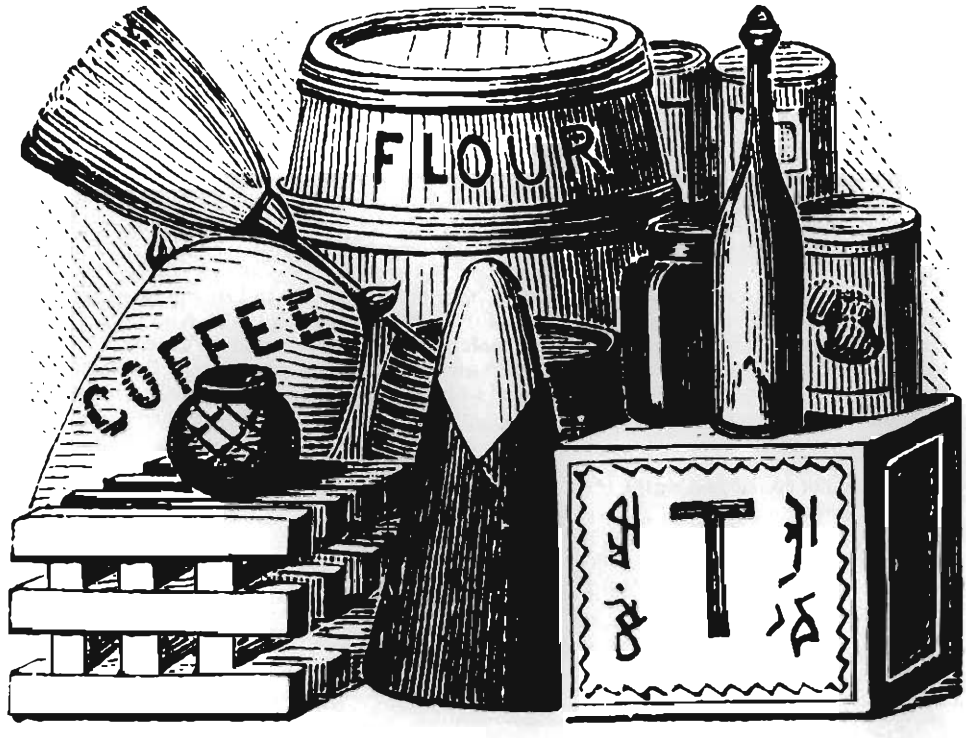

Despite its high visibility in every day Mormon life, the Word of Wisdom has received remarkably little attention in scholarly journals. Indeed, the last—and only—notable published work to date on the subject came over twenty years ago in Leonard Arrington's excellent "An Economic Interpretation of the Word of Wisdom" (Volume 1 of BYU Studies*). Last fall, Brigham Young University's Sesquicentennial Symposium, "A Mosaic of Mormon Culture," included two thoughtful studies which shed new light on many popular assumptions about the Word of Wisdom. They examine the medical context in which the Mormon health code was received and its establishment many decades later as a binding requirement for good standing in the Church. A third essay recently received provides a natural and informative transition between these studies as it examines the doctrinal status of the Word of Wisdom in the latter half of the nineteenth century.*

THE WORD OF WISDOM IN EARLY NINETEENTH-CENTURY PERSPECTIVE

LESTER E. BUSH, JR.

> "[W]ine or strong drink . . . is not good . . . [S]trong drinks are not for the belly, but for the washing of your bodies. . . . [T]obacco is not for the body, neither for the belly, and is not good for man, but is an herb for bruises and all sick cattle . . . [H]ot drinks are not for the body or belly. . . . [A]ll wholesome herbs [are] for the constitution, nature, and use of man—Every herb in the season thereof, and every fruit in the season thereof . . . [F]lesh also of beasts and of the fowls . . . [w]hich nevertheless are to be used sparingly; and . . . only in times of winter, or of cold, or famine. . . .
>
> D&C 89:5–13
> February, 1833

THE SUCCESS OF MORMONISM'S "WORD OF WISDOM," especially its prohibition of tobacco—in promoting Mormon health is now widely acknowledged. Mormons have shown that they experience what medical science would predict from their lifestyle: a longevity several years greater than non-Mormons, with much less cancer and heart disease. Indeed, in a number of areas Mormons do even better than expected,[1] and often take pleasure in noting that scientific "expectations" really didn't measure up to church teachings until recently. As one Mormon physician has written, "in 1833 when the Prophet Joseph Smith received the revelation that tobacco 'is not good for man' (D&C 89:8), there was virtually no scientific evidence to support this view. Since then [in reality, since about 1950], many reports have appeared that have established a strong case against smoking."[2] In point of fact, however, one looks in vain for any in-depth discussion of the nineteenth-century context in which the Word of Wisdom was announced and applied. How *did* "medical science"

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view the Word of Wisdom a century and a half ago? (I should say, how "might" it have viewed it, because the nineteenth-century medical world actually took little notice of the Mormons, and seemingly no notice at all of their health code.[3])

The task is somewhat complicated by the absence of a true counterpart to the scientific medical establishment we know today. "Scientific medicine" itself is largely a product of the last years of the nineteenth century. (Thus it virtually is by definition that "no scientific evidence" existed against smoking in 1833. In the modern sense, no scientific evidence existed on any medical subject.) Several health or medical "systems" were available to early nineteenth-century Americans, none of which seems to have won the allegiance of a majority of the population. Botanic or herbal medicine was more popular at this time than at any other in American history and was preferred by many leading Mormons. Homeopathic medicine, an intriguing approach which amounted to little more than the dispensing of sugar pills and colored water, was just gaining a foothold. Self-help or do-it-yourself home remedy and recipe books accounted for much of the medical care, just as they do today, with the important difference that non-physician health reformers were then very active in promoting certain philosophies of home health care.[4]

The medical practitioners most analagous to twentieth-century physicians were the "regular" or "orthodox" phsicians, those actually trained in medical schools (or by private tutors) and granted Doctor of Medicine (M.D.) degrees. Lacking any standardization of qualfications, even these "credentialled" doctors were a very heterogeneous group, overlapping considerably with the "sectarians."[5] Despite this diversity, the elite among the regular physicians, often but not always professors at major medical schools, unquestionably constituted the most distinguished and influential sub-group of all. They were the medical establishment of their day, and from this line of highly educated medical men ultimately emerged modern scientific medicine.[6] It is to the views of this group that we must turn in considering the "most informed" opinion of the day.

To judge from the authors of the most influential texts of the day—such as those selected by Robley Dunglison for a popular bibliography in *The Medical Student* (1837) or the initial (1848) American Medical Association bibliography of significant medical works—the leading physicians of Joseph Smith's day would have found a little to criticize but much more to commend in the Mormon health code.[7] Indeed, while historians have generally stressed the similarity of the Word of Wisdom to some of the precepts of botanic doctors, or—even more so—the radical health reformers of the day,[8] as good if not a better match can be made to the mainstream views of orthodox medicine.

Early nineteenth-century medical orthodoxy held that most of what we now know to be different diseases were manifestations of one basic underlying condition—merely different "symptoms," as it were, of a single disease state. This underlying condition, to oversimplify, was an imbalance in the vital nervous energy believed to determine the health of an individual. An excess of this energy could be brought about by over-stimulation from a variety of sources, and this led to something vaguely analagous to what we

now call hypertension. Among the common manifestations of this internal tension were "fevers," "inflammations" (especially of the stomach) or simple "dyspepsia." Depletion of the vital nervous energy led, not surprisingly, to debility. The practical implications of this perspective are not hard to guess. Acutely ill individuals—especially if fever or signs of inflammation were present—needed a reduction in stimulation through dietary adjustment and such relaxing or energy dissipating measures as massive blood-letting, purging with large doses of mercury, and blistering—all to relieve excessive internal pressures. Conversely, those in a debilitated state needed dietary or medicinal stimulation.[9]

Challenging this traditional view was a subtly different notion originally advanced by the dean of American physicians, Benjamin Rush. Late in the eighteenth century Rush concluded that over-stimulation was in fact the only significant cause of disease. Debility was merely the final stages of an unanswered, co-existing over-stimulation. Many, but not all of America's leading physicians eventually subscribed to this notion, and accordingly treated *all* patients with the theoretically "de-stimulating" depleting measures which became the hallmark of the so-called "heroic" orthodox practice. (The physicians termed their measures heroic; critics thought the term applied more appropriately to the patient.)

