

# Preserves

*Carrol Firmage*

*What we owe the future  
is not a new start, for we can only begin  
with what has happened. We owe the future  
the past, the long knowledge  
that is the potency of time to come.*

*—Wendell J. Berry<sup>1</sup>*

## **Part I**

### **Blossom As the Rose**

Apples! Bags and boxes of apples! So many of them lined the perimeter of our garage that the car hardly fit. It was mid-October, and I stood there counting the apples picked from our three backyard trees and asked myself how long it would take to deal with all of them. This year I was determined not to let any go to waste. I've always made applesauce from our apples; but sometimes, when the apples and the other items on my agenda were particularly abundant, I had just thrown many of them away. This year we harvested a respectable 113 pounds of Red and Golden Delicious apples. In my naive optimism, I calculated that in two weeks they would all be gone. Thankfully, apples don't spoil quickly because it was Thanksgiving weekend when they finally disappeared from the garage.

This year was different because our family has been trying to supply from our own backyard more of our table food. The apples are part of a bigger move toward greater self-reliance, and not an insignificant part.<sup>2</sup> So I wanted to try ways of preserving our harvest other than applesauce. The first thing I did was to buy a water-sipping steam canner that would allow me to bottle produce from our apple trees and vegetable garden. Because this was something I had never done before, I had visions of my kitchen becoming a sweatshop. Thankfully, it didn't.



*Elijah Cutler Behunin and Tabitha Jane Behunin and eleven of their thirteen children, ca. 1896. Photo courtesy of Capitol Reef Natural History Association.*

I also borrowed a food dehydrator. Drying fruit preserves more of the nutrients than cooking and is therefore a great way to store fruit. As I discovered, however, it also takes longer because the apples have to be cut into thin pieces and laid out on trays to dry. If the tedium of peeling and cooking the fruit for applesauce seemed to take a long time, then this took forever—about three hours per dehydrator load of apples. My then-ten-year-old daughter Victoria helped by laying out the slices on the trays.

It still took ages, but what a great result! The dried apples were tasty and easy to pack in lunches or backpacks for snacks. I also wanted to try apple leather, so I cut, peeled, and cooked the apples as I did for applesauce, then put them in the blender and poured the mixture onto dehydrator trays. This became our favorite way to eat stored apples. As it turns out, homemade apple leather has exceptional trade value during school lunch.

Apples weren't the only fruit that my three kids and I preserved this year. Not entirely by accident, we were visiting Capitol Reef National Park on a photo trip during the peach and pear harvest in August. Capitol Reef is an oddity among Utah's national parks in



*Waterfall, Fremont River, Capitol Reef National Park, Utah. Photo by Edwin Firmage Jr., 2008.*

that it maintains orchards from the original pioneer settlement. Among its unusual staff are two full-time horticulturists, who keep this oasis in good trim despite 130 years and many tree generations from its founding. Modern-day visitors are allowed to pick fruit for a nominal charge, so we spent an afternoon picking peaches and pears. Hot and sweaty, we wanted a shower. Since my husband, Ed, knew of a swimming hole at the bottom of a small waterfall in the Fremont River, we decided that a dip in the river would be our shower. This particular natural facility had the added benefit of being a worthy place to photograph. While we were there, only two other people came to swim. We had the silence of the canyon and the music of the falls to ourselves.

Swimming in the desert and fruit in the desert! We contemplated these miracles with our bodies, getting sticky in the orchards and washing off in the river. The little Fremont has made possible not only the remarkable human community of Fruita and its or-

chards, but also a uniquely beautiful landscape of sandstone canyons in and outside the park. After it leaves Capitol Reef, the Fremont joins Muddy Creek, one of many shapers of the spectacular San Rafael Swell. For our family, both of these rivers are rich not only with pioneer history and scenic beauty, but also with personal associations. Capitol Reef and nearby Torrey were our first love among Utah's redrock retreats. The San Rafael Swell was our second. Muddy Creek flows past the aptly named Hidden Splendor Road, which takes the traveler to the spectacular exit from the narrows of the San Rafael Reef. It flows past Factory Butte, Goblin Valley, and Little Wild Horse Canyon, which have been our haunts since before our two youngest children were born. This land is numinous with history and sparse desert beauty.

The evening after our swim we visited the Behunin cabin on the main road, just a little southwest of the waterfall. We thought of the people who had lived in that beautiful spot. The Behunin family was so large (thirteen children) and their cabin so small (one room) that the kitchen table was, for the most part, kept outside. The older girls had to sleep in the wagon, and the boys slept in a cave in the nearby sandstone wall. We spent some time trying to figure out which cavern behind the cabin would have suited the boys best. I don't know if we got it right or not. But we felt closer to our pioneer predecessors after a day of doing much the same thing that they must have done on August afternoons.

The Waterpocket Fold, the geologic formation that makes Capitol Reef National Park, was one of the last places explored by white settlers in the region. The semi-nomadic Fremont culture had occupied this area in prehistoric times, but it was mostly Utes and Paiutes who used the area until whites arrived. After the Blackhawk War (1865–72),<sup>3</sup> the last gasp of Native American resistance to settlement, whites began to move into the region in earnest. Nels Johnson was the first to establish a homestead on the confluence of Sulphur Creek and the Fremont River in 1880. Others quickly followed, clearing an area of about 300 acres. The spot, it turns out, is ideal for fruit trees, unlike the nearby high open valleys. As George Davidson says in *Red Rock Eden*, "This junction of two perennial waterflows was 2,000 feet lower than Rabbit Valley and had a longer growing season. Settlers found that the canyon walls reflected heat to the good soil below. Smallish Fruita may not

have been well suited for the grain economy of the high valleys, but it was ideal for one product in great demand on the frontier—fresh fruit.”<sup>4</sup> In contrast to today when sugar is cheap and plentiful, the frontier home had only one source of inexpensive and readily available sweetener—fruit. So, they planted apple, peach, pear, plum, walnut, and almond trees. Later on, they also had grapes, which became the basis for a thriving (especially during Prohibition) wine industry.<sup>5</sup> Today, about 2,700 cherry, apricot, plum, mulberry, and nut trees flourish in the Fruita orchards.<sup>6</sup>

Once the orchards started producing, a harvest-time trek to Fruita became a yearly event for those in nearby communities. Sarah Williams Stringham, who was born in Teasdale, recalled: “In the summertime we often went to Fruita, about twenty miles away, for peaches and grapes. Teasdale was higher and colder than Fruita and we couldn’t grow these fruits. We would go in the afternoon, camp overnight, pick the fruit in the morning and come home again. Sometimes three or four cousins would go and stay about two weeks. They would pick, cut and dry fruit for the owner of the orchard. As pay for this work the owner would give them as much fresh fruit as they had picked and dried for him.”<sup>7</sup>

Those first occupants seemed close indeed to us. Even though our modern lives are quite different in many respects, the yearly cycle of picking and preserving fruit links us. It is something we have done in Fruita as well as in our own yard, but we vowed to make the Fruita trek a yearly tradition.

Since our three apple trees were already established in our yard when we bought our house in 1993, I had taken them for granted. But growing fruit in Utah is not something that can be done just anywhere. Several factors determine whether an area can grow fruit: topography, water, elevation, and latitude. In Fruita, the main factor is elevation. Fruita sits at 5,436 feet. Torrey and Loa just a few miles away are 7,000 feet high. This extra elevation makes agriculture difficult, so livestock—cattle and sheep—have been the main commodities. But Fruita’s lower altitude, coupled with the protective walls of the Waterpocket Fold and consistent water, allow a few acres of fruit to thrive. The influence of elevation even this far south in Utah is dramatic. Loa has a 20 percent chance of frost as late as June 20. Fruita’s 20 percent chance is May 1. Loa has a 30 percent chance of a fall frost on September



*Schoolhouse, built in  
1896, Fruita, Utah.  
Photo by Edwin Firmage  
Jr., 2008.*

1, but not until October 20 in Fruita.<sup>8</sup> Only about twenty-five miles separate these two towns, but the difference is startling—two to three more months in the growing season.

These aren't the only closely connected places in Utah that show dramatic differences in the ability to grow fruit. Take Brigham City and Corinne in northern Utah. Here the elevations are about the same. Corinne lies at 4,230 feet and Brigham City six miles to the east at 4,436. Corinne has a 60 percent chance of a freeze on October 1, but in Brigham City the probability is just 20 percent.<sup>9</sup> The difference here lies in the fact that cold air sinks. The slight difference in elevation is not enough to make Brigham City substantially colder as Loa is when compared with Fruita. But the slightly higher elevation of Brigham City allows it to sit above the cold air that sinks into the bottoms of Utah's intermontane valleys. Brigham City today is still known for its excellent fruit, especially peaches. It celebrates a peach festival every September, the second oldest such festival in the country.<sup>10</sup>

In fact, in the core of Mormon settlement, the Wasatch Front, fruit grows well only in a surprisingly narrow and short band that stretches along the valley benches from Brigham City to Santaquin. Without knowing it, Apostle Heber C. Kimball identified



the importance of the benches in a sermon delivered on December 27, 1857, in the Salt Lake Tabernacle. He recalled the skepticism of mountain man Jim Bridger, who said that he would pay \$1,000 for the first ear of corn raised in the Salt Lake Valley. Ten fruitful years later, Kimball chided the Saints for behaving like Bridger and not exercising the faith to plant gardens, and in particular to plant fruit trees.

The individuals who believed that it was not possible to raise fruit here have no curr[a]nt bushes, no apples trees, no apricot trees, no peach trees, no plum trees; in fact they have not got any fruit at all, from the fact that they did not believe that fruit could be raised; and their works have shown their faith. . . .

