced protein intake. The practice of withholding meat from children was maintained even after the Graham mania passed. The lack of protein in the Shaker diet is made more plausible by New Lebanon stature records which show that Shakers there were unusually short. Short stature is one sign of insufficient protein intake in youth.²¹

Besides measles, Shaker records include many references to outbreaks of other infectious diseases (Table 5). Even in communities that worked hard at maintaining clean grounds and living quarters, control of various "cold plagues" and "spotted fevers" was impossible once outbreaks began. Some cases were part of epidemics advancing through the world, such as what may have been diphtheria

21. WRHS IV:A-37, V:B-41, IV:A-58; Robert G. Petersdorf, et al. *Harrison's Principles of Internal Medicine*, 10th edition, (New York: McGraw-Hill, 1983), p. 1114; Brewer, *Shaker Communities*, p. 108; J.E. Murray, "Stature among Members of a Nineteenth Century American Shaker Commune," *Annals of Human Biology*, forthcoming.

("putrid sore throat") at Enfield, Connecticut, in the winter of 1859-1860. The 1812-1813 fever "plagues" were virtually Society-wide, with reports of widespread illness at New Lebanon; Harvard; Enfield, Connecticut; Pleasant Hill; and Union Village. The "cold plague" at South Union the following winter was perhaps related to the cold plague epidemic observed by Daniel Drake at that time in and around Cincinnati.²² Other cases, such as the mumps epidemic at Harvard in the spring of 1836, were little more than an annoyance and simply resulted in ill Believers being sent to the Physician's Office for a good purging. Occasionally, communities were overwhelmed as the sick outnumbered the well, who could barely keep up with the care required by affected Believers. Examples include "brake bone fever" at Shirley in March 1830 and the influenza outbreak at North Union in March 1850. Shaker villages that provided the setting for individual striving for Gospel perfection maintained a disease environment far from perfectly healthy.²³

IV. The problem of consumption

A noteworthy feature of Table 6 is the large proportion, nearly a quarter, of Shaker deaths that were attributed to consumption. By mid-century the proportion of deaths elsewhere in America that were due to consumption was between a fourth and a seventh.²⁴ By this crude measure, the Shakers were at the upper end of the range of consumption mortality in America.

Consumption is a now archaic term which referred to pulmonary tuberculosis. "Consumption" in former times was also used as a catchall term denoting chronic wasting disease, which would result in *more* deaths having been attributed to consumption than were

22. Daniel Drake, "Natural and Statistical View, or Picture of Cincinnati and the Miami Country," (1815), reprinted in Henry D. Shapiro and Zane L. Miller (eds.), *Physician to the West: Selected Writings of Daniel Drake on Science and Society* (Lexington: University Press of Kentucky 1970), p. 109.

23. Letter from Enfield, 1 January 1860, WRHS IV:A-10; Letter from Benjamin S. Youngs to Mother [Lucy Wright], 2 May 1813, WRHS IV:A-60; Letter from New Lebanon Ministry to Union Village Ministry, 20 February 1813, WRHS IV:A-32; "Physician's journal," WRHS IV:A-41; Letter from Harvard Ministry 25 March 1830, WRHS IV:A-33; North Union journal, 24 March 1850, WRHS V:B-178.

24. Lemuel Shattuck, *Report of the Sanitary Commission of Massachusetts 1850* (Boston: Dutton and Wentworth, 1850; reprint, Cambridge: Harvard University Press, 1948), p. 94. A more detailed presentation of this topic is John E. Murray, "The White Plague in Utopia: Tuberculosis in Nineteenth Century Shaker Communes," *Bulletin of the History of Medicine*, forthcoming.

actually due to tuberculosis. At the same time, substantial social stigma was attached to its sufferers, so that sometimes deaths due to tuberculosis were recorded as caused by some other disease at the request of surviving family members. Thus, the number of deaths recorded as due to consumption might be *less* than the number actually caused by tuberculosis. The symptoms of the disease were relatively easily identifiable, so that it is generally assumed now that the correlation between "consumption" and tuberculosis is quite high. Comparing the death rate due to consumption among Shakers and elsewhere in America (Figure 1) shows that the Shakers indeed suffered from greater consumption mortality than did the parts of the United States where such records were kept, namely Massachusetts and the cities of New York, Boston, and Philadelphia. Since consumption was and remains a notoriously urban disease, it is important to note that the Shakers suffered more from consumption