The implication of both these orthodox perspectives went beyond treatment, for it was reasonably enough assumed that the ill-advised consumption of stimulants by even those in good health could lead to disease. A full appreciation of this point is essential to any modern understanding of how the LDS health code would initially have been understood—by physicians or by Mormons. Immoderate use of even mildly stimulating foods and drinks was likely to result in symptoms ranging from dyspepsia to nervous debility, and this was especially so in the many individuals of "delicate," "nervous" or "sanguine" temperament. Young children, pregnant women and those already ill with fevers or other inflammations were particularly at risk, as were those whose jobs were largely sedentary, such as students. The more powerful stimulants, unless prescribed for purely medicinal purposes, posed substantial risks to everyone who consumed them. On these general points, nearly all orthodox physicians were in agreement. They differed only on the *degree* of stimulation associated with such items as ardent spirits, wine, beer, etc., coffee, tea, meat, mustard, pepper and other spices. Although this debate had been going on for many decades, both popular and medical discussion on this subject crested in the second quarter of the nineteenth century, spurred in part by such crises as the world cholera pandemic which swept America in 1832–33, and the not unrelated health reform movements of the day.[10]

By 1833 when the Word of Wisdom was announced, at least one element of the debate was largely resolved. Most leading physicians could warmly applaud the assertion that "strong drink" was "not for the belly." Distilled or ardent spirits, despite their heavy and widespread consumption in the early decades of the century, were regarded by the medical elite as the most dangerous stimulant in general use. In the words of Dr. J. A. Paris's *A Treatise on Diet . . .* (1828), "the act of extracting alcoholic liquors by distillation from vinous liquors, must be regarded as the greatest curse ever inflicted upon human nature." Such "spirits," asserted the eminent and representative Dr.

Daniel Drake in 1831, were "a poison" which "should be proscribed, outlawed and banished forever, from the catalogue of our daily drinks." "As an article of daily and dietetic use," admonished the authoritative *Dispensatory of the United States* (1833), "alcoholic liquors produce the most deplorable consequences. Besides the moral degradation which they cause, their habitual use gives rise to dyspepsia, hypochondriasis, visceral obstructions, dropsy, paralysis, and not unfrequently mania."[11]

Whether a similar, though perhaps less vigorous indictment should be extended to wine—as the Word of Wisdom suggests—was a subject of less unanimity. Fermented (as distinguished from distilled) drinks such as cider, beer (especially "small beer" which contained only about 1% alcohol), malt liquor and wine long had been recommended by physicians as a benign alternative to hard liquor. While such drinks were "required" by "few constitutions"—in Drake's view—many physicians believed they could be imbibed freely without risk; some even believed that wine, at least, contained no alcohol. In the 1820s, however, the sentiment grew—notably among the Philadelphia medical establishment then dominant in American medicine—that alcohol in any form posed a real health threat to those of vulnerable age, health or temperament, or to anyone who consumed it intemperately (i.e., it was dangerous to a large segment of society). The excessive use of fermented drinks, wrote the distinguished Dr. Samuel Jackson in his popular text, *The Principles of Medicine* (1832),

> terminates in inflammations, either acute or chronic, of the stomach, duodenum, and liver, with the cancerous and other degenerations of these organs. Inflammation of the heart and vessels; the enlargement, and other organic derangement of the one; aneurisms, ossification, &c. of the other, are common results of habitual intemperance. In the brain, its consequences are the production of apoplexies, of convulsions, of mental derangement, and every form of nervous disorder.

"Even in moderation," continued Dr. Jackson,

> the habitual use of fermented drinks is not tolerated by the sanguine and the nervous. They are unnecessary, and should not be employed by those leading sedentary lives; by those in the vigour of life; when the temperature is moderate; and, when the food is sufficiently stimulating for its own digestion. . . .[12]

It was a short additional step from advocacy of temperance (i.e, moderation) to a call for complete abstinence. A decision to "be consistent," in the

words of an 1831 editorial in the Philadelphia-based *Journal of Health,* [13] and adopt a uniformly anti-alcohol stance was taken by an influential minority of the medical profession. Most physicians in New York state, in fact, were reportedly teetotalers by 1839. While the majority of leading American medical authorities did not move to this position, nearly all did warn that the use of fermented drinks by many members of society—those more vulnerable to "stimulation"—was "not good." Overall, therefore, there would have been considerable "medical" support for this facet of the Word of Wisdom.[14]

The broader temperance movement of these years, which went well beyond the notions of the orthodox medical community is outside the scope of this article, but it is relevant to recall that from a few thousand advocates late in the 1820s, the American Temperance Society had grown to well over a million members by 1834. Estimated per capita alcohol consumption plummeted during this decade to less than a third its previous level. While the leaders of the movement were most often clergymen and non-physicians, it is notable that the support given by orthodox medical authorities (by demonstrating the health risks) also was in many ways matched (on similar theoretical grounds) by the condemnations of alcohol issued by influential sectarian medical practitioners and do-it-yourself authorities.[15] John Wesley's *Primitive Physic* and William Buchan's *Domestic Medicine,* while products of the previous century, still dominated self-help systems in America, and both vigorously condemned strong drinks, sanctioning only "small beer" or dilute wine. Samuel Thompson, father of the contemporary botanic school and indirect mentor to most leading Mormon physicians, was equally convinced that "ardent spirits" was a "slow poison." And Wooster Beach, a widely read eclectic whose works later were advertised glowingly in Mormon publications, held to this same view. Ultimately Thomsonian journals came to devote as much space to the dangers of alcohol and tobacco as they did to endorsing their own system.[16]

Before leaving this aspect of the Word of Wisdom, it is also important to note that physicians during this period of reformist agitation continued to distinguish between the legitimate medicinal use of alcohol—as a tonic or restorative—and its social or dietetic use by the general public. As with the ostensibly teetotaling Mormons,[17] physicians opposed to the general use of alcohol often commended it in a "medical" context. Thus Andrew Combe, in his *The Physiology of Digestion* (1836), after asserting that the use of wine and "stimulant liquors" was *adverse* [emphasis added] to the continuance of health," goes on to say

> But there are many constitutions so inherently defective in energy, as to derive benefit from a moderate daily allowance of wine; and there are many situations in which even the healthiest derive additional security from its occasional use. If, for example, a healthy person is exposed to unusual and continued exertion in the open air, or to the influence of anxious and depressing watchfulness, a moderate quantity of wine along with his food may become the means of warding off actual disease, and enabling him to bear up uninjured, where without it he would have given way. . . . [18]

Joseph Smith was in obvious agreement when he rejected charges that "some of the brethren had been drinking whiskey in violation of the Word of Wisdom," deciding rather to give them money "to replenish the bottle to stimulate them in the fatigues of their sleepless journey." The same perspective is equally clear in his request, hours before his martyrdom, for wine "to revive us" "for our spirits were dull and heavy."[19]

Thus, while contemporary medicine would have differed with the possible interpretation of the Word of Wisdom that alcohol was therapeutically appropriate *only* "for washing of your bodies," it would have endorsed the more flexible interpretation actually adopted by the Church. Indeed, the Mormons themselves seem to have applied this aspect of the Word of Wisdom in essential conformity to the received medical opinion of the day.