Those same individuals now believe that we can raise fruit up here in brother Brigham's garden, and brother Heber's, and brother [Albert] Carrington's, and those men that live up here on the poorest land there is in the valleys. . . .

If you say you cannot raise fruit on [the] low land, I wish to say to you that I know better. And the reason why they have not raised fruit in the lower parts of the city is because they have not planted the trees. . . .

You can have fruit on the low land as well as on the high; you can have fruit at San Pete as well as here.<sup>11</sup>

We can pardon Heber's audience for their suspicion that he and Brigham had it a little easier than he lets on, for in fact, at least as far as horticulture was concerned, Heber and Brigham and Brother Carrington sat not on the dregs of the land as they supposed but on some of the finest fruit-growing soil in North America.

Beyond this favored bench land in northern Utah, orchards of any consequence are found only in small, isolated pockets such as Fruita, where accidents of topography mimic the ideal conditions of the Brigham City-Santaquin corridor. Generally speaking, Utah's high desert valleys either lack adequate water or lack a growing season long enough for fruit. The only other region notable for fruit is the St. George-Toquerville-Hurricane triangle. As lovers of Utah's cherries can still attest, horticulture also flourished in Utah's Dixie due to a combination of warm temperatures, sandy soil, and relatively abundant water below the 11,000-foot Pine Valley Mountains and the banks of the Virgin River.<sup>12</sup>

After climate and water, the most important factor in horticulture is soil. Fruit trees grow well in sandy, gravelly, or loamy

ground.<sup>13</sup> Good drainage is also essential. Northern Utah's valley benches, remnants of the sandy shoreline of ancient Lake Bonneville, and desert oases such as Fruita and the St. George-Hurricane strip, possess such characteristics. In fact, and not entirely by accident, the Mormons occupied a desert Eden where fruit could grow in abundance. Sam Edgecomb, formerly head of Utah State University's Department of Horticulture, said that "no other place that he had seen in his wide experience in Canada and the United States offered the opportunities for fruit production that were offered here."<sup>14</sup>

Learning how to use their natural endowment exacted enormous effort, time, and money from the Mormons. Since fruit trees are not native to the Intermountain West, they had to be imported. The story of Lorenzo Young is not atypical of what the first settlers were up against in their attempt to make the desert blossom. In 1848, a year after arriving in the Salt Lake Valley, Young planted seeds for 40,000 fruit trees! That year, crickets, in the first of several waves that would plague the pioneers until the crickets themselves became a casualty of human settlement, ate all but seventeen of the young trees that sprouted.<sup>15</sup> In 1850, determined to get a jump on the crickets, Young returned to Missouri and bought two hundred saplings, which he planted in six inches of soil in a covered wagon. By the time he reached Salt Lake City, all but three of the saplings had perished.<sup>16</sup>

Nor were fruit trees the only imports necessary for successful horticulture. North America has no native honeybees, so these too had to be imported and cultivated. Early Utah magazines such as the *Intermountain Horticulturist* (1890–91) spend as much time giving advice about bees as trees.<sup>17</sup>

Yet despite their unpromising beginning, fruit trees became a commonplace. Describing his visit to Salt Lake City on his way to California in 1860, Mark Twain wrote:

Next day we strolled about everywhere through the broad, straight, level streets and enjoyed the pleasant strangeness of a city of fifteen thousand inhabitants with no loafers perceptible in it . . . a limpid stream rippling and dancing through every street in place of a filthy gutter; block after block of trim dwellings, built of "frame" and sunburned brick—a great thriving orchard and garden behind every one of them, apparently—branches from the street stream



winding and sparkling among the garden beds and fruit trees—and a grand general air of neatness, repair, thrift and comfort, around and about and over the whole.<sup>18</sup>

That same year (1860), the famous and uncommonly sympathetic explorer Sir Richard Francis Burton came to Utah and visited Brigham Young's garden, among many other sites. After observing that a vineyard was being planted on the hillside near Brigham Young's downtown compound and that the family anticipated homemade wine soon (see below), Burton describes Young's orchard and garden:

Pomology is carefully cultivated; one hundred varieties of apples have been imported, and of these ninety-one are found to thrive as seedlings: in good seasons their branches are bowed down by fruit and must be propped up. . . . The peaches were in all cases unpruned: upon this important point opinions are greatly divided. . . . Besides grapes and apples, there were walnuts, apricots and quinces, cherries and plums, currants, raspberries, and gooseberries. The principal vegetables were the Irish and sweet potato, squashes, peas—excellent—cabbages, beets, cauliflowers, lettuce, and broccoli; a little rhubarb is cultivated, but it requires too much expensive sugar for general use, and white celery has lately been introduced.<sup>19</sup>

In fact, in less than twenty years, an extraordinary fruit industry had developed in Utah. Fifteen years after Burton's visit, the fruit census of 1875 shows 358,277 apple trees, 330,535 peach trees, 44,169 apricot trees, 43,585 plum trees, 10,569 pear trees, and 4,661 cherry trees.<sup>20</sup> At the peak of production in 1920, Utah boasted 806,775 apple trees, 582,753 peach trees, 120,341 cherry trees, 60,291 pear trees, and tens of thousands of assorted plum, apricot, and nut trees. As late as 1965, long after the real estate boom that began with the end of World War II had claimed thousands of acres of orchards, Utah Valley, the state's fruit capital, was still home to an estimated 682,677 fruit trees, the Brigham City-Perry-Willard corridor to 208,566, Weber County to 107,414, and Washington County to 46,950.<sup>21</sup> Little Fruita hardly rates mention with these fruit giants, but is prized among desert rats such as our family for being what it is where it is.

The interest shown by early Mormons in horticulture leads naturally to the question, "What did they do with all that fruit?" Like the Firmage family, early growers dried their crop or made it

into preserves of one sort or another. Pioneer diaries like that of Patty Bartlett Sessions frequently refer to these forms of preservation.<sup>22</sup> Nineteenth-century technology for preserving fruit, however, was limited. Practical home canning technology did not become common until the early twentieth century.<sup>23</sup> Furthermore, some essential ingredients for making preserves on a large scale were not available or affordable until the twentieth century. From the beginning, for example, people have sweetened preserves with lots of sugar to make them more palatable. But sugar was neither readily available nor cheap in pioneer Utah.<sup>24</sup> As I discuss below, the Mormons made herculean efforts to remedy this problem. But it was not until the twentieth century when, thanks to sugarbeet-growing Mormon farmers and Utah & Idaho Sugar, sugar became a cheap, everyday commodity in the state. Pectin, the gelling agent that makes jam and jelly preserves possible, was also not available as an off-the-shelf ingredient for preserves until the early twentieth century.<sup>25</sup> Thus, for pioneer families in Utah, preserves, whether in the form of whole fruit or processed jams and jellies, would have been luxuries, as they were for frugal households everywhere in nineteenth-century America. Lydia Child, author of a popular homemaking guide first published in 1833, captures this reality: “Economical people will seldom use preserves except for sickness. They are unhealthy, expensive, and useless to those who are well.”<sup>26</sup> Smuckers (founded in 1897, and made possible only by advances in glassmaking, a new energy source called natural gas, and industrially made pectin) was a possibility that Lydia had not envisioned.<sup>27</sup>

Apples, which were and are Utah’s dominant fruit, unlike their juicier cousins the peach and the plum, can, like potatoes and parsnips, also be stored during the winter in a root cellar. This practice continues even into our own time. Apples could therefore be saved without special processing. In fact, it seems likely that apples were the dominant fruit at least in part *because* they could be easily stored. And what couldn’t be stored could be dried.

But apples were not, for the most part, stored to be eaten fresh. The fate of the typical apple in the nineteenth century was to become hard cider. Other fruits had a similar fate. Pears were turned into perry, and peaches into mobby and brandy. Utah during the territorial period was far from “dry.” In fact starting in the

1850s, it was known for a locally produced form of moonshine (in this case, wheat whiskey) known as “Valley Tan” that drew applause from visitors like Twain and Burton.<sup>28</sup> No IDs were needed then, and having a temple recommend was not necessarily a reason not to imbibe on occasion.<sup>29</sup>

Clearly, although Young preferred that the Saints not use these products, he did not take a hard line against them, nor, significantly, did he even mention the Word of Wisdom in this context or reprimand the Saints for not adhering to scripture.<sup>30</sup> In the making of alcoholic refreshment, as in everything else, LDS leaders set the example for members. Brigham Young, among his many commercial ventures, owned a turning mill on City Creek in downtown Salt Lake City to process apples from his own orchard.<sup>31</sup> Turning apples into cider was, in fact, typical of American practice before refrigeration. According to historian Michael Pollan,

Up until Prohibition, an apple grown in America was far less likely to be eaten than to wind up in a barrel of cider. (“Hard” cider is a twentieth-century term, redundant before then, since virtually all cider was hard until modern refrigeration allowed people to keep sweet cider sweet). . . . In rural areas, cider took the place not only of wine and beer but of coffee and tea, juice, and even water. Indeed, in many places, cider was consumed more freely than water, even by children, since it was arguably the healthier—because more sanitary—beverage. . . .

The reason people . . . wanted John Chapman [Johnny Appleseed] to stay and plant a nursery was the same reason he would soon be welcome in every cabin in Ohio: Johnny Appleseed was bringing the gift of alcohol to the frontier.<sup>32</sup>

So the first Mormon settlers preserved their fruit—dried it, put it up in jams and jellies, bottled it whole, turned it into booze, or just kept it in a dark cellar. We who raise fruit here today inherit, sometimes unwittingly, some of the wisdom they gained in the school of hard knocks.