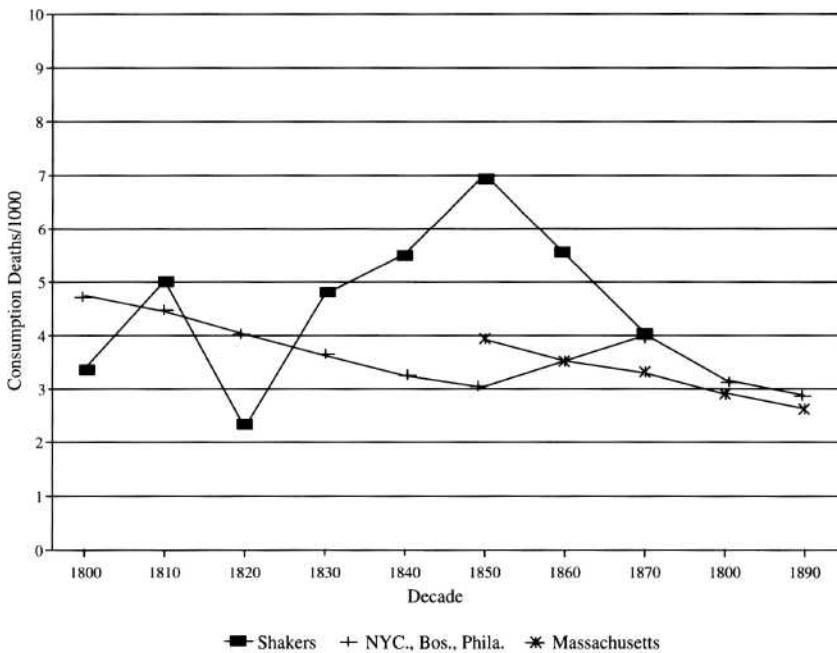


Figure 1. Consumption death rates at three Shaker communities; in New York City, Boston, and Philadelphia; and in Massachusetts.

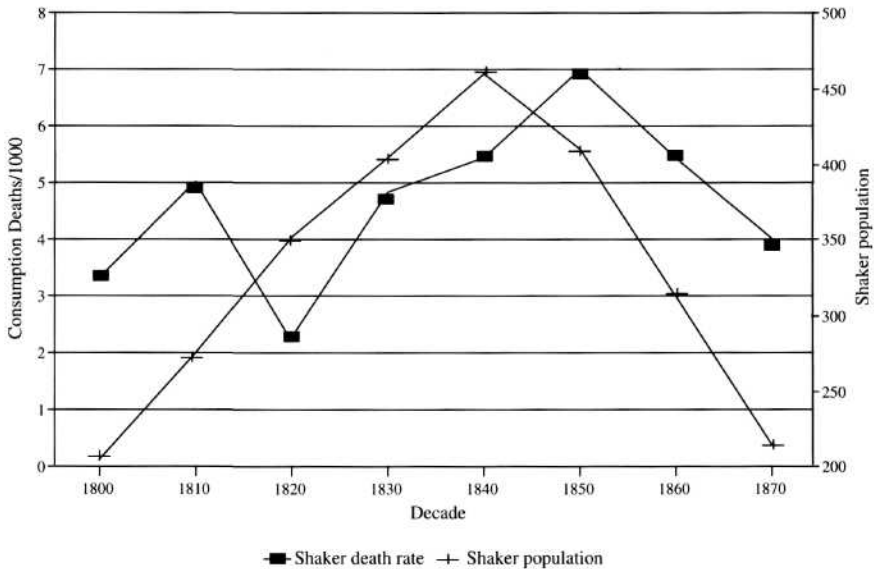


Figure 2. Consumption death rates and population at three Shaker communities.

than did Americans who lived in urban areas and were thought to be the most at risk of the disease.²⁵