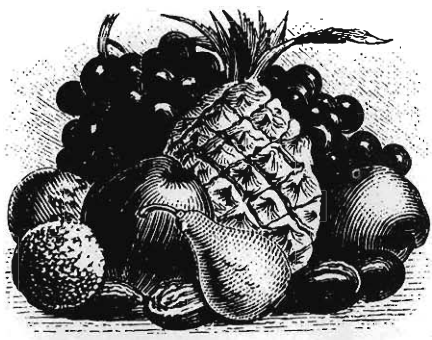
Having broadened their view to encompass controversial stimulants such as the fermented drinks, the more extreme health reformers found it easy and rational to sound grave warnings on other insidious stimulants. Led by such non-physician crusaders as Sylvester Graham (of Graham cracker fame) and the radical Dr. William A. Alcott, and with an occasional distinguished physician in their train, these zealots—for indeed they were—began crusades against the abuse, and more often against *any* use of such stimulants as coffee and tea, all meats, ultimately all condiments and spices—and sex. (Graham also barred white bread and salt.) That such a notion could be popularly acclaimed in the 1830s is as interesting as it is astonishing.[20] It had been anticipated in part in some orthodox medical texts and in the long popular writings of Wesley. In 1830 the perceived role of stimulants in the promotion of masturbation—at the time thought to be a major contributor to poor health and early death—apparently provided much of the Grahamist impulse. Graham also believed marital sex was unsafe if indulged in more often than once a month. He advised married people under age thirty, in ill health, or leading sedentary lives to abstain totally from sex and, seemingly, almost everything else.[21]

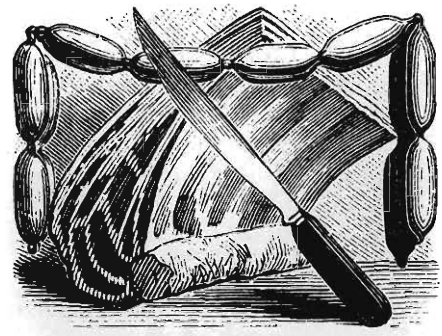
Orthodox authorities agreed with much of the foregoing only to a point. They believed the specified items were at least mildly stimulating, and that most if not all were potentially harmful to *children*. Sharing, as previously noted, in large measure the same theoretical understanding as did the reformers—and many sectarians—orthodox authorities uniformly recommended against what was apparently a rather commonplace practice of giving young children "excessively" stimulating diets, including coffee, tea, tobacco and alcohol. While the perceived risks extended well beyond those relating to sex, as much as a half century later Mormonism's own distinguished Doctors Shipp, in a Series of Private Lectures to the Ladies, still sounded remarkably like Sylvester Graham—and orthodox physicians—when they warned that the consumption of "stimulating foods, meats and condiments, tea and coffee" was a cause of "an untimely condition or premature functional state of the reproductive organs."[22]

Medical orthodoxy thus differed from the reformists not so much qualitatively as quantitatively—on the questions of who was at risk, and to what degree. Many stimulants indicted by Graham simply were not viewed as

causes for serious alarm. Thus Graham, who was initially received by some in the medical establishment as a welcome addition to the general hygienic reform efforts then current, was soon abandoned by regular physicians as a fanatic and charlatan. He and others like him, in the words of Daniel Drake, were "better moralists than physiologists."[23]

Given this context, it is apparent that orthodox medical authorities would have commended the *narrow* (relative to the health reformers) proscriptions set forth in the Word of Wisdom that "hot drinks are not for the body or belly," and that "flesh [is] to be used sparingly . . . only in times of winter, or of cold, or famine." Indeed, the congruence of Mormon and contemporary orthodox views on meat, fruit and vegetables is especially striking.





Meat, which apparently was consumed in vast quantities in those days,[24] was almost universally held to be more "stimulating" than fruits or vegetables. Red meat, in turn, such as beef, mutton and pork, was more stimulating than "white" meats such as fish and chicken. There were differences as well among the fruits and vegetables, beyond such obvious offenders as pepper and mustard; unripe fruits were believed potentially very dangerous. Under the alarming circumstances of the cholera threat of 1832, for example, the Special Medical Council of New York City posted handbills and published in all papers a warning against, among other things, the consumption of "crude vegetables and fruits." As Charles Rosenburg noted in his invaluable study of *The Cholera Years*, "a pineapple or a watermelon" could have been "a death warrant."[25]

While reformers like Graham and Alcott opted to condemn everything from meats through the spicier portions of the plant world—even in the absence of "risk factors" such as predisposing temperaments, illness or sedentary occupation—orthodox medicine normally took a much less sweeping stand. Thus, although all agreed that meat was stimulating, and that there was too much meat in the average diet, some "flesh" under the appropriate circumstances was considered safe and entirely proper. This, to quote Dr. Caleb Ticknor's *The Philosophy of Living* (1836), was most often "in winter, . . . while vegetables are more conducive to health in the summer season . . ."[26] More stimulation was required in the winter, as Dr. Combe explained, particularly for "a hard-working unexcitable laborer." "The system

[needed] to be more braced to resist cold," Edward Hitchcock wrote in *Dyspepsia Forstalled* (1831), "and to endure the more vigorous exercise which is requisite to health. But in spring . . . the food generally, but animal food in particular, should be diminished in quantity. . . ."[27] Combe's "stimulating animal diet" for the hard-working unexcitable laborer, could "prove utterly destructive of health when indulged in during the summer by an inactive and excitable female."[28] Among those who condoned some use of wine or other alcoholic beverages, the same seasonal recommendations were often made. (Some orthodox physicians carried the seasonal recommendations a step further by administering a good purge to assist the body in the spring transition to a lower energy state.)

Contemporary medicine, therefore, could only have applauded the Mormon guidelines on "flesh," indeed would have found this portion of the Word of Wisdom with its companion endorsing herbs and fruit "in the season thereof" (i.e., ripe?) much more pragmatic than a physician reading it today. Dr. Ticknor, as an example, could hardly have been in more literal agreement:

> And not only is animal food proper in winter, but the flesh of old, of fullgrown animals, which is much more stimulating than that of the young of the same kind, is then the more suitable for us. As the warm season approaches, nature has provided in her bounty a diet more bland and less exciting, in the tender flesh of young animals; and during the heat of summer she has given us a variety of succulent vegetables and fruits . . .[29]

Or rather, "flesh . . . only in times of winter, or of cold, or famine," and "every herb . . . and fruit in the season thereof. . . ."[30]

The subject of "hot drinks" is a little more complicated. As noted previously elimination of tea and coffee from the American diet was another health reformist cause at this time. The medical profession appears to have been more ambivalent on this subject than on alcohol and meat. Both tea and coffee were considered mild stimulants (and occasionally used medicinally), but there were major differences of opinion as to their importance as contributors to disease. As one might expect, there were many who considered one or both of these "hot drinks" to be a poison, and thus would have endorsed the Mormon notion that such were "not for the body or belly."[31] Unquestionably this notion found more support among regular physicians than did the vegetarian beliefs touted at the time by many health reformers. The medical elite, however, seems not to have subscribed to the extreme view seemingly implicit in the Mormon revelation ("seemingly," for reasons which follow). Once again the establishment response was to encourage abstinence for dyspepsics or those with unsuitable temperaments, and moderation for all others—which, in practice, seems to have been the Mormon view for most of the century. Professor Samuel Jackson, for example, felt the risks of coffee and tea much less than with fermented drinks. He nonetheless asserted that "simple and natural drinks" (basically, water or fruit juice) were "most . . . productive of health and longevity." The latter were "the only drinks that can be employed by those of the sanguine and nervous temperaments" or with any