When the Mormon pioneers first arrived in the Great Basin, their challenge was to determine how to make a living in an environment that was alien to all of them, as it was to nearly all white Americans. How to do this was something that had to be discovered by trial and error. There were no climate charts or geological data for determining what areas were optimal for growing food. Produce such as apples, which seem at first glance so utterly out

of place in this desert, turn out to be well-suited to parts of it, so much so that Utahns today take them for granted. But their presence in our life is the result of many trials for those early settlers. They are the last in a line of improbable events that start with the decision of the Mormons to move here, their perseverance in getting here and bringing the seeds of a new beginning with them, and their determination to make those seeds blossom.

In adjusting to their new environment and creating a blooming desert, the Mormons rediscovered and developed irrigation agriculture to a degree and level of expertise previously unknown in the New World. In the years since Brigham Young, the Church has parlayed its hard-won investments in agricultural know-how into modern agribusiness empires, academic dynasties of astonishing influence in fields such as agronomy and soil physics, and political influence in Western American water policy as administered by the U.S. Bureau of Reclamation.<sup>33</sup> Ironically, it was the Church's success as much as the invasion of Gentiles that set the stage for the destruction of Brigham Young's Great Basin kingdom and its orchards

For Brigham Young and his followers, the purpose of the move west was to find autonomy, and the purpose of the autonomy was to build the kingdom of God. Unlike mountain men, miners, and homesteaders, the Mormons migrated as a community with the intent of building an even more unique form of community in a land that no one else wanted. Here they would reinvent society and build a place that God himself would be willing to inhabit. In the Mormon view, the heavenly Jerusalem cannot return to earth—earth, not outer space is viewed as the ultimate location for the kingdom of heaven—until there is an earthly city that is its match. As Moses 7:62–64 puts it:

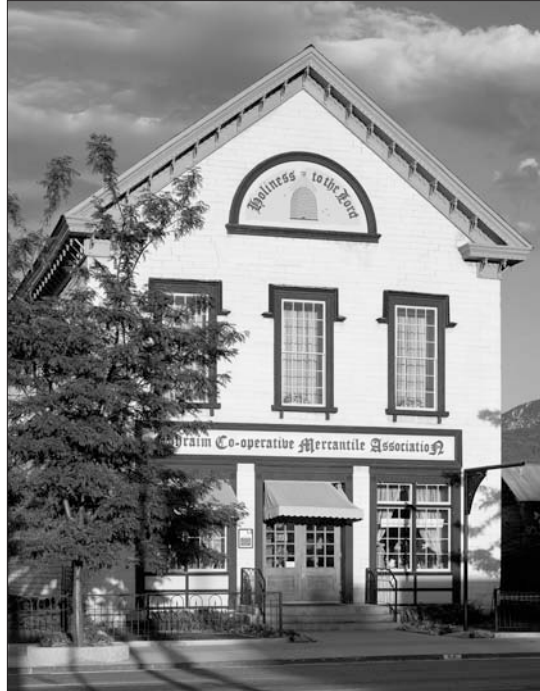
And righteousness will I send down out of heaven . . . and righteousness and truth will I cause to sweep the earth . . . to gather out mine elect . . . unto a place which I shall prepare, an Holy City . . . and it shall be called Zion. . . .

And the Lord said unto Enoch: Then shalt thou and all thy city meet them there . . . and we will fall upon their necks, and they shall fall upon our necks, and we will kiss each other;

And there shall be mine abode.

Enoch is the prophetic leader of a city that became so righteous

*Ephraim Co-operative  
Mercantile Association,  
Ephraim, Utah.  
Photo by Edwin  
Firmage Jr., 1999.*



that God removed it from the earth, keeping it for himself until such time as other people are ready to embrace it. This city—Zion—operates on principles entirely different from those of the present world. “And the Lord called his people Zion, because they were of one heart and one mind, and dwelt in righteousness; and there were no poor among them” (Moses 7:18).

Building this holy community required a total rethinking of how society worked. American society, for example, prized profit. Brigham Young rejected the profit motive altogether.<sup>34</sup> American society prized individuality, but Brigham Young preached community.<sup>35</sup> Perhaps no other factor was more important in the ultimate survival of the Mormon people than their sense of collective identity, a sense of belonging to a community so distinctive that it borders on ethnicity. Lowry Nelson, son of Mormon homesteaders in Ferron, Utah, and later professor of sociology at the University of Minnesota, wrote a pioneering study of the Mormon village, based on settlement records of towns such as Escalante, Ephraim, American Fork, and Cardston, in which he identifies at-

tributes of the typical early Mormon community. The following eight are perhaps the most crucial:<sup>36</sup>

1. Land in the new settlement was distributed equally by lot, with no preference being given on the basis of ecclesiastical or social rank.

2. Holdings were small, usually less than twenty-five acres, so that all members of the community could own land.

3. The Mormon pattern of settlement was unique in the West and especially unusual among farming communities because it distributed three types of land: (a) an in-town lot (typically 1.25 acres) for a residence, vegetable garden, and orchard; (b) about five acres outside the town for raising animals and grain. In Salt Lake City, this outlying agricultural area was known as the "Big Field"; and (c) common grazing land still farther beyond the town to which everyone in the community had rights.

This pattern of land use encouraged the development of tightly knit communities in which people associated with one another daily in town, a marked contrast to much of the frontier West where homes were located on separate farms or ranches, miles from each another and in which the town functioned largely as a market area with occasional religious and social gatherings and school for the children. The premise of fundamental equality among the residents of a Mormon town was taken at times to strange lengths. For example, in Ephraim, Utah, to insure equal access to harvesting hay on common land, residents mandated that no one could cut that hay before July 25. On that date, the town would hold a dance to which everyone was invited. Only afterward could people go out and stake a temporary "claim" to a portion of the commons. In this way, everyone literally started from the same point with equal odds of access to any part of the commons. Farmers were allowed to claim only what they could cut in one day. After that, the commons was thrown open so that anyone could take what they needed.<sup>37</sup>

4. Residents were jointly responsible for building and maintaining public works and buildings such as forts, roads, irrigation ditches, schools, and meetinghouses.

5. In larger towns, Brigham Young issued orders for the establishment of cooperative wholesale stores to provide a market for exchange. They were not conventional commercial stores in the



usual sense. Their intent was to prepare the Saints for the “United Order of Enoch,” a strongly communitarian effort. Charles Smith recorded in his diary on October 11, 1868, after attending an organizational meeting:

Bro A[mos] M[ilton] Musser and G[eorge] Q Cannon occupied the time. They spoke upon this matter of our trading with those who are not of us. He shewed the advantages from our cooperating putting our means together . . . This movement was intended to make us more united to bring us closer together, according to the pattern of the Gospel. Bro Cannon Said it was very evident that men were Seeking to get rich and build themselves up, and to form that distinction of class in society, which thing was an abomination in the sight of God. He referred to the Nephites shewing that when they began to get rich they Drew off in Classes and despised the poor. This matter to which our attention was now being called would bring about good results, and would prepare the minds of the people, to receive further those principles that pertained to the order of Enoch. . . . At the close of the meeting subscriptions were handed in to carry forward the movement of a cooperative Wholesale Store.<sup>38</sup>

6. Agriculture, which formed the basis for all Mormon communities, though it became in time a business, was first and foremost a matter of subsistence and self-sufficiency, an attitude that continued well into the twentieth century. Arvil Stark, former secretary of the Utah State Horticultural Society, observed in 1947, “In general, the commercial orchards are small, averaging less than 5 acres in size and the fruit crop is usually associated with other kinds of agriculture to make a diversified agriculture. In other words, farming in Utah is usually a way of life rather than the highly specialized business characteristic of some other areas.”<sup>39</sup>

7. In most cases, towns were not created helter-skelter by individuals seeking their own place to settle down. Instead, the Church would “call” people—that is, assign them, to settle an area to promote Mormon control of that region. Members of each “mission” were often chosen for specialized skills so that they collectively had the basis for self-sustaining communities. Personal empire building was subordinated to building the kingdom of God. Not infrequently, settlers called to one area would, a few years later, be called to move to another.

8. The United Order (or United Order of Enoch) was the high point of the Mormon communitarian experiment, a heroic, if

short-lived, attempt at true religious communalism. In this system, heads of households signed over their property to the Church, usually represented by the local bishop, and received back a “stewardship” on which they were to live. All surplus was distributed within the community. This form of communalism was never universally practiced, nor was it mandatory even in places where it was attempted. Nonetheless, the attempt itself indicates the existence of this community ideal in nineteenth-century Utah.<sup>40</sup>

Leonard Arrington describes how no detail was too mundane for consideration in Brigham Young’s United Order, because the order, as the truest manifestation of the gospel, encompassed all aspects of life, even the trivial, as it ennobled them by putting them in the context of the bigger objective toward which the Saints were striving.

Instead of having every woman getting up in the morning and fussing around a cookstove . . . for two or three or half a dozen persons, [Young] said, he would have a village dining hall a hundred feet long with a cooking room and bakery attached. This would mean that most of the women could spend their time profitably making bonnets, hats, and clothing, or working in factories. Confusion in the dining hall could be avoided by installing a system by which each person could telegraph his order to the kitchen, and this order would be conveyed to him by a little railway under the table. “And when they have all eaten, the dishes are piled together, slipped under the table, and run back to the ones who wash them.” . . . In order to remove the laborious burden of big family washings, he suggested they have cooperative laundries. These would not only relieve the women from drudgery, but would also “save the husbands from steamy walls, soap suds, and ill-temper.”