The cause of the high rates of nineteenth century consumption mortality and of their decline is a prominent open question in the history of medicine literature. One school of thought has proposed that changes in nutrition and general living standards were the driving force in the mortality decline. Other scholars suggest that the development of medical treatments for the disease were responsible. In the case of the Shakers, the role of nutrition seems to have been less important. Except for the Graham episode, which was of too short a duration to affect a long term phenomenon such as tuberculosis prevalence, Shakers seem to have eaten fairly well.²⁶ The decline in Shaker tuberculosis mortality occurred long before the develop-

25. John Duffy, *A History of Public Health in New York City 1625-1866* (New York: Russell Sage Foundation 1968), p. 258; Rene Dubos and Jean Dubos, *The White Plague: Tuberculosis, Man and Society* (Boston: Little, Brown, 1952; reprint, New Brunswick: Rutgers University Press, 1987), pp. 229 ff.

26. Isaac N. Youngs, "A Concise View of the Church of God . . ." manuscript, The Winterthur Library: The Edward Deming Andrews Memorial Shaker Collection No. 861, pp. 289-300.

ment of effective medical treatment for the disease, which may lead one to question the efficacy of medicine in the national tuberculosis mortality decline.

A better explanation for the Shaker consumption mortality decline is the role of crowding. Since the tubercle bacillus is spread aerially and usually in small numbers from an infected person, long term exposure to an infected person is necessary for transmission of the bacillus. Crowded living conditions thus increased incidence of the disease, which is why consumption was such a problem in the densely populated and filthy cities of the past. Figure 2 suggests that crowding likely played an important role in Shaker consumption. The curves represent population and consumption death rates in the three communities of North Union, Tyringham, and Enfield, Connecticut. Starting in 1820, the Shaker consumption death rate lags just about a decade behind the Shaker population, which is consistent with an explanation of consumption mortality that emphasizes the role of crowding.

Anecdotal evidence supports the crowding conjecture. The assignment of sleeping rooms in each Family's Dwelling was sometimes recorded in the Family journal. One example was the Great House of the New Lebanon Church Family, which opened on 5 September 1832. Its sixteen sleeping rooms were initially assigned to eighty-one Shakers. Since Elders, Eldresses, Deacons and Deaconesses were given rooms with only one roommate, fifty of the residents slept at least six to a room, and thirty-two slept seven or more to a room. Such crowding occurred on a long-term basis: the median duration of membership for an adult Church Family member of either sex at this time was over forty years. Although questions of exposure to consumptive Shakers at New Lebanon cannot be addressed, at North Union the estimated duration of membership for residents who died of consumption was eleven years.²⁷ Residents of Shaker communities were sufficiently exposed to the tubercle bacillus to be at unusual risk of infection.

As elsewhere in America, consumption did not strike the Shaker population uniformly. In general, women and young adults died of the disease at higher rates than men and other age groups. Among the Shakers, sex and age differentials were even higher than elsewhere. At mid-century, 15- to 29-year-old Shakers died of consumption at a rate twice that in Massachusetts (Table 7). It may be that

27. "Domestic journal", 5 September 1832, WRHS V:B-60; Murray, "Communal Incentives".

Table 7
*Death rates and age adjusted death rates per 100 person years,
all ages for consumption only*

<i>Adjusted for Massachusetts undercount</i>			
	Massachusetts	Three Shaker Communities	
<i>Years</i>	<i>Death Rate</i>	<i>Death Rate</i>	<i>SMR</i>
1852-1858	4.5	7.9	1.42
1856-1863	4.1	6.8	1.33
1865-1873	3.5	5.5	1.34

<i>Death rates per WOO person years, for consumption only, 15-29 year olds</i>		
	Massachusetts	Three Shaker Communities
<i>Years</i>	<i>Death Rate</i>	<i>Death Rate</i>
1852-1858	5.2	8.9
1856-1863	4.7	10.2
1865-1873	4.5	6.8

The three Shaker communities are North Union, Ohio; Tyringham, Massachusetts; and Enfield, Connecticut. The CDR is deaths per 1000 person-years. The SMR, or Standardized Mortality Ratio, is the ratio of actual Shaker consumption deaths to the number of Shaker deaths expected after adjusting for the Shaker age group structure. The age adjustment was made indirectly, by imposing the Massachusetts demographic structure on the Shaker age-specific death rates. The Massachusetts data are published in the annual Reports of the Secretary of the Commonwealth. They have been corrected for undercounting as described in Vinovskis (1981) and Meeker (1972).

the higher death rate for young Shakers was related to dietary deficiencies mentioned above. The difficulties of propagating a celibate Society by adopting and socializing young people were only compounded by these high consumption death rates.