"inflammatory diseases" without entailing "most serious and distressing affections."[32]

Andrew Combe, in contrast, noted the "many objections . . . to both tea and coffee as an evening beverage," but attributed any real basis to the charges to the "undue quantity and strength rather than to their temperate use." This was not to say there were no risks, for "when made very strong, or taken in large quantity, especially late in the evening, they not only ruin the stomach, but very seriously derange the health of the brain and nervous system."[33] And again, Ticknor, in agreement with Combe and paralleling his own remarks on meat, adds: "There are some peculiarities of constitution that will not tolerate the use of either of these substances [tea and coffee] in the smallest quantity." A person "in health," however, can "indulge in their use without risk or injury."[34]

One should not infer that orthodox physicians would necessarily have differed with Word of Wisdom guidelines on "hot drinks." In fact most would probably have felt themselves in full agreement, because on the question of *temperature* there was near unanimity—at least as it related to *high* temperatures. Despite his judgement that "no valid objection" could be made against the temperate consumption of tea and coffee, Combe asserted without qualification that "liquids, such as soup, tea, and coffee, taken at a very high temperature, . . . are injurious."[35] To Ticknor, it was the hot water that was the real culprit, hot tea being "positively less injurious than simple hot water" because its tonic properties partially conteracted the debilitating effects of the latter.[36]

It was commonly held that the appropriate temperature of food and drink was very little above or below the heat of the blood, possibly adjusted up a little in winter and down in summer. Under some circumstances excessively low temperatures were held by many authorities to be as dangerous as high ones; Combe thought they were potentially more so. It was well known to him—and reported as well by many others—"that a copious draught of cold water, taken in a state of perspiration and fatigue, is often instantly fatal."[37] (In a single week, eight such deaths were reported from Philadelphia alone!)[38] Where some authorities might condemn the Mormon standard, therefore, was not in its denunciation of hot drinks, but rather in its failure to include a warning against very cold ones as well.

As in the case of alcohol, the medical "elite" did not stand alone on the issues of coffee, tea and meat. The popular Wesley self-help guides advised readers to "drink only water if it agrees with your stomach," and warned that coffee and tea were "extremely harmful" to those with "weak nerves." Buchan likewise warned against excessive consumption of meat and tea but also noted the appropriate use of the former in "cold countries." Other family guides to health, such as Thomas Ruble's *The American Medical Guide for the Use of the Family* (1810), Anthony Benezet's *Family Physician* (1826), and John C. Gunn's *Domestic Medicine* (1832) also warned variously (but not unanimously) against hot drinks, excessive meat consumption and too much use of spices. Wooster Beach (1833) thought highly seasoned meat "especially dangerous," but also believed that tea and coffee taken in moderation, and

neither too strong or too hot, "seldom" did harm. The botanics, while flatly rejecting orthodox therapy, were seemingly closer to orthodoxy than Grahamism on the purely dietetic questions. F. K. Robertson's *The Book of Health* (1843), for example, rejected the total proscription of meat (opposing, rather, "fatty" meat), and cited as the principle causes of dyspepsia the "habitual use of cathartics, ardent spirits, tobacco, coffee, tea, mercury, opium, and blood-letting, hard indigestible food, new-bread, raw fruits, grease, butter, and exposure to cold."[39]

Tobacco, the remaining subject in this brief review, was at once more and less of a problem for the physician of 1830. Although known to be a "poison" in concentrated form, it was not believed to pose the same acute risk as ardent spirits or possibly very cold water. (To be sure, there were reports of cholera striking victims shortly after they took a quid of tobacco!)[40] Moreover, while critics including some physicians had condemned the recreational use of "the weed" for nearly two centuries, tobacco's medicinal properties had been extolled even longer. One student of this subject has listed over 250 different maladies—from abdominal pain and snake bite, to madness, piles, scurvy and yaws—allegedly treatable with tobacco, which was applied onto or injected into literally every surface or orifice in the human body.[41] Poultices, plasters, pills and powders all had been used, as well as dozens of other concoctions. Tobacco smoke was thought to protect against the black death in the seventeenth century, and some still recommended cigars to ward off cholera in the nineteenth.

Overall, however, in the nineteenth century tobacco had lost its status as a panacea, and even its use as a specific remedy was beginning to fall into disfavor. Devotees no longer argued that its daily use prolonged life; and tobacco smoke enemas (injected "by means of bellows of a peculiar construction"), for example, while still occasionally recommended for cholera and other ailments, were discredited as an ineffective treatment for drowning. Similar infusions of a preparation of the tobacco leaf itself, formerly recommended for hernias, came to be regarded as too dangerous in all but the most extreme cases of hernial strangulation. A popular anti-tobacco impulse developed around 1830, again led by the health reformers, but with a number of respected orthodox physicians (and botanics) among its spokesmen. In its wake even well-accepted indications—such as indigestion and toothache (a

Brigham Young favorite)—began to be questioned. The effectiveness was sometimes disputed, but more often the perceived problem was the accompanying "involuntary" and "insensible" falling into the "habit of using tobacco."[42]

One judges that the popular use of tobacco was viewed by the collected medical establishment in an mixed light somewhere between ardent spirits and coffee or tea. There appears to have been more vigorous opposition to the use of tobacco (varying with whether it was snuffed, chewed, or smoked in cigars or pipes) than to the latter, but then tobacco still had acknowledged value as a therapeutic agent beyond that usually accorded the mild stimulants. This, once again, made sense in the nineteenth century context. The more powerful agents were the most useful therapeutically—and most risky socially.

Thus, the Mormon condemnation of tobacco as "not for the body, neither for the belly" would have been considered good advice by a number of leading physicians such as Caleb Ticknor and Daniel Drake, and reasonable if not necessary by all. The Mormons' relative deemphasis (in contrast to their attitude toward strong drinks) of this facet of their health code[43] would also have found a receptive medical context. A Mormon assertion that tobacco should be used as an "herb for bruises" (a notion dating to at least 1633) would have met more widespread, though diminshing objections, if this were interpreted as the *only* appropriate therapeutic use.[44]

The doctrinal recommendation that tobacco was for "all sick cattle" is more difficult to assess, as there is no convincing indicator of the accepted veterinary wisdom of the day. The use of tobacco for certain diseases in horses was apparently quite common, but its use in cattle is mentioned less frequently. The *New England Farrier and Family Physician* (1828) reported two remedies for cattle sick with "horn-ail" or poisoning with laurel which relied on tobacco (attributed to a "Capt. Joseph Smith of Exeter"!). And S.W. Coles' *The American Veterinarian,* which appeared two decades later, also recommended a tobacco purgative in the usually fatal "milk sickness" which affected cattle west of the Alleghenies. Coles also reported that tobacco had some value as a diuretic, though—once again—more often "in the treatment of horses, than in cattle practice."[45] (He felt that "corn fodder is excellent for cattle," that oats were "an excellent food" for horses, "giving strength and spirit," and that confined pigs should be given "green food, such as grass, weeds, and other herbiage."[46] He presumably, therefore, would have endorsed the Mormon doctrine of "corn for the ox, and oats for the horse, and rye for . . . swine. . . .")