The community would eat together, pray together, and work together. . . . “Half the labor necessary to make the people moderately comfortable” under their present arrangements, he said, would make them “independently rich under this system. A society like this,” he concluded, “would never have to buy anything; they would always make and raise all they would eat, drink and wear.”<sup>41</sup>

Part beer hall, part chapel, Brigham’s dining room and its miniature railroad illustrate the degree to which he was willing to rethink every aspect of conventional life, especially when it came to the family. This vision of a Mormon communal utopia, though conceived with an entirely different purpose in mind, anticipates

the longer-lived, but also only partly successful, experiment of the Israeli kibbutz (literally, “collective”).

To these attributes of the Mormon village, I would add one more. Not unlike the kibbutzniks, but modeling themselves on a much older Palestinian paradigm, the Mormons were also bound to their *land* in a way that was, in theory at least and often in reality, quite different from that of other Americans. To begin with, Mormons viewed themselves as players in a sacred drama, in which the land and their relationship to it are defined by scriptural precedent. They thought of themselves quite literally as the children of Israel, descendants of the twelve tribes being gathered in at the end of time. To this day, Mormons receive patriarchal blessings in which they are told the tribe of Israel from which they descend. Their persecution in Illinois was necessary to separate these children of Israel from “the world” (the flesh pots of Egypt, etc.). Their journey westward was the analogue of Israel’s exodus, the Great Basin was their promised land, and Brigham Young their Moses. And here in the Great Basin, they would not only settle and at last enjoy freedom from persecution but would also build the kingdom of God. This was no mundane search for a home but a mission imposed on them by God. The city of the Saints—or rather, the cities of the Saints—were no ordinary settlements but rather outposts of Zion. Like the Israelites, the early Mormons believed that their occupation of this land was by divine concession and therefore subject at all times to God’s pleasure. Failure to live up to their part of the covenant with God would jeopardize their entitlement to the land.

But the sense that God had called them to settle here also had a more immediate justification, for, as I’ve noted, many were in fact called by their Church leaders to settle specific areas. And those who were not called to settle an area may have had reason, nonetheless, to regard their presence there as a sort of divine test. As a result, many original settlers and their descendants remained even when conditions deteriorated to the point of disaster. Describing the extraordinarily challenging years of the Dust Bowl in Utah’s marginal areas, Brian Q. Cannon writes:

Decades following his removal from the town of Widtsoe, one farmer recalled a promise made by Mormon apostle Melvin J.

Ballard to the community's residents. The valley would be a Garden of Eden if its inhabitants kept God's commandments and stayed out of debt, Ballard had prophesied. If they did not do so, it would be taken from them. Ballard's words had infused the land with sacred meaning, rendering the valley a symbolic link between the area's residents and God. Remembering that promise, the people clung to their land as long as they physically could. To move away was to admit spiritual as well as temporal failure. Although all but two families eventually moved away, some former residents of the area still remember that promise, speak of their valley reverently, make annual pilgrimages to it, and speculate that it may one day blossom.<sup>42</sup>

In these ways and in the equally radical attempt to redefine marriage, early Mormonism was the antithesis of what we would now call the American dream. While 1950s-style living is, of course, something Brigham could not have dreamed of, he did attack, and quite pointedly, the shopkeeper mentality that is the basis of modern consumer society. Brigham stigmatized them as generally a low class of people who put their faith in the power of the profit motive and the free market, all at the expense of the common good. "I never could, the poorest day I ever saw in my life, descend so low as to stand behind a counter. Taking that class of men as a whole, I think they are of extremely low caliber."<sup>43</sup> No sharper contrast can be imagined than that which existed between the Mormonism of the United Order period and its contemporaneous American counterpart, the Gilded Age. At the very point in time when capitalism and not-so-enlightened self-interest were transforming America into an industrial and commercial paradise (if that isn't a contradiction in terms), Brigham Young was preaching sermons such as the following:

Let the calicoes be on the shelves and rot, I would rather build buildings every day and burn them down at night, than have traders here communing with our enemies outside and keeping up a hell all the time and raising devils to keep it going. . . . We can have enough [hell] of our own, without their help. . . . We sincerely hope that the time is not far distant when the people will supply their own wants and manufacture their own supplies; then and not until then will we become independent of our enemies.<sup>44</sup>

Brigham's chief enemy was capitalism, and his kingdom would be its ultimate victim.

In no other place in the West did Europeans create such a leg-



*Class of 1935, Fruita School, Utah. Courtesy of Capitol Reef Natural History Association.*

acy of sustainable community. As my husband, Ed, is fond of saying, with only slight exaggeration, there are no Mormon ghost towns. The Mormons came to stay. They are the West's ultimate "stickers," as Stegner felicitously called them. In the years before World War II, even with the encroachments of capitalist America, Utah had achieved a high degree of the self-sufficiency that Brigham Young so earnestly sought. The state produced, for example, enough food of all types to meet its needs and more.<sup>45</sup> And despite being the second-driest state in the nation, it had developed water resources more than sufficient for its needs, without the help of the Bureau of Reclamation. Indeed, the bureau's efforts by comparison are a colossal failure. The Mormons actually accomplished what the bureau never did, despite its mandate to do so: reclamation of desert lands for small-scale farmers. Writing in 1947, John A. Widtsoe, Mormonism's great exponent of desert agriculture, expressed the opinion that "the people who have descended from the pioneers still cherish the thought that the majority of the members of the Church are farmers and hope that it may ever be so. . . . The earnest belief in farming as the ce-

menting element in all social and economic progress is one of the major contributions to the world of the people who settled the Western American deserts.”<sup>46</sup>

That earnest belief died with Widtsoe. In the years following World War II and the transformation it wrought in America generally and Mormon Utah specifically, the self-sustaining garden paradise that Mormons built for themselves in preparation for the kingdom of God rapidly gave way to strip malls and urban sprawl distinguishable from those in the rest of America only in being entirely free of any notion of restraint. The tradition of home gardens and local agriculture has largely disappeared, as have the ward and stake farms that still existed in my childhood. Today, the trend is to put a large home on a small lot, not a small home in a big garden. We not only fail to preserve the hard-won knowledge of our predecessors but we do not even know what we have lost. Ironically and sadly, the orchards and gardens and knowledge of the early Mormon settlers are vanishing almost as completely as the native landscape and knowledge that they replaced in 1847.

According to the Bible, God instructed Israel, “When in the course of war you lay siege to a town . . . do not destroy its trees . . . for they provide you with food. . . . The trees of the field are not people that you should besiege them” (Deut. 20:19).<sup>47</sup> Even in the total war of the ancient world, self-interest, if not restraint before the sacred, dictated that you leave food sources intact unless your intent was, in fact, to render the land uninhabitable.<sup>48</sup> What contemporary Utahns, most of them descendants of Mormon settlers, have done and excused in the name of “growth” and “development” is something that their putative Israelite role models were commanded not to do even in all-out war: They’ve made war on the food-shed, *their* food-shed.

When the Mormons arrived in Utah, they began a permanent transformation of the land. They were not the first to do so. Native Americans had also been active in altering this land. Both groups adapted the land to their needs. But the native tribes appear to have done so with the most sustainable consequences. Despite having used the land for centuries, they left grass, forest, clean water, rich soil, and wildlife in abundance.<sup>49</sup> The Mormon settlement has had more mixed results. On the one hand, it has



given us pleasant and formerly self-sustaining towns and the miracle of desert fruit. On the other, it has given us urban sprawl and air pollution. Utah's Mormons have cut down the orchards themselves. And in Utah's West Desert, we have created a wasteland, for which, appropriately, we now find no other use but to store deadly waste, mostly other people's.

The path we Utahns are taking now is not the one blazed by Brigham Young, Parley P. Pratt, and John A. Widtsoe. Ours is the heedlessness of take-no-prisoners American capitalism. It's a path that no land can sustain, least of all the fragile desert. Although I no longer count myself an active member of the fold, I still long for Zion. I am a daughter of Jerusalem exiled in Babylon.

As I contemplate our dying desert and our disappearing orchards, I recall the poem of Paul Verlaine:

This is the feast of bread, the feast of wheat,  
in these spots seen again, beloved of old!  
Man and nature are busy where the light beats  
so white it turns the shadows rosy gold.

The yellow straw sinks to the whistling flight  
of scythes whose lightning smites, gleams, strikes again.  
Teeming with labor, all the distant plain  
changes each instant, now austere, now bright.

All is breathless straining and a stir  
under the sun, calm ripener of wheat,  
impassive and eternal laborer  
who plumps the sour grapes and makes them sweet.

Work, old sun, work for the bread and wine,  
feed man with the milk of earth, and pour  
the honest glass in which laughs the divine  
oblivion. Harvesters, vintners, this is your hour!

From the wine's fire and the virtue of the grain,  
from the fruit of man's strength spread to earth's far posts,  
God reaps, gathers the vintage, and ordains  
to his ends Blood for the chalice, Flesh for the host!<sup>50</sup>

My apple trees have taught me that there is indeed something sacramental about working the land, something that is ultimately and permanently meaningful, something that opens a gateway to transcendence. To work the land is a sacrament of continuity and caring that links past, present, and future. It's a sacrament in part because it is the preservation of a living link to ancestors. Farming, even if it's just the backyard variety that I currently practice, is a kind of ancestor worship. In it, we use know-how such as grafting that has been handed down, along with other sacred knowledge—religion and agriculture go hand in hand—from parents to children since the Chalcolithic, when the first olives, vines, and fruit trees were domesticated. In many cases, the very seeds we plant and the twigs we graft are hand-me-downs, descendants of descendants of the first tamed natives.