Sexual differences in consumption mortality and other measures provide insight into Shaker life. The ratio of female to male consumption death rates in the three Shaker communities covered averaged 1.9 from 1790 to 1870, while in Massachusetts this ratio was 1.5 in the 1850s and never exceeded 1.3 during the rest of the century (see also Table 8). That women suffered more from this chronic, withering disease is consistent with their stature record, in which women were relatively much shorter than men. In a comparison of the average height of Shaker Brethren and Sisters to modern height standards, using samples taken by Brother Isaac N. Youngs, the average Brother

Table 8
*Death rates due to consumption, per 1000 person-years
 and ratio of female to male consumption deaths
 for Shaker communities of
 Enfield, Connecticut; North Union, Ohio; Tyringham, Massachusetts*

<i>Decade</i>	<i>Percentage of deaths attributed to some cause</i>	<i>AH members</i>	<i>15-29 year old members</i>
1790s	45 percent	11.3	0.0
1800s	89 percent	3.4	0.0
1810s	54 percent	5.0	11.6
1820s	50 percent	2.3	2.8
1830s	67 percent	4.6	8.5
1840s	67 percent	5.5	9.5
1850s	78 percent	6.9	9.7
1860s	70 percent	5.5	5.1
1870s	83 percent	3.9	4.2
Female: male ratio among consumption deaths		1.81	2.54

was found to be shorter than three-fourths of modern men, while the average Sister was shorter than eight-ninths of modern women.²⁸

Brethren fared better than Sisters by all available measures of health. In terms of stature and consumption mortality, Sisters fared worse than both Shaker Brethren and contemporary Worldly women. In terms of longevity, Sisters did not live as long as Brethren, but longer than other American women. It may seem that the current feminist revisionism of Shaker sexual relations is substantially correct: despite a doctrine of Shaker sexual equality, in practice Brethren proved to be slightly more equal. However, conditions affecting physical quality of life in Shaker communities were not likely the result of conscious decisions made by community leaders. Elsewhere, I attribute sexual differences in health within Shaker communities to different experiences of crowding. While all Shakers (at least until mid-century) slept, ate, and prayed with many other Shakers, men tended to work alone or outdoors and women tended to work in groups and indoors. This constant crowding for women would account for high consumption mortality, which in turn would account for stature differences. The point is that the better health of Brethren than Sisters was not the result of conscious discrimination as much as it was the simple division of labor into men's jobs and

28. Abbott, "Vital Statistics"; Murray, "Stature".

women's jobs. Men's jobs happened to be solitary or outdoors, and women's social and indoors.²⁹

Contemporary explanations consumption mortality differences by sex in America simply did not apply to Shaker Sisters. Some medical writers associated elevated women's consumption death rates with their "innate feminine weakness." Other proposed sources of women's vulnerability were hardly applicable to Shaker sisters, whose production records indicate that they clearly did not indulge in the "cult of female invalidism." Nor as celibates were they subject to hormonal changes that accompany pregnancy and childbirth, which are now thought to stimulate development of tuberculous symptoms. On the contrary, as the century proceeded and the number of Brethren declined, their own businesses prospered and Shaker Sisters attained greater responsibilities in community life.³⁰

While long-term crowding ensured widespread exposure and infection of Shakers, the care of consumptives led to high mortality from the disease. The earliest Shaker approach to care of the sick began with faith healing, which they claimed was effective in some cases of consumption. After extensive fever epidemics in 1813 in Eastern and Western communities, consultations with regular physicians were permitted. At a time when American medical practices were becoming ever more diverse, the Shakers eagerly explored the offerings of the various medical "sects". In the 1820s, Thomsonian medical practices became popular among the Shakers just as they were finding a receptive audience elsewhere in the Northeast. This irregular school of medicine emphasized the herbal remedies for which the Shakers had developed a large pharmaceutical business. Shaker consumptives were regularly given home-grown lobelia and peppers which acted as emetics to expel the consumption. One young Kentucky Shaker, Brother Milton Robinson, convinced his Elders to allow him to try another popular therapy, the sea cure. After an arduous flatboat journey to New Orleans in 1831, the therapeutic voyage to Philadelphia left him exhausted. He was brought to New Lebanon where he died within months. Later in antebellum times, Shakers resorted to another kind of irregular medicine, hydrophathy, at special spas. The gentle nature of the water-cure, as it was