Having found a considerable initial overlap between conventional (and popular) medical wisdom and Mormon health guides, one is not surprised to find also that the early Mormons did occasionally justify their beliefs in terms of contemporary medical understanding—much as is done today. Such an instance appeared in John Jaques' *Catechism for Children* (1854) which instructed Mormon youth that wine and strong drink were not good "because they excite men unnaturally, inflame their stomachs, vitiate their appetites, and disorder their whole systems;" that "flesh" should be eaten "in winter,

and in times of famine, and not at other times" because it was "heating to the human system, therefore it is not good to eat flesh in summer . . . ;" that "hot drinks" are not good "because they relax and weaken the stomach, and indeed the whole body" (this medical rationale applied only to *hot* drinks, per se, and not to tea or coffee); and that it was "not good to smoke or chew tobacco" because "those habits are very filthy, and tobacco is of a poisonous nature, and the use of it debases men."[47]

One is tempted to undertake a reconstruction of the evolution of medical thinking on these various points and correlate it with changes in the way Mormons viewed the Word of Wisdom. At a time when compliance with the Word of Wisdom fell to all-time lows in the first decades of the exodus, as an illustration, medical theory and practice increasingly emphasized the *value* of stimulating diet and alcohol in the treatment of many conditions. Brigham Young, it may be recalled, received regular doses of brandy perhaps—the single most widely used drug of that time—during his final illness in 1877.[48] Even Sylvester Graham before his death at the relatively young age of fifty-seven turned to meat and strong drink in a desperate attempt to restore his own health. There seems also to have been another notable, if partial congruence around the turn of the century when increasing popular and medical concern over alcohol and tobacco coincided with an important transition in Mormon thinking on the subject.[49]

There clearly were other important factors, ecclesiastical as well as economic, in this history, but space precludes any serious effort to unravel the entire 150-year story.[50] For present purposes, the important point is that notwithstanding the reassuring recent discoveries of medical science, Mormonism's health code has never been more in agreement with the views of the medical establishment than it was at the very outset. The recommendations it contains were generally sound medicine at the time they were first set forth. Where the guidelines were reflective of a minority view, it was a respected minority, and the flexibility with which the Mormons applied such "minority planks" rendered them even more mainstream. The implications of all this would seem to be that despite the reluctance of some to concede the point, Mormons must grant that the Word of Wisdom is not quite as unique a document as we might hope, nor necessarily a reflection of only a few far-seeing reformist ideas.

Having covered to some degree the medical context in which the Word of Wisdom was received, it is important to recall briefly the equally relevant *health* context. Many today are inclined to read the promise of the Word of Wisdom as a sweeping guide to good health rather than the answer to specific questions current in 1833; or, in language which seems in part borrowed from Proverbs, as a literal guarantee of "health in [the] navel and marrow to [the] bones." Both possibilities presumably could be true, and much more so than today, physicians a century and a half ago would have felt this to be the case. Many, in fact, said as much in their writings on diet and hygiene. It is

nonetheless instructive to consider the impact of the Word of Wisdom on the actual health of nineteenth century Saints. I should perhaps say the *potential* impact, since the Word of Wisdom seems not to have dominated the Mormon lifestyle before 1900.[51]

By 1980 standards, nineteenth-century Americans, Mormons included, enjoyed rather poor health. Life expectancy in 1830 is estimated at half of what it is today—a mere thirty-five years. By 1900 this had climbed to just under fifty, which is still not up to the standard of many of our so-called underdeveloped countries today.[52] Recent studies comparing Mormons with non-Mormons suggest that strict adherence to the Word of Wisdom may increase life expectancy by five years, perhaps several more—a remarkable enough effect today, but only a fraction of the difference between overall nineteenth- and twentieth-century longevity.[53] Even this relatively modest gain may not have accrued to the most obedient of the early Saints. At least two important factors should be considered. First, the major impact of the Word of Wisdom appears to be on chronic diseases of adulthood such as cancer and heart disease, ailments of relatively little impact in the nineteenth century—because people didn't live long enough to die from them. Whereas over 50% of those born today will still be alive at age seventy-six or more, as late as 1900 over half were dead by fifty-eight; for much of the previous century, most people didn't even reach fifty. Second, the largest single demonstrated factor in favor of twentieth-century Mormon longevity is the failure of Mormons to smoke cigarettes, a custom that became commonplace in America only after the invention of cigarette making machinery very late in the nineteenth century. In many important areas of health, including the major ones affecting mortality, it is not so much that Mormons do "better," but rather that non-Mormons now collectively do worse—because so many of them smoke cigarettes. This cannot be said to be true for most of the nineteenth century because cigarette smoking was not so common, and tobacco chewed, taken as snuff, or even smoked in pipes or cigars has not been shown to carry nearly as great a risk.[54]

Where the nineteenth-century quest for good health really needed help was in warding off infant diarrhea, dysentery, diphtheria, scarlet fever, typhoid fever, tuberculosis, influenza and pneumonia, cholera, malaria, yellow fever and smallpox. The Mormons, for example, suffered staggering losses to infant diarrhea and cholera during the early pioneer years; for most of the century, they had high death rates from diphtheria and typhoid fever.[55] It is possible that their losses to such illnesses would have been reduced slightly had they comsumed no coffee, tea, alcohol or tobacco. However, the advantage gained would pale by comparison to that derived from meticulous sanitation, safe water (or boiling what water was available) increased personal hygiene, swamp drainage, upgraded diet (to prevent scurvy), or selective isolation of those affected with certain diseases.[56]

Reporting on the state of health in Salt Lake City as late as the 1870s, Dr. E.P. Vollum wrote that the sickest months were June through September, and perceptively attributed this to the "character of the drinking-water during these months." "The water from wells" at this time, he wrote, "which is

principally used for drinking and culinary purposes, is at its greatest degree of concentration . . .

> [of] the organic matters that settle down from the surface of the streets, yards, gutters, drains, water-closets, &c., and pass into the soil without any obstruction to their flow either downward or laterally; and, as a consequence, it becomes a purgative mixture, especially to strangers, and the amount of bowel disease, and deaths from its effects, is simply frightful, particularly among the children.[57]

One can well imagine that such water did give visitors a good purge, as well as a good chance for dysentery and typhoid fever, to name two leading causes of death.

The problem, of course, was that no one knew about germs—bacterial, viral or otherwise—until late in the century. Dr. Vollum indicated the concentration of "salts of lime, potash, soda, and magnesia" along with the "organic matters." The immediate, or "local" causes of disease (as distinct from the over-riding predisposing causes already discussed) remained completely misunderstood. In America at least, most illness was still tied to miasma or other atmospheric conditions.[58]

Because of the decimating effects on the early Saints of such water-borne diseases as cholera, dysentery, infant diarrhea and typhoid fever alone, one wonders why there was no guidance about the more important subjects (from the mortality standpoint) of clean water and waste disposal. It almost seems that those pioneers who drank coffee and tea would have fared better than their obedient brethren; at least they heated their water (several minutes of boiling would have eliminated the risk of infectious diseases). Some alcoholic beverages, for that matter, would surely have been safer than the alternatives available to the pioneers in Winter Quarters.[59] We obviously can't know all the answers, but this seems strong circumstantial evidence at least for the notion that the Word of Wisdom represents a response to more specific circumstances than we often assume today.

Two concluding points should be made. The first, which almost goes without saying, is that the last medical word is still not in on the relative value of many Word of Wisdom guidelines, making firm conclusions risky if not foolish.[60] The second point is that whatever merit or function the Word of Wisdom had for the nineteenth century Mormons, in retrospect we know that circumstances changed around the turn of the century in such a way that its guidelines could unquestionably promote better physical health (i.e., there was more cigarette smoking, and less serious infectious disease). That this development—the implications of which were not apparent to the medical scientists for decades—coincided with a decision by the church leadership to require firm adherence to the Word of Wisdom is quite remarkable. It may well represent their most demonstrably prescient insight to date in helping assure that the "destroying angel" of disease will "pass us by."

NOTES

[1]This is well summarized in Joseph L. Lyon and Steven Nelson, "Mormon Health," *Dialogue: A Journal of Mormon Thought* XII No. 3: 84–96, Autumn 1979. Mormon men were reported to live about five years longer than non-Mormon men; Mormon women about three years.