Working the land is also a sacrament because it is a living link, a potentially eternal link, to offspring, an expression of hope that our children will know more of the pleasure and independence that comes from raising their own food and that they will know less of that desperate dependence that is the hallmark of today's global so-called village. In the Middle East, people say that you plant an olive tree for your old age or for your children. Our family's fruit trees aren't an investment in the future on that scale; but since my husband and I are now fifty-one, they are an investment in our children nonetheless.

Finally, our work with the land, which includes our taking care of it as well as the reverse, is sacred because the land itself is sacred. It's the source of life, Earth Mother, matrix of mysteries. It takes perhaps a millennium for Mother Earth to give birth to a single inch of topsoil. In spite of our science, we can't make soil any more than we can manufacture babies. Soil must be grown just like babies. And the real mother in each case is Earth. The real mother is Life. We women are just her handmaids, like Bilhah and Zilpah, giving birth to children who belong to another, nurturing seeds that came from our parents, who received them from their parents from time out of mind. In any economy of true value, the Earth, like our children, wouldn't be for sale at any price. Like our children, it would be something we nurture and are nurtured by. Next to our genes, of all the things passed—preserved—from generation to generation, good earth in which to grow our food is the

most precious. My ancestors understood the life-giving power of earth. I'm beginning to.

## Part II

### **Life on the Plateau: Of Cows and Corn, Wasting a Desert Once in Bloom**

Settlement of the Colorado Plateau took place during the late 1870s and early 1880s. This was the last area of present-day Utah to be settled by Mormon pioneers due to remote and almost impenetrable geography, Indian presence, and questionable agricultural potential. Until the 1870s, the Mormons had had to insure that the settlement core—what is now the I-15 and Highway 89 corridors—was secure. By the mid-1870s, however, concerns had begun to arise about non-Mormon encroachment from mining and ranching operations coming out of Colorado. The Mormons therefore decided to get a jump on the competition.

As noted, Fruita was established in 1880, and was part of expansion throughout the area. Escalante was founded in 1876, Green River in 1878, Hanksville in 1882, Loa in 1878, Bicknell in 1875, and Bluff in 1880, to name just a few.<sup>51</sup>

Bluff, deep in the southeast corner of Utah, is the most remote of these settlements. With 250 men, women, and children, eighty wagons, and a thousand head of cattle, they set off in September 1879 from Parowan on a largely unexplored “shortcut” to their destination of Montezuma Creek. They estimated that the journey would take six weeks. When they reached the Colorado River just above the confluence with the San Juan in late November 1879, only halfway to their goal, they met the first of several epic obstacles. The only way forward was down a 1,200-foot-high gap in the cliff, the “Hole in the Rock.” It took them six weeks to cut their way down through a forty-foot drop at the top of the gap, move huge boulders, level high spots, fill depressions, and widen crevice walls. At the bottom, they were obliged to build a section of wooden road supported by stakes fitted into holes drilled in the narrow ledge. Once down this obstacle, the settlers had to cross the 300-foot-wide river and travel more than a hundred miles over virgin red rock until they reached the site of Bluff on April 6, 1880, ten grueling weeks after leaving Hole in the Rock. At this

point they stopped, as, in the words of one of the party, “We were too tired to go on and it was too far to go back.”

They had just traveled by wagon through some of the most difficult terrain in North America. Many inclines were so steep that seven spans of horses were needed to pull the heavily laden wagons up. Remarkably, during the six-month journey, two babies were born and no one died.<sup>52</sup> It is a story of exceptional tenacity.

Unfortunately, as was the case in several Mormon settlements, it is not a story with an entirely happy ending. In establishing their new home on the San Juan, these hardy pioneers cut down the native cottonwoods to build homes, fences, and barns. Their large cattle herd destroyed much of the natural riverbank and the willows lining it. As a result, when spring floods came, they wiped out irrigation canals, ditches, and crops. This pattern happened repeatedly, and eventually many settlers moved north out of the flood plain, to create the towns of Blanding and Monticello.

The consequences of settlement—and above all of intensive grazing that made life in Bluff difficult—were not limited to Bluff. Flooding was a constant problem for settlers along the Virgin River, for example. Here, they cut cottonwoods just to make ash for soap!<sup>53</sup> Along with the degradation of riparian areas, another early and ubiquitous result of Mormon settlement was the destruction of the area’s vast grass prairie. Few, even native, Utahns know that tall-grass prairie once covered the intermontane valleys of northern and western Utah, the piedmont and mesas of the Arizona Strip, and much of the flatland of eastern Utah where today one hardly supposes prairie could have existed.

An especially startling example of the transformation of Utah landscape that occurred after the Mormons arrived is the little settlement of Pipe Springs, south of Kanab, where Mormons established the unlikeliest of desert operations, a dairy farm. They chose to build a dairy at Pipe Springs in what is now a sparse scrubland of piñon, juniper, and sage. But when they first arrived, it was, in the words of a park ranger familiar with the pioneer sources, a prairie of “grass belly high to a horse.”<sup>54</sup>

So, here they built their dairy mission and tithing office—the Mormon equivalent of a commercial center and trading post—in 1863. Within less than twenty years, the grass was gone, and the

area began to take on its present look of rocky juniper desert. The grassland at Pipe Springs was even more short-lived than in most other places in Utah, as Texas cattle barons moved in in the late 1870s, replacing the Mormons and overgrazing the ecosystem to complete destruction.<sup>55</sup>

The Colorado Plateau was far from the only place to suffer from overgrazing. Virtually *none* of Utah's grassland survived the nineteenth century. In Mountain Meadows, another grassy Utah paradise, notable now only for the human tragedy that occurred there in 1857, but known to early travelers as one of the prettiest and most welcome stops on the journey through Utah, the prairie also lasted just twenty years after settlement. John C. Frémont wrote the first description of the area in 1842: "We found here an extensive mountain meadow, rich in bunch grass, and fresh with numerous springs of clear water, all refreshing and delightful to look upon."<sup>56</sup>

In the valleys, virtually nothing "native" survived. Utah's mountains, which were used as summer range for cattle and sheep, were also heavily overgrazed, and the resulting damage in this case was not restricted to the range. Towns up and down the Wasatch Front experienced floods from mountainsides whose ground cover had been obliterated. Local water supplies were also fouled by feces and carcasses, leading one resident of Cache Valley to say that he would drink whiskey in the future for lack of decent drinking water.<sup>57</sup> Damage to the range and its downstream effects eventually moved locals to join with national conservation advocates in calling for the creation of federally managed forests. Parley P. Pratt described the area as it appeared in 1851:

This little mountain paradise was . . . altogether the most beautiful place in all the route. Some thousand or fifteen hundred acres of bottom, or meadow lands were spread out before us like a green carpet richly clothed with a variety of grasses, and possessing a soil both black, rich and quick—being a mixture of sand, gravel and clayey loam. . . . It was everywhere moistened with springs and would produce potatoes, vegetables and small grains in abundance without watering. The surrounding hills were abrupt, but rounded off, presenting a variety of beautiful landscapes, and everywhere richly clothed with the choicest kind of bunch grass and bordered in their higher eminences with cedar and nut pine sufficient for fuel.<sup>58</sup>



*Pioneer wagon, Capitol Reef National Park. Photo by Edwin Firmage Jr., 2000.*

Even though damage was done by pioneer companies such as the Baker-Fancher party traveling to California, whose train included 400 head of cattle, it wasn't until after permanent settlement began in 1862 that this lush meadow was destroyed. By 1884, the meadow had largely disappeared. In that year, a massive flash flood swept through the overgrazed valley and created a gully that drained it permanently. Of the valley at the time of John D. Lee's execution there on March 23, 1877, Bancroft, referencing Lee's remarks to one of his guards, says aptly, "The luxuriant herbage that clothed it twenty years before had disappeared; the springs were dry and wasted, and now there was neither grass nor any green thing save here and there a copse of sage brush or scrub oak that served but to make its desolation still more desolate."<sup>59</sup>

In valley after valley, prairie niche after prairie niche, the story is repeated. An area is overgrazed, stream and river beds are trampled, river bottom cottonwoods and willows damaged. Drought and flood finish off what the cows and sheep have left behind.

White people were not the first to inhabit this area. Valleys such as Fruita and Mountain Meadows were used by native tribes as well. They too changed the landscape, and not always for good. But they did not usually wipe out entire ecosystems. Many were enhanced through the stewardship of native tribes.<sup>60</sup>





*Anasazi cliff dwelling, San Juan River, San Juan County, Utah. Photo by Carrol Firmage, 2008.*

The difference between the two patterns of settlement was brought home to me when I visited an ancient cliff dwelling during a trip down the San Juan River with Terry Tempest Williams's "Ecology of Residency" class in June 2008. The inhabitants had constructed their homes out of adobe, not wood. They built them high in the cliff for protection not only from other people but also from floods. The cultivated land, where they grew corn, beans, and squash, was in the river plain; but they had left intact the natural barriers to flooding—the river banks, the trees, and other native plants. Most importantly, these people did not have cattle and sheep.

Shortly after this trip, I was exploring other Anasazi ruins on Cedar Mesa west of Bluff with my family. Here we came across a small home built deftly into the cliff. At first glance, it looked like part of the canyon wall. Inside, we found prehistoric corncobs, about an eighth the size of the corn we grew in our backyard. That's probably about the difference in our overall ecological footprint. We pondered the life that those people led long ago, a life very different from ours. We thought also of the similarities, the most important being that we and they live in the desert and love it. The question we found ourselves asking, then as now, is how we can live sustainably and in harmony with this fragile environment.

