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Book Reviews

Front Cover: "Hoofed Locusts" is the frontispiece for the first edition of John Muir's *The Mountains of California,* (New York: The Century Co., 1894)

CORRECTION: In the summer 2003 issue of the *Nevada Historical Society Quarterly,* on the first page of James E. Caron's article "Washoe Mark Twain," a sentence begins "When he quit his reporter's job and left Virginia City in May of 1864 never again to return, . . ." The sentence should read "When he quit his reporter's job and left Virginia City in May of 1864 never again to make his home there, . . ." Clemens did return to Virginia City in 1866.

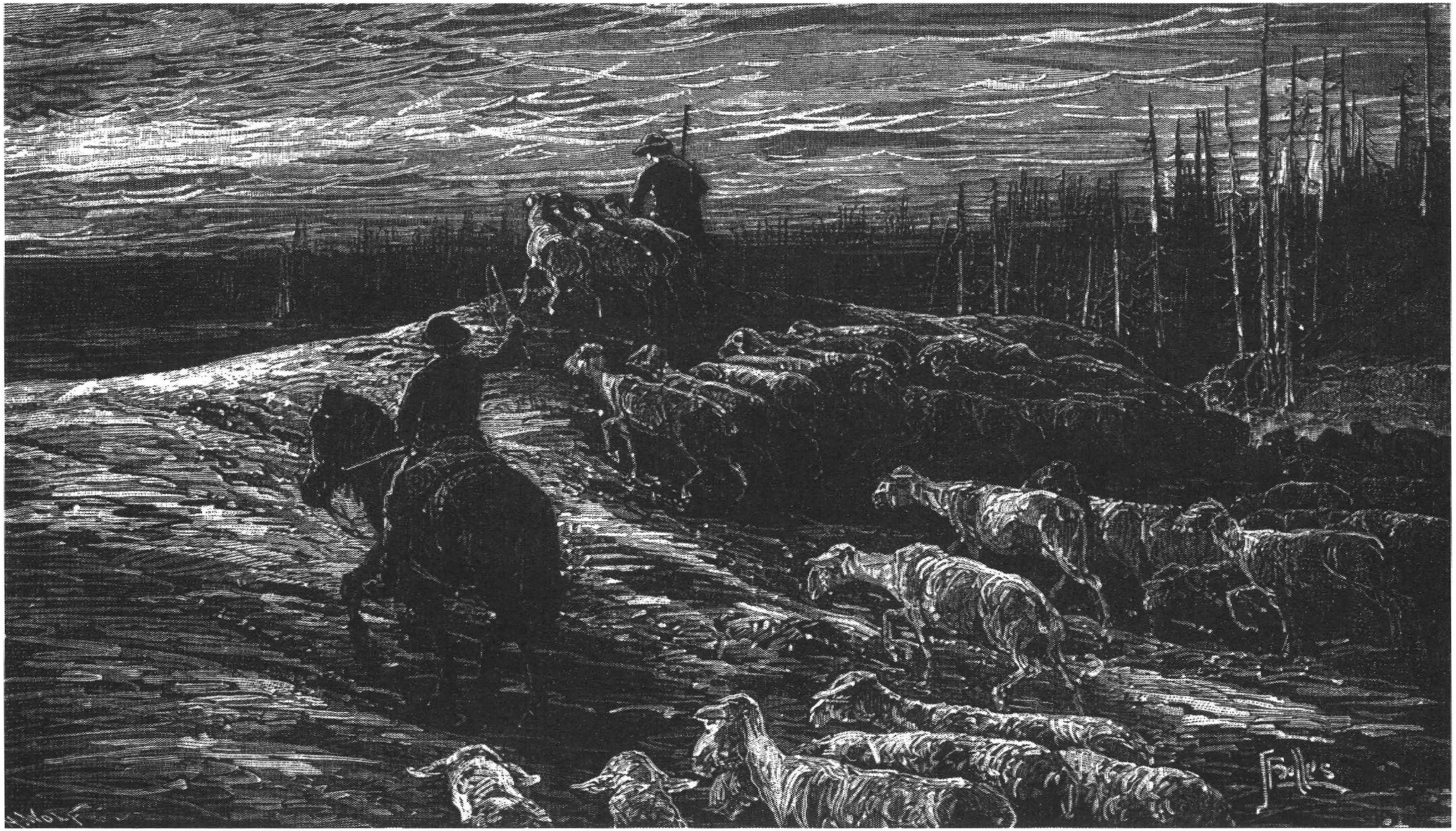
Putting "Hoofed Locusts" Out to Pasture

JAMES B. SNYDER

The history of domestic sheep in the Sierra Nevada has been capsulized in John Muir's epithet, "hoofed locusts." An unforgettable portrayal of the phrase was printed as the frontispiece to Muir's *The Mountains of California* (1894), an apocalyptic vision of sheep and their herders leaving dead forests and mountains in their wakes. The usual story is that they swarmed over the Sierra after the drought of 1864, bringing nearly uniform destruction to the range by overgrazing and burning, a plague stopped only by the establishment of national parks and forests and regulation of the uses of the public domain. The "hoofed locusts" catchphrase implies that national parks and forests were created at the peak of the sheep industry in California and that those reserves effectively saved the Sierra from sheep. Grazing by domestic sheep in the Sierra is now considered "a classic example" of "market failure, which requires collective action to remedy," the most vivid California example of "the tragedy of the commons."[1]