[2]John H. Holbrook, MD, "Smoking and Health, 1973," *The Ensign*, June 1973, p. 29.

[3]For what interest was expressed, see Lester E. Bush, Jr., "A Peculiar People: 'The Physiological Aspects of Mormonism,' 1850–1875," *Dialogue* XII No. 3: 61–83, Autumn 1979.

[4]Of the many words addressing this subject, some of the most useful are those collected in Judith Walzer Leavitt and Ronald L. Numbers, eds., *Sickness & Health in America: Readings in the History of Medicine and Public Health* (Madison: The University of Wisconsin Press, 1978); Guenter B. Risse, Ronald L. Numbers, and Judith Walzer Leavitt, *Medicine Without Doctors: Home Health Care in American History* (New York: Science History Publications/USA, 1977); and Richard Harrison Shryock, *Medicine in America: Historical Essays* (Baltimore: The Johns Hopkins Press, 1966). Also especially valuable are John B. Blake, "Health Reform," in Edwin S. Gaustad, ed. *The Rise of Adventism* (New York: Harper & Row, 1978); Stephen Nissenbaum, *Sex, Diet, and Debility in Jacksonian America: Sylvester Graham and Health Reform* (Westport, Conn.: Greenwood Press, 1980); William G. Rothstein, *American Physicians in the 19th Century: From Sects to Sciences* (Baltimore: The Johns Hopkins Press, 1972); Ronald L. Numbers, *Prophetess of Health: A Study of Ellen G. White* (New York: Harper & Row, 1976); Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849 and 1866* (Chicago: The University of Chicago Press, 1962); and Martin Kaufmann, *Homeopathy in America: The Rise and Fall of a Medical Heresy* (Baltimore: The Johns Hopkins Press, 1971). Alex Berman provides the two most insightful articles on the botanics, "The Thomsonian Movement and its Relation to American Pharmacy and Medicine," *Bulletin of the History of Medicine* 25:405–428, 519–538 (1951), and "Neo-Thomsonianism in the United States," *Journal of the History of Medicine & Allied Sciences* 11:133–155 (1956).

For Mormon attitudes over these years see N. Lee Smith, "Herbal Remedies: God's Medicine?", *Dialogue* XII, No. 3: 37–60 (Autumn 1979).

[5]Elaborated at length in Rothstein, op. cit., and Joseph F. Kett, *The Formation of the American Medical Profession: The Role of Institutions, 1780–1860* (New Haven: Yale University Press, 1968).

[6]This is not to deny that the general popularity of the orthodox practitioners reached its all time low in the second quarter of the century. The "professors" were still the highest court of appeal for most serious and intractable cases with all but the most committed sectarians.

[7]Robley Dunglison, MD, *The Medical Student; or, Aids to the Study of Medicine* (Philadelphia, 1837), pp. 201–289; "Report of the Committee on Medical Literature," *The Transactions of the American Medical Association* (Philadelphia, 1848), 1:249–288. Dunglison, who had come from England in 1825 at the invitation of Thomas Jefferson to be professor of medicine at the University of Virginia (as well as Jefferson's personal physician), was then a professor at Jefferson Medical College in Philadelphia. The AMA bibliography was the combined effort of seven leading physicians: Oliver Wendall Holmes, Enoch Hale, George C. Shattuck, Jr., Daniel Drake, John Bell, Austin Flint and W. Seldon. Also consulted in assembling my core of authorities were Samuel D. Gross, *History of American Medical Literature . . .* (Philadelphia, 1876), and Edward H. Clarke, Henry J. Bigelow, Samuel D. Gross, T. Gaitland Thomas and J.S. Billings, *a Century of American Medicine, 1776–1876* [1876] (Brinklow, Md.: Old Hickory Bookshop, 1962), especially the chapter on "Literature and Institutions."

[8]This is most convincingly presented in Dean D. McBrien, "The Influence of the Frontier on Joseph Smith," (Unpublished Doctoral Dissertation, George Washington University, 1929), and Paul H. Peterson, "An Historical Analysis of the Word of Wisdom" (Unpublished Master's Thesis, Brigham Young University, 1972).

[9]Most of the observations made in this paper are based on the collective opinions of several dozen books by the authors commended in the bibliographies cited in note 7. Among these are the following, all recognized authorities in 1833: Franklin Bache, John Bell, William Beaumont, John Redman Coxe, Andrew Combe, Daniel Drake, Robley Dunglison, John Eberle, Samuel Jackson, J.A. Paris, Caleb Ticknor and George B. Wood. Most readers will find the secondary sources, such as those cited in note 2, to cover similar material in a much more accessible manner. Therefore, I have regularly given secondary citations for convenience, and have included illus-

trative primary quotations only when they are particularly apropos the points being made. On the heroic approach alluded to in the text, see also Alex Berman, "The Heroic Approach in 19th Century Therapeutics," *Bulletin of the American Society of Hospital Pharmacists* 11:320–327 (1954), and reprinted in Leavitt and Numbers, eds., op. cit., pp. 77–86.

[10]A discussion of this can be found in Rosenberg, op. cit., Nissenbaum, op. cit., esp. pp. 86–104, and Charles E. Rosenberg, "The Cause of Cholera: Aspects of Etiological Thought in 19th Century America," *Bull. Hist. Med.* 34:331–354 (1960), and reprinted in Leavitt and Numbers, op. cit., pp. 257–271.

[11]J.A. Paris, MD, *A Treatise on Diet with a View to Establishing, on Practical Grounds, A System of Rules for the Prevention and Cure of Diseases incident to a disorder of the Digestive Functions* (New York, 1828), p. 104; Daniel Drake, MD, *An Oration on the Causes, Evils, and Prevention of Intemperance . . .* (Columbus, Ohio, 1831), p. 6; George B. Wood, MD, and Franklin Bache, MD, *The Dispensatory of the United States of America* (Philadelphia, 1833), p. 58. The work by Paris, a highly respected physician in Edinburgh whose works were regularly reprinted in the United States, was faulted by Dunglison as being "too popular." Both Paris and Dunglison are included by William Beaumont as among the "luminaries in the science of physiology" in his landmark *Experiements and Observations on the Gastric Juice and the Physiology of Digestion* (Plattsburg, N.Y., 1833), p. 101. The *Dispensatory*, which went through numerous editions, was termed by Clarke et al, op. cit., in 1876 to be "the most successful medical book every published in this country." Dunglison thought it "ought to be in every office."

[12]Drake, op. 6; Samuel Jackson, MD, *The Principles of Medicine, founded on the Structure and Functions of the Animal Organism* (Philadelphia, 1832), p. 324.

Although Benjamin Rush, for reasons deriving directly from his medical philosophy is often termed the "medical" father of the American temperance movement, he did not hesitate to recommend wine, nor did J.A. Paris, cited in the text.

[13]As quoted in Nissenbaum, op. cit., p. 78. The editor of the *Journal of Health* was Dr. John Bell, another eminent physician from Philadelphia who authored many successful texts.

[14]William J. Rorabaugh, *The Alcoholic Republic: An American Tradition* (Oxford University Press, 1979), pp. 196–202; and James H. Cassedy, "An Early American Hangover: The Medical Profession and Intemperance, 1800–1860," *Bull. Hist. Med.* 50:405–413 (1976). Better yet are the primary sources. Caleb Ticknor and Andrew Combe, for example, commended by Dunglison for their works on hygiene, both condemn—albeit gently—on physiologic grounds the non-medical use of any alcohol including wine. Caleb Ticknor, MD, *The Philosophy of Living; or, The Way to Enjoy Life and Its Comforts* (New York, 1836), p. 88; Andrew Combe, MD, *The Physiology of Digestion Considered with Relation to the Principles of Dietetics* (New York, 1836), pp. 285–286. Beaumont, op. cit., p. 239, is in apparent agreement.