There's a dark side to Mormon settlement in Utah. Despite real success in irrigation agriculture, Mormon practice has always been to pack too many people into too little land with too little

management in areas that require a completely different mode of use. John Wesley Powell saw at once that patterns of land use that had existed in the East would not work in the arid West.<sup>61</sup> The standard homestead of 160 acres was, in Powell's view, virtually guaranteed to fail. In areas that had abundant water, 160 acres was more than a family needed to sustain itself. In areas where water was scarce, thousands of acres might be needed. Powell therefore suggested that land be tied to water. If a fixed allocation of 160 acres wouldn't work, neither would the Mormon five, although it might meet the needs of the best-watered few on the Wasatch Front. The history of the West since white settlement shows the results of ignoring Powell. And this is as true of the Mormon experience as of any other.

One hears much of how the desert was made to "blossom as the rose." But what of the barren waste that once was a desert in bloom?<sup>62</sup> "Truly," as Walter Cottam laments, "the fathers' sins against the land are visited upon their children for generations to come, especially when the children continue in the same transgressions."<sup>63</sup>

#### Notes

1. Wendell J. Berry, "At a Country Funeral," in his *Selected Poems* (Washington D.C.: Counterpoint, 1998), 92.

2. For a summary of some early efforts, see [http://web.me.com/efirmage/Supporting\\_Documents/Writing\\_on\\_the\\_Environment\\_files/Toward%20Sustainability.pdf](http://web.me.com/efirmage/Supporting_Documents/Writing_on_the_Environment_files/Toward%20Sustainability.pdf).

3. John Alton Peterson, *Utah's Blackhawk War* (Salt Lake City: University of Utah, 1998).

4. George E. Davidson, *Red Rock Eden: The Story of Fruita* (Capitol Reef, Utah: Capitol Reef Natural History Association, 1986), 18.

5. *Ibid.*

6. See Capitol Reef National Park website: <http://www.nps.gov/care/historyculture/orchardscms.htm> (accessed March 6, 2009).

7. Davidson, *Red Rock Eden*, 22.

8. See "Spring and Fall Freeze Probabilities," links at Western Regional Climate Center website, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ut3046> (accessed January 14, 2009). Loa's probabilities are <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ut5148> (accessed January 14, 2009).

9. See Brigham City probabilities: <http://www.wrcc.dri.edu/cgi-bin/>

cliMAIN.pl?ut0924, and Corinne, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ut1731>. At least two other pairs of Utah towns (Richmond/Trenton and Oak City/Delta) also exhibit significantly different growing seasons despite virtually identical locations, except for location being on and off the valley bench. Those few feet in altitude make all the difference in agriculture.

10. [www.bcarea.chamber.com/pages/peach-days-schedule](http://www.bcarea.chamber.com/pages/peach-days-schedule) (accessed April 30, 2010).

11. Heber C. Kimball, December 27, 1857, *Journal of Discourses*, 26 vols. (London and Liverpool: LDS Booksellers Depot, 1855–86), 6:186, 188.

12. In Toquerville, settled in 1861, fruit quickly turned out to be the main crop. Here early residents were able to grow grapes, peaches, and even figs of excellent quality. Andrew Karl Larson, *"I Was Called to Dixie": The Virgin River Basin, Unique Experiences in Mormon Pioneering* (Salt Lake City: Deseret News Press, 1961), 33. By 1866, one third of Toquerville's total acreage under cultivation was in orchards and vineyards. Just to the west in Santa Clara, settlers grew apples, apricots, nectarines, plums, pears, quinces, almonds, figs, English walnuts, gooseberries, currants, and three varieties of grapes: Catawba, Esebella, and California. In the fall of 1861, just six years after planting, the town produced 1,000 bushels of peaches. *Ibid.*, 43. Success with a few products such as oranges, olives, and black pepper remained elusive.

13. Clarence Ashton, "Recent Developments in Utah County's Fruit Industry and Its Future Possibilities" in *Utah Fruit Tree Survey 1965*, edited by Eleanor Bishop (Salt Lake City: Utah State Department of Agriculture, 1965), 28. Ashton was professor of horticulture at BYU.

14. Sam Edgecomb, quoted in *ibid.*, 28.

15. Anson B. Call, "Some History of Utah Horticulture" in *Utah Fruit Tree Survey 1965*, edited by Eleanor Bishop (Salt Lake City: Utah State Department of Agriculture, 1965), 51. No proper study of the Mormon cricket has been done, but there is a fascinating work on its cousin, the Rocky Mountain locust: Jeffrey Lockwood, *Locust: The Devastating Rise and Mysterious Disappearance of the Insect That Shaped the American Frontier* (New York: Basic Books, 2004).

16. Call, "Some History of Utah Horticulture," 51.

17. Issues of *Intermountain Horticulturist* (1890–91), a short-lived, but fascinating publication, in Special Collections, Marriott Library, University of Utah, Salt Lake City.

18. Mark Twain, *Roughing It* (1860), available in Project Gutenberg, <http://www.gutenberg.org/files/3177/3177.txt> (accessed April 30, 2010).

19. Sir Richard F. Burton, *City of the Saints* (1862 American edition; rpt., Niwot: University Press of Colorado, 1984), 269–70.

20. Call, “Some History of Utah Horticulture,” 48–66.

21. Alton R. Larson, Agricultural Statistician at large, reports figures by county in Bishop, *Utah Fruit Tree Survey, 1965*, 5–25. The breakdown of the figures by county and city is exactly along the lines one would predict on the basis of the climate data noted above. Thus, in 1965, Box Elder County, consisting chiefly of the three bench cities—Brigham City, Perry, and Willard—counted 208,566 trees, while all of Beaver County, located at 6,000 feet or more, had a mere 1,940. Utah County had 682,677, with Orem alone accounting for 223,302, while Cedar City, at 5,846 feet, had 3,330. In the north, Cache County, which is at much the same elevation as Box Elder County but which enjoys a much shorter growing season due to its different geography, had just 26,638. Outside the Wasatch Front and southern Utah, most counties had no more than a few thousand trees.

22. Donna Toland Smart, ed., *Mormon Midwife: The 1846–1888 Diaries of Patty Bartlett Sessions* (Logan: Utah State University, 1997), 220, 249, 260, 261, 270. The scope of this activity can be judged from Heber C. Kimball, *Journal of Discourses*, 21:186: “Do you think I have got any dried peaches? Yes, I have got enough to last me two years, and I presume that brother Brigham has, and a great many others” (186). To put away fruit on this scale was often the work not just of individual families but of the community. For peach preserving, “men made scaffolds for drying the peaches at certain propitious places about the town. A crowd of young people [would gather] at one of the scaffolds to set out peaches, until an entire crop of peaches had been pitted and set out to dry. Various races were run to see who could cut and set out the most peaches in a given time, and, as often as not, the winner of such a race was permitted to kiss all the young ladies present.” William A. Wilson, “The Folklore of Dixie—Past and Present,” *Utah Historical Quarterly* 74, no. 3 (Summer 2006): 206. In their peach parties, the Mormons were doing what close-knit communities around America had done for decades, the fruit equivalent of a barn raising. For example, St. Jean de Crèvecoeur, a French settler in New York at the end of the eighteenth century, wrote that for half of the year, supper for him and his wife consisted of apple pie made from dried apples put up earlier in the year in slicing and drying parties that might involve a whole neighborhood of women. Quoted in Alice A. Martin, *All about Apples* (Boston: Houghton Mifflin, 1976), 19.

23. The famous Mason jar, patented in 1858, was still made by hand, [en.wikipedia.org/wiki/Mason\\_jar](http://en.wikipedia.org/wiki/Mason_jar). The Ball jar, the first to be machine-produced on a large scale, appeared in 1884, [en.wikipedia.org/wiki/](http://en.wikipedia.org/wiki/)

Ball\_Corp. The *Ball Blue Book*, which is still the Bible of home canning, debuted in 1909. Ball's principal competition, Kerr Glass Manufacturing, was founded in 1903 ([www.pickyourrown.org/canningjars.htm](http://www.pickyourrown.org/canningjars.htm) (all accessed May 2, 2010)).

24. Burton, *City of the Saints*, 320, notes that sugar, which cost 6 cents a pound "in the United States" sold for 37½ to 45 cents in Utah. Sessions, *Mormon Midwife*, 288, recorded on September 2, 1861, buying twenty-five pounds of sugar for eight dollars (32 cents a pound) shortly before she began putting up preserves.

25. Pectin, a natural fiber that gives fresh fruit firmness and helps to bind the water that makes fruit juicy, was chemically isolated in 1825 by Henri Braconnot, <http://en.wikipedia.org/wiki/Pectin> and [http://en.wikipedia.org/wiki/Henri\\_Braconnot](http://en.wikipedia.org/wiki/Henri_Braconnot) (accessed May 2, 2010). However, it had been understood since the beginning of jam- and jelly-making in the eighteenth century that certain fruits such as apples, currants, and quinces, which were, as it turned out, rich in pectin, helped to give preserves body. Accordingly, these fruits were added to strawberries and raspberries, fruits that are low in pectin and therefore reluctant to set without assistance. [http://www.ippa.info/history\\_of\\_pectin.htm](http://www.ippa.info/history_of_pectin.htm) (accessed May 2, 2010).