Muir's striking image has supplied mythic underpinnings, roots, and rationale for environmental movements and government agencies. The term "hoofed locusts" encompassed both animals and herders and clearly defined the best people and right ideas in opposition. Muir's use of the term for problems he saw in the Sierra also tended to focus understanding of problems on the local mountain range but with little relation to broader geographies, markets, or populations. Finally, by casting sheep and shepherds as the bad guys, the idea of "hoofed locusts" has obscured the actual conduct of sheep and sheepmen in the Sierra in the term's implied, oversimplified, and politically charged dualism. That there was overgrazing and other heavy impacts from sheep in the Sierra goes without saying, but it is equally and strangely true that we know little about those effects in our own day, and that whatever happened had more than a single cause.[2]

James B. Snyder has been a National Park Service historian for Yosemite National Park since 1989. His interest in sheep developed during three decades of work on trails and an eight-season survey of historic resources in Yosemite's backcountry.



"Hoofed Locusts" is the frontispiece for the first edition of John Muir's *The Mountain of California*, 1894.

Though the sheep industry in California was broken by the severe drought of 1877, the number of sheep in the state peaked in 1880 and then suffered a precipitous decline as hundreds of thousands of sheep were driven out of California through the Great Basin to the mountain states. At the same time, while there had been many, many sheep along the main corridors across the central and southern Sierra, the 1877 drought forced herders to range into the high Sierra far beyond those corridors in search of feed. It was therefore before the sheep industry in California had reached its peak, and before domestic sheep had reached much of the high Sierra, that John Muir had two defining experiences with them. In the fall of 1874 he returned to one of his favorite places, Shadow Lake (Merced Lake) above Yosemite Valley, to continue his glacial studies. There, "my worst fears were realized . . . and all the gardens and meadows were destroyed by a hoard of hoofed locusts, as if swept by a fire." This comment, not mentioned in his journals and published only in 1879, included the first printed use of the term "hoofed locusts," significantly linked with fire.[3]

The year after his Shadow Lake experience, Muir journeyed down the Sierra along the sequoia belt to study that remarkable tree. His fall 1875 journal of that trip mentions few sheep and no meadow impact between Yosemite and Kings River. On the Kaweah River, Muir visited Hyde's Mill, noting the sequoias wastefully destroyed for lumber there. He camped for a while in a grove between the forks of the Kaweah to watch a forest fire in the sequoias. Entranced yet repulsed, Muir camped in a burned-out log for several days to study the fire. In the Tule River basin, he met Indian sheepherders who replenished his food supplies. Then, on one of those great trans-Sierran corridors, he found that "Large flocks of sheep had swept the South Tule Basin bare of grass, and of course [my mule] Brownie had hard fare," returning to camp to nuzzle Muir and bray with a "horrid blare pervaded by pathetic, supplicatory tones of hunger. The horror of so grim a vision of weariness and want I shall not attempt to tell." He and Brownie quickly descended to find food. On finishing his sequoia studies, Muir headed to the Bay Area and friends to think about what he had seen.[4]

It was this second experience of the dangerously heavy autumn use of the Tule River corridor in 1875 that pushed Muir toward an intractable stand against sheep and, of course, fire. Muir's experiences with sheep at Merced Lake and in the Tule River sequoias consolidated his convictions about sheep, fire, and forest destruction, for which sequoias became the prime symbol of endangerment. He came away from those experiences sensing the causes of forest destruction yet unable immediately to explain them. Explanations do not appear in his journals but evolved slowly, as he thought about the problem, emerging in his published writings and congealed in the term "hoofed locusts." Muir used these two experiences as groundwork for his analysis of the effects of grazing on Sierran forests and as personal recollections easily translated into a political and popular message. Without reviewing his conclusions, he repeated these stories for the rest of his life.

While drought precipitated the decline of the sheep industry in California, it was not the only or even the main force at work. In addition to the effects of climate, development of the sheep industry was also a matter of land and markets. The Sierra was affected by forces working far beyond the range in an industry that varied widely in different areas.

Numbers of sheep in the nation were stable in the decade before the Civil War, though the number in the eastern states declined in the face of rising land values and feeding costs. Simultaneous with a westward shift of sheep was a change to mutton breeds after 1850. The sheep that were trailed across Nevada to California were brought mainly to feed burgeoning gold rush populations, but mutton breeds were also important for export and for growing urban demand in the East as well as for the better prices commanded for strong, coarse wool from mutton breeds like the merino. Textile manufacturing relied on these coarser wools, which became easier and cheaper to ship as transportation improved by water and rail.[5]