Several of those addressing these questions, both among regular and sectarian authors, recommended that any fermented drinks consumed be brewed at home, Dunglison, following the lead of William Kitchiner, recommended this for athletes in training; William Buchan and Wooster Beach (noted below) made it a general recommendation. Adulteration with ardent spirits or other undesirable additives was thereby to be avoided. (The same recommendation, of course, is found in the Mormon health code.)

[15]See Rorabaugh, op. cit., Nissenbaum, op. cit., pp. 69–85; and more generally, John Allen Krout, *The Origins of Prohibition* (New York: Alfred A. Knopf, 1925), and Clifford S. Griffin, *Their Brothers Keepers: Moral Stewardship in the United States, 1800–1865* (New Brunswick: Rutgers University Press, 1960).

[16]Buchan's work, reprinted many times in the U.S. (e.g., 1795, 1809, 1816, 1828), was termed the most important domestic self-help book in America by Clarke et al in their centennial retrospective. The influence of Wesley, whose health guide was reprinted many times in nineteenth century America, was almost as great. *Primitive Physic* was first published in 1747; *Domestic Medicine* in 1769. See John B. Blake, "From Buchan to Fishbein: The Literature of Domestic Medicine," in Risse, Numbers, and Leavitt, eds., op. cit., pp. 11–30. Other references are from Samuel Thomson, *New Guide to Health; or, Botanic Family Physician . . .* Fifth Edition (St. Clairsville, 1828), p. 83; Wooster Beach, MD, *The American Practice of Medicine . . .* (New York, 1833) 1:30–32; and Kett, op. cit., p. 125.

[17]On Mormon practices during this time, see Peterson, op. cit., pp. 22–41.

[18]Combe, op. cit., p. 280. Jackson, op. cit., p. 325, felt that fermented drinks were appropriate in "the lymphatic temperament, in which the organs are but little excitable; while engaged in

arduous muscular exertions; with those advanced in life; during extremely cold, or excessively warm weather, enervating the forces; and when the quality of the food is not such as to excite the stomach sufficiently for digestion." Drake, recall, felt that constitutions requiring such drinks, were "few."

[19]Peterson, op. cit., p. 38.

[20]Most notably Nissenbaum, op. cit. On Alcott see James C. Whorton, " 'Christian Physiology': William Alcott's Prescription for the Millenium," *Bull. Hist. Med.* 49: 466–481 (1975).

[21]Nissenbaum, op. cit., pp. 30, 105–124; H. Tristram Engelhardt, Jr., "The Disease of Masturbation: Values and the Concept of Disease," *Bull. Hist. Med.* 48:234–248 (1974), also reprinted in Leavitt and Numbers, eds., op. cit., pp. 15–23.

[22]M.B. Shipp, MD, *Infancy and Childhood* (Salt Lake City: Salt Lake Sanitarian, N.D.), p. 25.

[23]Drake, op. cit., p. 5; Nissenbaum, op. cit., p. 14.

[24]Rorabaugh, op. cit., pp. 113–116; Shryock, op. cit., p. 113. The *Medical Repository* asserted in 1818 that more meat was consumed in America than in any other country (19:iii), and Daniel Drake three decades later could still write that "the quantity of animal food consumed in the [Mississippi] Valley is very great. Indeed, it may be affirmed that more is eaten than by any equal number of people in the whole world. With a limited number of exceptions, meat is on the table three times a day, and as often eaten by the great majority." Daniel Drake, *A Systematic Treatise, Historical, Etiological and Practical, on the Principle Diseases of the Interior Valley of North America . . .* (Cincinatti, 1850), 1:654–655.

[25]Rosenberg, op. cit., pp. 30, 42 (footnote 4).

[26]Ticknor, op. cit., p. 37.

[27]Combe, op. cit., p. 227; Edward Hitchcock, *Dyspepsy Forestalled and Resisted, or Lectures on Diet, Regimen, and Employment* (Amherst, 1831), p. 117. Hitchcock, a professor of chemistry and natural history at Amherst College, and later president, was not a physician and is not in the bibliographies. His lectures in many ways reflect the leading medical wisdom of the day and in others are closer to the health crusade then beginning.

[28]Combe, op. cit., p. 227. An entertaining review of this notion carried to the extreme is James C. Whorton, " 'Tempest in a Flesh-Pot': The Formulation of a Physiological Rationale for Vegetarianism," *J. Hist. Med. and Allied Sciences* 32:115–139 (1977), also reprinted in Leavitt and Numbers, eds., op. cit. pp. 315–330.

[29]Ticknor, op. cit., p. 38.

[30]D&C 89:13, 11.

[31]Although central to the Grahamite movement, this notion was both broader and older. Some botanics espoused it, and the debate among orthodox physicians is regularly alluded to in texts dealing with diet. Rorabaugh, op. cit., pp. 99–100, notes that coffee and tea consumption was rather limited in comparison to distilled and fermented drinks at this time. Estimated annual per capita coffee consumption in 1830 was only five pounds (*up* significantly over the previous decade), while the same figure for tea in 1832 was less than one pound (or 250 cups).

[32]Jackson, op. cit., pp. 322–323.

[33]Combe, op. cit., p. 272.

[34]Ticknor, op. cit., p. 106. The Second Edition of the Bache and Wood *Dispensatory* (1834) was in general agreement, noting that tea when "taken moderately, and by healthy individuals, . . . may be considered perfectly harmless; but long continued in excessive quantity, it is capable of inducing unpleasant nervous and dyspeptic symptoms, the necessary consequences of over excitement of the brain and stomach." Green tea, in particular, was to be avoided by those "whose nervous systems are peculiarly excitable" and "dyspeptic individuals" (p. 667) John Redman Coxe, in *The American Dispensatory* Eighth Edition, (Philadelphia, 1830), p. 216, felt coffee's "more or less wholesome effect greatly depends on the climate, as well as the age, constitution, and other peculiarities of the individual. Hence it cannot be commended to children, or persons of a hot, choleric, nervous, or phthisical habit; nor will it be so useful in warm, as in cold and temperate climates." Looking forward a few years, the same basic assessment is made by Drake, op. cit. (1850), 1:658–661, and the well-respected Jacob Bigelow, in "On Coffee and Tea; and their Medicinal Effects," in his *Nature in Disease* (Boston, 1854), pp. 289–314. Sir William Osler, in reviewing the outstanding contributions of Beaumont's 1833 work, cited among other things his confirmation of "the injurious effects of tea and coffee, when taken in excess." See

Osler's "William Beaumont, A Pioneer American Physiologist," reprinted in the Dover reprint of Beaumont's work (New York, 1959), p. xxvi.

[35]Combe, op. cit., p. 276.

[36]Ticknor, op. cit., p. 105. Also see Paris, op. cit., pp. 82, 90; Hitchcock, op. cit., p. 170; and Drake (1850), op. cit., 1:659.

[37]Combe, op. cit., p. 273. Drake several years later wrestled with the fact that folks down in New Orleans were taking with apparent impunity drinks "cooled down to fifty degrees, a temperature which frequently proves fatal in the higher lattitudes." He concluded that the Southerners must have been mixing their water "with ardent spirit or wine . . . which corrects the effects of a low temperature." Drake (1850), op. cit., 1:662.

[38]Rorabaugh, op. cit., p. 98.

[39]John Wesley, *Primitive Physic* . . . 23rd edition (London, 1791), pp. 29–30; William Buchan, *Domestic Medicine* (Exeter, 1828, from "the twenty-second English edition"), pp. 20–21; Thomas Ruble, *The American Medical Guide* . . . (Richmond [Ky], 1810), pp. 59–61; Anthony Benezet, *The Family Physician* . . . (Cincinatti, 1826), pp. 62, 79; John C. Gunn, *Domestic Medicine* (Ohio?, 1832), pp. 145–149; Beach, op. cit., 1:25–27; F. K. Robertson, *The Book of Health* (Bennington, 1843), p. 245.