26. Lydia Child, *The American Frugal Housewife*, 12th ed. (Boston: Carter, Hendee, and Co., 1833), 81, gave the rule for preserves as a pound of sugar for a pound of fruit, a proportion that seems high by our standards. My mother-in-law (an avid canner) and I, for example, use about two-thirds to one cup of sugar for six to eight cups of fruit. Still, because sugar had to be paid for in cash and freighted across the plains until the railroad was completed in 1869, it was a luxury. Another substantial expense was that of the glass container until mass-produced bottles began to appear at the end of the nineteenth century. Thus, Child cautions her readers to save vials and bottles (14) but commends them for bottling cider or beer, not food.

27. The absence of ready-made supplies for canning did not, of course, stop people from putting up, or trying to put up, a few jars of preserves. Early Utahns used glazed pottery in which to store their fruit. An early potter was John Eardley, a Mormon immigrant from England. Eardley came to the United States in 1854 and worked for a while in Ohio, New Jersey, and Massachusetts. In Boston, he met missionary George Q. Cannon, who urged him to come to Salt Lake City, which he did in 1862. John lost no time in trying out the local clays and glazes. After seeing his work, Cannon urged Eardley to take his wares to Brigham Young, who was so impressed that he assumed they were not made locally. After learning that Eardley had been in Salt Lake City only three

weeks, Young exclaimed, "Go to work and make some more. You have done more in three weeks than the Church did in three years and it cost us \$17,000." Larson, *"I Was Called to Dixie,"* 273. Eardley was called to St. George in 1868 to provide vessels for the region using the local clays to produce artistic yet functional pieces. As a boy in Washington, Utah, Karl Larson, born in 1899, remembered watching his mother bottle fruit in Eardley jars. She preserved the fruit by boiling it with molasses (later sugar), poured it scalding hot into jars, sealed them with thick brown paper, then covered the paper with cloth which was tied around the jar's neck. The containers were stored in the fruit cellar until late winter or spring. By then, a layer of mold would have formed on top of the fruit but could be carefully removed, leaving the rest of the contents edible.

28. According to Burton, *City of the Saints*, 320, "This Valley Tan, being generally pure, is better than the alcohol one part water and one part, colored with burnt sugar and flavored with green tea, which is sold under the name of Cognac." Twain, *Roughing It*, <http://www.gutenberg.org/files/3177/3177.txt> (accessed May 10, 2010), wrote: "Valley tan (or, at least, one form of valley tan) is a kind of whisky, or first cousin to it; is of Mormon invention and manufactured only in Utah. Tradition says it is made of (imported) fire and brimstone. If I remember rightly no public drinking saloons were allowed in the kingdom by Brigham Young, and no private drinking permitted among the faithful, except they confined themselves to 'valley tan'." Ken Sanders, "A Thirst in the Desert" *Salt Lake Magazine*, December 2008, [www.saltlakemagazine.com/Salt-Lake-Magazine/December-2008/A-thirst-in-the-desert](http://www.saltlakemagazine.com/Salt-Lake-Magazine/December-2008/A-thirst-in-the-desert) (accessed May 10, 2010), notes that Valley Tan was created by C. E. Johnson, a pharmacist, who also developed Valley Tan Remedy, a patented medicine. Alcohol was the main ingredient of this remedy, and it was supposedly a favorite cure of Brigham Young. Both of these products were sold, along with beer, wine, and other hard liquors at ZCMI, which had its own label.

29. Abundant sources document that adherence to the Word of Wisdom, a revelation to Joseph Smith which includes the proscription of alcohol and tobacco and which is a defining characteristic of Mormon life, was often observed in the breach until the early twentieth century. Brigham Young ordered settlers in Utah's Dixie to "cheerfully contribute their efforts to supply the Territory with cotton, sugar, grapes, tobacco, figs, almonds, olive oil, and such other useful articles as the Lord has given us the places for garden spots in the south to produce." Young, Letter to Orson Hyde, October 13, 1861, quoted in Leonard J. Arrington, *Great Basin Kingdom: An Economic History of the Latter-day Saints, 1830-1900* (1958; rpt., Lincoln: University of Nebraska Press, 1966), 216. Mor-



mon vineyards in southern Utah produced 3,000 gallons of high-quality wines and brandies per year, an industry that lasted until Church leaders ordered the vines pulled in the St. George area in the late nineteenth century due to too much success. *Ibid.*, 222. This ruling coincided with the 1892 instructions to consistently use water rather than wine for the Mormon “sacrament” or eucharist. Nels Anderson, *Desert Saints: The Mormon Frontier in Utah* (Chicago: University of Chicago, 1966), 446 note 11; see also his brief description of southern Utah’s wine industry (373–74). Heber C. Kimball, December 27, 1857, *Journal of Discourses*, 6:187, commented: “We dedicate and consecrate the wine or water that we partake of in the sacrament.”

Utah Mormons followed much the same trajectory in their use of tea and tobacco. Eighteen years after reaching the Salt Lake Valley and four years before the completion of the transcontinental railroad, Brigham Young, *Journal of Discourses*: 10:226–27, remarked, “This community has not yet concluded to entirely dispense with the use of tobacco, and great quantities have been imported into our Territory. The silver and gold which we have paid out for this article alone, since we first came into Utah, would have built several extensive cotton and woolen factories and filled them with machinery. . . . Instead of buying it in a foreign market and importing it over a thousand miles, why not raise it in our own country or do without it? True principles of domestic and political economy would suggest the production at home of every article of home consumption for herein lies the basis of wealth and independence for any people. . . . Tea is in great demand in Utah and anything under that name sells readily at an extravagant price. This article opens a wide drain for the escape of much of our circulating medium. . . . Tea can be produced in this Territory in sufficient quantities for home consumption. . . . If we do not raise it, I would suggest that we do without it.” Two years later, Young announced that he would prefer that the Saints not spend money on tea and tobacco and instead put it towards the Perpetual Emigrating Fund. *Journal History of the Church of Jesus Christ of Latter-day Saints* (chronological scrapbook of typed entries and newspaper clippings, 1830–present), April 1, 1867, LDS Church History Library.

30. For a brief survey of the Word of Wisdom’s migration from counsel to commandment, see *Dialogue: A Journal of Mormon Thought* 14, no. 3 (Fall 1981): (1) Lester E. Bush Jr., “The Word of Wisdom in Early Nineteenth-Century Perspective,” 47–65; (2) Robert J. McCue, “Did the Word of Wisdom Become a Commandment in 1851,” 66–77; and (3) Thomas G. Alexander, “The Word of Wisdom: From Principle to Requirement,” 78–88.

31. Asa R. Bowthorpe, “Pioneer Sawmills and Canyons of Salt Lake

Valley,” 1961, typescript, 2, Special Collections, Marriott Library, University of Utah.

32. Michael Pollan, *The Botany of Desire: A Plant's-Eye View of the World* (New York: Random House, 2001), 21–22, 9. He continues, “Allowed to ferment for a few weeks, pressed apple juice yields a mildly alcoholic beverage with about half the strength of wine. For something stronger, the cider can then be distilled into brandy or simply frozen; the intensely alcoholic liquid that refuses to ice is called applejack. Hard cider frozen to thirty degrees below zero yields an applejack of 66 proof” (22). Fearing the loss of revenue as boozier uses of the apple were curtailed, growers in the early twentieth century came up with “an apple a day keeps the doctor away.” In fact, what it kept away was the bogeyman of temperance. I might also note here that other fruits might be stored in fermented form. Lydia Child, *The American Frugal Housewife*, 86, recommends beer as “a good family drink” and making currant wine at home (86). Sessions, *Mormon Midwife*, 279, made currant wine in Davis County, Utah.

33. Mormons, who quickly became the country’s experts in irrigation, naturally assumed senior roles in the Reclamation Service, later U.S. Bureau of Reclamation, when it was formed in 1902. Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* (New York: Penguin, 1993), 2. Among early bureau strategists was John A. Widtsoe, who had come to Utah as an eleven-year-old convert from Norway. After working his way through school in Utah, Widtsoe studied at Harvard University, then the University of Göttingen, Germany, where he received a Ph.D in chemistry (1899). In Utah, he directed Utah State University’s Agricultural Experiment Station from 1900 to 1905, then taught agriculture at Brigham Young University, where he was instrumental in founding the College of Biology and Agriculture. He served as president of the University of Utah (1915–21) until he became an LDS apostle. While an apostle, he served on an important strategy committee (the “Fact Finder’s Commission”) that created the vision for the renamed and reenergized Bureau of Reclamation (1923). In addition to theology, Widtsoe authored agricultural works: *Dry Farming: A System of Agriculture for Countries under a Low Rainfall* (New York: Macmillan, 1910), *Principles of Irrigation Practice* (New York: Macmillan, 1914), and *How the Desert Was Tamed* (Salt Lake City: Deseret Book, 1947). Widtsoe and his students had an astonishing impact on agronomy and soil science, not only in the United States, but internationally. Leonard J. Arrington and Davis Bitton, *The Mormon Experience: A History of the Latter-day Saints* (New York: Alfred A. Knopf, 1979), 310–19. On Mormon ranching, see Kent Larsen, “Biggest Rancher in the East,” *Mormon News*, January 3, 2002, <http://www.mormonstoday.com/020104/B1DeseretRnch01.US.FL.Orl.shtml> (accessed March 11, 2009).

These details underscore the degree to which agriculture and Mormonism became intertwined.

34. Brigham Young's ideas on economics were focused on the community rather than the individual. In his opinion, a businessman should work for the kingdom of God, not his own profit. This attitude was completely opposite from the emphasis on an individual's bottom line that was the focus of the rest of American society at the time. He stated his position in a December 1853 sermon: "In reality, we should only have one mess chest, one place of deposit, one storehouse, one 'pile,' and that is the kingdom of God upon the earth; it is the only store-house there is for Saints, it is the only 'pile,' the only safe place of deposit, the only place to invest our capital. . . . All who contend for an individual interest, a personal 'pile,' independent of the kingdom of God, will be destroyed. . . . The gold, the silver, the wheat, the fine flour, buffalo, the deer, and the cattle on a thousand hills, are all His, and He turns them whithersoever He will." Quoted in Arrington, *Great Basin Kingdom*, 130.