29. Murray, "White Plague". A somewhat similar study of sexual comparative health in Europe is Richard Wall, "Inferring Differential Neglect of Females from Mortality Data," *Annales de Demographie Historique* (1981), pp. 119-139.

30. Barbara Ehrenreich and Deirdre English, *Complaints and Disorders: The Sexual Politics of Sickness* (New York: The Feminist Press at the City University, 1973), pp. 17-32; Karen K. Nickless and Pamela J. Nickless, "Trustees, Deacons, and Deaconesses: The Temporal Role of Shaker Sisters, 1820-1890," *Communal Societies* 7 (1987), pp. 16-24.

also known, won approval in the eyes of at least one prominent Shaker, James S. Prescott at North Union, who disliked the sometimes violent results of the Thomsonian emetics.³¹

V. Conclusions

Shaker ideology itself seems to have offered little comfort to the consumptive. Although the best therapy for a victim of tuberculosis was to eat well and rest, the Shaker Way was to work. Physicians' journals reveal no consumptives who were given long-term rest; in fact, they describe consumptives who quarried stone within months of their deaths (Lewis Bevan at North Union) and who worked as physicians' aides immediately after attacks of the disease (Fidelia Grovenor at Harvard). Rather, in writings somewhat reminiscent of Cotton Mather, Shakers wrote that illness was a sign of one's troubled relation with God.³² Late in the nineteenth century, Paul Tyner claimed in *The Manifesto* that "all the ills that flesh is heir to . . . disease and death itself, may be traced to selfishness and lust." Conversely, if the Shakers did attain the perfection for which they strived, then surely God would protect them from illness. Memory of how the 1832 cholera epidemic had left Shakerdom unharmed led an Ohio Elder, Matthew Houston, to "wonder if right faithfull [sic] Believers can be overtaken by such plagues." Ultimately, said Elder Frederick Evans, the most prominent late nineteenth-century Shaker, those who fell ill were themselves to blame:

We look for a testimony against disease, and even now I hold that no man who lives as we do has a right to be ill before he is sixty; if he suffer from disease before that, he is in fault.

The Shaker attitude towards disease combined treatment consistent with prevailing Shaker beliefs with some questioning of just why the ill Believer was sick.³³

31. Cassedy, *Medicine in America*, pp. 21-66; Anna White and Leila S. Taylor, *Shakerism: Its Meaning and Its Message* (Columbus: Press of Fred. J. Heer, 1904), p. 353; "Physician's journal" WRHS V:B-41; "Domestic journal" WRHS V:B-60, Diary of Milton Robinson, Library of Congress Shaker Collection item no. 37; "Copy of Discourse delivered on the death of Susannah Sawyer by James S. Prescott," WRHS VII:B-219.

32. Richard Harrison Shryock, *Medicine and Society in America 1660-1860* (New York: New York University Press 1960), p. 55.

33. "Physician's journal," WRHS V:B-41, "Account of the rise and progress of the Church at North Union," June 1826, WRHS V:B-177; Robley Edward Whitson, editor, *The Shakers: Two Centuries of Spiritual Reflection* (New York: Paulist Press), p. 137; Letter from Matthew Houston to Seth Y. Wells, 10 August 1832, WRHS IV:A-51 (see also letter from Pleasant Hill ministry to New Lebanon, 25 March 1833, WRHS IV:A-61); Nordhoff, op cit., p. 160.

44 COMMUNAL SOCIETIES

It remains a puzzle for our acquisitive times why people would be drawn to communalism, with no property of one's own and no traditional family life. Those who became Shakers did not find a life without the health problems of the World. They suffered and died as other Americans did, but in their own patterns that help shed light on a different aspect of the Shaker experience.