[40]Rosenberg, op. cit., p. 73.

[41]Grace G. Stewart, "A History of the Medicinal Use of Tobacco, 1492–1860," *Medical History* 11:228–268.

[42]Ticknor, op. cit., pp. 107–118. The 1833 *Dispensatory* (p. 630) reported that excessive use of tobacco "enfeebles the digestive powers, produces emaciation and general debility, and lays the foundation of serious disorders of the nervous system." Over two decades later the range of opinion is illustrated by Drake (1850), op. cit., who advised that tobacco was an "evil" which should be "resisted in every practical way" (1:673–676); and Bigelow (op. cit.) who felt that "when moderately taken," it was "improbable" that tobacco had "much influence in wearing out the constitution, or abridging the usual period of life" (p. 332). The decline of tobacco as a useful therpeutic tool can be traced easily in the successive *Dispensatories* of the period.

[43]Peterson, op. cit., pp. 26–27.

[44]This narrow interpretation was not made in the early decades after the Word of Wisdom was announced. For the early reference to tobacco in bruises, see Stewart, op. cit., p. 253.

[45]Josiah Richardson, Comp., *The New England Farrier, and Family Physician* . . . (Exeter [N.H.?], 1828), p. 362; S.W. Coles, *The American Veterinarian* . . . (Boston, 1849), pp. 35, 212–213.

[46]Coles, op. cit., pp. 93, 175, 271.

[47]John Jaques, *A Catechism for Children* Liverpool, 1854 (and many Salt Lake City editions), p. 63.

[48]Detailed in Lester E. Bush, Jr., "Brigham Young in Life and Death: A Medical Overview," *Journal of Mormon History* 5:79–103 (1978). On changing therapy in general and the increasing use of alcohol in particular, see Charles E. Rosenberg, "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth Century America," in Morris J. Vogel and Charles E. Rosenbery, eds., *The Therapeutic Revolution: Essays in the Social History of American Medicine* (Philadelphia: University of Pennsylvania Press, 1979), pp. 3–25. Also John Harley Warner, "Physiological Theory and Therapeutic Explanation in the 1860's: The British Debate on the Medical Use of Alcohol," *Bull. Hist Med.* 54:235–257 (1980).

Peterson, op. cit., found an ambivalent but overall relaxed atmosphere toward the Word of Wisdom in the decade or so after it was announced. Emphasis in practice was on temperance rather than abstinence, and wine and tobacco were widely tolerated. As the Mormons moved west, their compliance dropped to a low ebb which continued until about 1860. After this time, increased adherence became evident through an apparently economically motivated retrenchment on the health code. The entire century was marked by fluctuating emphasis, with periodic short-lived reforms, but never any absolutely binding requirement that members abstain from condemned items. The practical interpretation most often required only that members be temperate. Overall, compliance increased significantly in the last decades of the century.

[49]See Thomas G. Alexander, "The Word of Wisdom: From Principle to Requirement," in this issue of *Dialogue*.

[50]Leonard J. Arrington, "An Economic Interpretation of the 'Word of Wisdom,'" *BYU Studies* 1:37–49 (Winter 1959).

[51]See summation of Peterson, op. cit., in Note 48 above. Proverbs 3:1, 2, 8, 16 should be contrasted with D&C 89:18–21.

[52]"Sickness and Health in America: An Overview," in Leavitt and Numbers, ed., op. cit., pp. 3–10.

[53]Lyon and Nelson, op. cit., pp. 92–93.

[54]Chewing, an American innovation, dominated the U.S. market throughout the century. On the relative risks see the *Surgeon General's Report on Smoking and Health, 1979*, especially chapters 1, 2, and 13. The third leading tobacco-implicated disease—behind heart disease and cancer—is chronic obstructive lung disease (e.g., emphysema), also tied principally to cigarettes. While the figures are not strictly comparable, some indication of the overwhelming impact of smoking vis-a-vis the Word of Wisdom in general is that non-smokers are estimated to live eight years longer than smokers of two packs or more a day, possibly a greater margin than Mormons have over non-Mormons—in part because half of the non-Mormons don't smoke. An interesting new indictment of "snuff-dipping," which does not change the historical equation significantly, is Deborah M. Winn, et al, "Snuff Dipping and Oral Cancer Among Women in the Southern United States," *The New England Journal of Medicine* 304:745–749 (March 26, 1981); see also the editorial response on pp. 778–779 in the same issue.

[55]Based on my own examination of sexton's reports for Nauvoo and Salt Lake City, but fully corroborated in Ralph T. Richards, *Of Medicine, Hospitals and Doctors* (Salt Lake City: University of Utah Press, 1953) pp. 140–172; and William J. Reals and Sidney Merlis, "Mormon Winter Quarters: A Medical Note," *Bulletin of the Creighton University School of Medicine* 4:46–49 (1947). On health problems at this time see among others Erwin H. Ackerknecht, "Diseases in the Middle West," in *Essays in the History of Medicine in Honor of David J. Davis, MD, PhD.* (Chicago: Davis Lecture Committee [of the University of Illinois], 1965), pp. 168–181; Raymond N. Doetsch, *Journey to the Green and Golden Lands: The Epic of Survival on the Wagon Train* (Port Washington, N.Y.: Kennikat Press, 1976), pp. 74–98; and Anthony J. Lorenz, "Scurvy in the Gold Rush," *J. Hist. Med. and Allied Sciences* 12:473–510 (1957)

[56]Despite the poor understanding of why such measures were beneficial, some potentially effective versions of all were advocated by contemporaries of the Mormons. Paris, op. cit., p. 259, advocated the potentially invaluable measure of boiling contaminated water as early as 1828. Curiously Brigham Young made a similar recommendation four decades later, though with hardly the same emphasis given the Word of Wisdom. Additionally, the early Mormons attempted some other measures such as swamp drainage, patient isolation and dietary treatments (beyond the Word of Wisdom) for scurvy, but with such flawed understanding that little was accomplished by their efforts.

[57]"Report of Surgeon E. P. Vollum, USA," in John Shaw Billings, *War Department Surgeon General's Office Circular No. 8, "Report on the Hygiene of the United States Army,"* May 1, 1875 (Washington, D.C., 1875), pp. 344–345. Census reports for 1860, 1870 and 1880, to select just a few years, support Vollum's impression, as do the Salt Lake City sexton's reports. Half to two-thirds of reported annual deaths were in those under age five. For comparison, this age group in 1980 accounts for roughly two to three percent of annual deaths.

[58]Ibid., p. 344. The general level of contemporary medical understanding is well covered in Phyllis Allen, "Etiological Theory in American Prior to the Civil War," *J. Hist. Med. and Allied Sciences* 2:489–520 (1947); Erwin H. Ackerknecht, "Anticontagionism Between 1821 and 1867," *Bull. Hist. Med.* 22:562–593 (1948); and Phyllis Allen Richmond, "American Attitudes Toward the Germ Theory of Disease (1860–1880)," *J. Hist. Med. and Allied Sciences* 9:428–454 (1954).

[59]Rorabaugh, op. cit., pp. 95–97, briefly discusses this in broader context, and notes that it was "only after the improvement of public water supplies that temperance zealots embraced the idea of 'Cold Water' as a substitute for alcohol."

[60]For example, very recent studies suggest an association between coffee consumption and cancer of the pancreas, and also indicate a link between alcohol, and possibly caffeine, during pregnancy and birth defects. While most medical authorities do not condemn the "temperate" use of these items in healthy adults, if these associations are confirmed new recommendations may be forthcoming.