35. "Men may think . . . that we have a right to work for ourselves, but I say that we have no time to do that in the narrow, selfish sense." Brigham Young, *Journal of Discourses*, 14:101. For more on Brigham Young's decidedly un-American attitudes, see Hugh Nibley, "Educating the Saints," in *Nibley on the Timely and the Timeless* (Provo, Utah: BYU Religious Studies Center, 1978), 229–60.

36. Lowry Nelson, *The Mormon Village: A Pattern and Technique of Land Settlement* (Salt Lake City: University of Utah Press, 1952). Though these points may not apply to every town, such as Salt Lake City, for instance, they were generally followed.

37. *Ibid.*, 138–39.

38. Charles Smith, Diary, October 11, 1868, typescript, quoted in Arrington, *Great Basin Kingdom*, 298. Punctuation as per typescript.

39. Arvil Stark, "History of Growing Fruit in Utah," in *Utah: A Centennial History*, edited by Wain Sutton, 3 vols. (New York: Lewis Historical Publishing, 1949), 1:114.

40. An even briefer experiment with Mormon communalism in Missouri failed when the Saints were ejected from Jackson County in 1833. The standard account of this interesting experiment is Leonard J. Arrington, Feramorz Y. Fox, and Dean L. May, *Building the City of God: Community and Cooperation among the Mormons* (Salt Lake City: Deseret Book, 1976). The most literary treatment is Wallace Stegner, *Mormon Country* (Lincoln: University of Nebraska, 1942), one of the most evocative depictions of Mormon life before World War II. John Taylor, Brigham Young's successor, was not in favor of the united orders; and coupled with intensi-

fying federal pressure against polygamy after Young's death in 1877, these experiments soon withered.

41. Brigham Young, October 9, 1872, paraphrased and quoted in Arrington, *Great Basin Kingdom*, 326.

42. Brian Q. Cannon, "Struggle against Great Odds: Challenges in Utah's Marginal Agricultural Areas, 1925–1939," *Utah Historical Quarterly* 54, no. 4 (Fall 1986): 320.

43. *Journal of Discourses*, 9:189.

44. Brigham Young, Letter to Horace S. Eldredge, November 20, 1858, quoted in Arrington, *Great Basin Kingdom*, 196.

45. Herbert Howe Bancroft, *History of Utah* (1889; rpt., Salt Lake City: Bookcraft, 1964), 720.

46. Widtsoe, *How the Desert Was Tamed*, 18, 20.

47. New English Bible and most modern scholars: *lo' ka'adam 'ets hasadeh*.

48. As 2 Kings 3:19, 25 suggests, the Israelites probably practiced scorched-earth tactics, which were universal among states of the time. For Assyrian examples, see Daniel David Luckenbill, *Ancient Records of Assyria and Babylonia*, 2 vols. (Chicago: University of Chicago, 1926–27), 1:§§480, 620; 2:§§164, 165. For Egyptian examples, see James B. Pritchard, *Ancient Near Eastern Texts Relating to the Old Testament* (Princeton, N.J.: Princeton University Press, 1969), 228, 239, 240. Thus, the injunction in Deuteronomy looks more like an idealized prescription than a statement of law operative in historical Israel and is perhaps best viewed as a protest against contemporary behavior.

49. As environmental historians and biologists are increasingly aware, Native Americans sometimes changed their landscape in fundamental ways and employed unsustainable practices.

50. Paul Verlaine, "Sagesse XX," in *Paul Verlaine: Selected Poems*, translated by C. F. MacIntyre, bilingual edition (Berkeley: University of California, 1976), 169.

51. Tom Wharton, Brett Prettyman, and Craig Hansell. *One Day in . . .* (Salt Lake City: Salt Lake Tribune, n.d.), 89, 123, 125, 167, 25, 31.

52. David E. Miller, *Hole-in-the-Rock: An Epic in the Colonization of the Great American West* (1959; rpt., Salt Lake City: University of Utah Press, 1966).

53. "The people of the upper Virgin area, especially at Virgin, burnt the cottonwoods that grew in abundance along the river and on North Creek, gathered up the ashes, and took them north to trade for other necessities. Cottonwood ashes were used as a water-softener in laundering clothes and in making soft soap." Larson, "I Was Called to Dixie," 265–66.

54. My interview with Park Service personnel, August 2006.

55. Kathleen McKoy, *Pipe Spring: Culture at a Crossroads*, [http://www.nps.gov/pisp/historyculture/upload/PISP\\_adhi.pdf](http://www.nps.gov/pisp/historyculture/upload/PISP_adhi.pdf) (accessed March 9, 2009).

56. Quoted in Walter Cottam, "Man as a Biotic Factor Illustrated by Recent Floristic and Physiographic Changes at the Mountain Meadows, Washington County, Utah," *Ecology* 10, no. 4 (October 1929): 361–63. I've used Mountain Meadows and Pipe Springs as examples, but it's clear from inventories cited in the following articles that abundant grass was available in many of Utah's valleys and on mesas such as the Kaiparowits and Paria plateaus where today no grass is found and where one might suppose that grasses had never existed. See also George Stewart, W. P. Cottam, and Selar Hutchings, "Influence of Unrestricted Grazing on Northern Salt Desert Plant Associations in Western Utah," *Journal of Agricultural Research* 60 (1940): 289–316; George Stewart, "Historic Records Bearing on Agricultural and Grazing Ecology in Utah," *Journal of Forestry* 39 (1941): 362–75; W. P. Cottam and George Stewart, "Plant Succession as a Result of Grazing and of Meadow Desiccation by Erosion since Settlement in 1862," *Journal of Forestry* 38 no. 8, 1 August (1940): 613–26; Walter Cottam, *The Impact of Man on the Flora of the Bonneville Basin*, in *Advancement of Learning Series monographs* (Salt Lake City: University of Utah, February 20, 1961).

In addition to these examples of overgrazing, see A. J. Simmonds, *On the Big Range: A Centennial History of Cornish and Trenton, Cache County, Utah, 1870–1970* (Logan: Utah State University, 1970). The "Big Range," a former grassland of some 30,000 acres, extends for about fifteen miles from the big bend of the Bear River on the south to Weston Creek on the north, and from the Bear River on the east to the foothills on the west. In pre-settlement times, buffalo grass stood shoulder high in August. As late as 1876, a patch of sagebrush was unusual enough to merit mention by a surveying party. By 1888, following fifteen years of intensive grazing, the foothills and much of the flats were covered with sage. The prairie was exhausted, and the exceptionally cold winter of 1888 effectively ended the heyday of ranching on the Big Range. In its pre-Mormon splendor, this valley was a thriving ecosystem that included a multitude of grizzly bears and a vigorous Native American population, now known chiefly as the victims of the 1863 Bear River Massacre. The destruction of the former went hand in hand with the latter, both alike being "necessary" to give white settlers their *Lebensraum*.

57. Michael W. Johnson, "Whiskey or Water: A Brief History of the Cache National Forest," *Utah Historical Quarterly* 73, no. 4 (2005): 329–45. The quotation from the prospective whisky-drinker is on p. 330.

58. Parley P. Pratt, quoted in Cottam, "Man as a Biotic Factor," 361–62.

59. Bancroft, *History of Utah*, 569.

60. As much as 40 percent of the Amazon rain forest, for example, may be the result of human activity. See Charles C. Mann, *1491: New Revelations of the Americas before Columbus* (New York: Vintage, 2006), 337–44. The impact of human activity in the American West is no less astonishing. As early as 1951, Omer Stewart, "Burning and Natural Vegetation in the U.S.," *Geographical Review* 41, no. 2 (April 1951): 317, had suggested that the Great Plains were, to some degree and perhaps entirely, the result of the selective use of fire by native tribes. See also Omer Stewart, "Why the Great Plains Are Treeless," *Colorado Quarterly* 2 (1953): 40; and Henry T. Lewis and M. Kat Anderson, eds., *Forgotten Fires: Native Americans and the Transient Wilderness* (Norman: University of Oklahoma, 2003; published posthumously). Something similar may have happened here in Utah's valleys. Describing Utah Valley, Father Escalante says, "We found the grass of the plains where we came recently burned over and others burning, from which we inferred that these Indians had thought us Comanches, or other enemies; and as they had probably seen that we were bringing animals, it had been their intention to destroy the pasturage along our way." Quoted in Cottam, "Historic Records," 369. In fact, what they were witnessing was likely the regular burning of the prairie, an activity by which local tribes also cultivated the growth of grassland. The result was, as Father Escalante observed, that "there is everywhere good and abundant pasturage, and in some parts flax and hemp grown in such abundance that it seems to have been planted." *Ibid.*

61. Wallace Stegner, *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West* (1954; rpt., New York: Penguin, 1992), 203ff. For detailed discussions of the effects of the universal refusal to acknowledge the aridity and limitations of the West, see the articles by Cottam, Stewart, and Brian Cannon cited above. As Cannon so movingly illustrates, the consequences for human well-being have been almost as tragic as those for the land.

62. Larson, "I Was Called to Dixie," 248.

63. Walter Cottam, "Is Utah Sahara Bound?" Reynolds Lecture, University of Utah, February 19, 1947, *Bulletin of the University of Utah* 37 (1947): 21.