The gold rush use of sheep as meat on the hoof lasted but a short time as Californians, dissatisfied with the Spanish and Mexican stocks, worked to improve breeding for wool and meat. War conditions and loss of Southern Cotton brought a boom to the sheep industry in California. Investment in sheep on the West Coast was especially attractive because pasture was free on public land, and the climate required little or no shelter or special winter care. As a result, sheep were quite vulnerable to climatic cycles. Severe drought in 1864 caused great losses to the cattle industry. Losses of sheep were also high, but more sheep than cattle survived. Civil War markets combined with drought to cause many stockmen to shift from cattle to sheep. Increases of population along the coast, breakup of Spanish land grants for cultivation, and introduction of grain farming worked with drought to move centers for sheep to the great interior valleys, northern mountains, and southern California. Drought enhanced the European idea of seasonal migration for feed and pasture. By the late 1860s, migration from the San Joaquin and northern Sacramento valleys to graze the Sierra had become common. Sheep also seasonally grazed the Coast Range and swamp and delta lands along the interior rivers and Tulare Lake basins. Other sheep were using Nevada—"this great sheepwalk," as the California State Agricultural Society called it—for seasonal grazing.[6]

In the post-Civil War economy, price increases for other farm products contributed to a wholesale reduction of sheep in the eastern states. Large numbers of sheep were driven west in the hope of recouping some value from them. While many thousands of sheep were moving west, the great trails also reversed direction with increasing numbers of sheep moving east through the Great Basin to the mountain states. Drought in 1870 produced much fewer losses than the 1864 drought had, but it accelerated migration to higher mountains as well as to the tule lands. More sheepmen began to understand the value of owning land for production and storage of feed as well as for shelter.

Expansion of wheat farming led to the beginnings of stubble grazing by sheep rather than burning the stubble to manure the soil and increase future productivity. It was also clear that, just as in the East, pastoral enterprises like raising sheep and cattle were being pushed out by more intensive land uses so that sheepmen had to buy land or seek other range. The quality and quantity of California wool fluctuated downward when pasture was scarce and the sheep were in poor condition.[7]

Completion of the transcontinental railroad in 1869 accelerated the reverse drive east by providing long-distance transport from California to midwestern markets with access to Great Basin and Rocky Mountain pasture. In the 1870 drought, sheepmen moved quickly into the Great Basin, adding to those local flocks already serving mining communities.[8] The peak year for sheep in California was 1880 with nearly six million sheep in the state, 30 percent of them in the San Joaquin Valley underneath the Sierra. After that year, sheep left by the hundreds of thousands.[9] In 1883 the English investor William Shepherd took a band of sheep from San Francisco over the Sierra through Nevada to Idaho to see if the investment would pay. Instead, he concluded, "those halcyon days of the California stock-raisers can never return." Taking sheep on the long drives could not produce significant returns because increased land values, irrigation, small farmers, and the fencing laws all made further investment in California sheep impractical.[10] As the horticulturist E. J. Wickson later put it, in California "wool production gave way to the growing convictions of the better use of land for other products for which the first decade of an overland railway brought not only a shipping outlet but a multitude of new settlers eager to invest in more intensive agriculture."[11] Sheep were pushed by the economy to other areas or to more remote, "marginal" lands as former range came under cultivation.[12] Pastoralism no longer paid on an English investment in California.

After the 1864 drought, some stockmen looked to irrigation, grain or alfalfa farming, and fencing as answers to environmental pressures of drought and starvation of stock on the open range.[13] By Shepherd's time, those answers had become the pastoralist's problems, limiting open range and drive ways. The actual turning point for California sheep was another very serious drought in 1877. Heavy losses among sheep began in winter that year. Thousands more died as they were trailed to other range, the mountains, or out of state. The natural increase in spring lambs was lost, while the wool clip was dusty and poor.[14]

"Stock fled in every direction" during and after this drought.[15] Sheep moved into northern California, out from southern California to Texas and New Mexico, and across the Great Basin to the mountain states, which by 1900 were the nation's largest sheep states along with Ohio.[16] Sheep passed east through the Great Basin on new trails above and below the old California Trail on which sheep had been driven west two decades earlier. Private land and fenced range

along the railroad line moved sheep trail corridors to the south and north.[17] Harsh winters like 1879-80 or 1889-90 combined with drought to raise the risk for sheep in Nevada, forcing sheepmen to fence range, grow and store hay, and develop water supplies. Still, high mortality rates (more than 60 percent in 1879-80) were a condition of the sheep business in Nevada, where sheep were taken to glean the leftovers on range earlier overstocked with cattle and horses.[18] Climatic events convinced many sheepmen to move their stock from Great Basin to mountain states with easier access to midwestern markets. In the early 1880s surpluses of irrigated crops in eastern Nebraska, and especially in northern Colorado, supplied feedlots for cattle and even more sheep as a way of generating more marketable and profitable foodstuffs for the East from that region. Sheep that had grazed in Idaho and Montana were driven to these areas to fatten for the market before shipping on the railroad.[19] There was, therefore, never "homogeneity in the sheep-growing practices" of the western states.[20] There was as much difference between practices in the San Joaquin Valley and the Sierra as there was between California and Nevada or Idaho or Colorado. Varying practices also meant varying impacts on western environments and changing impacts as the sheep and other industries changed.

In the Sierra before 1877 sheep were concentrated along the major corridors across the central and southern parts of the range. In 1875 Muir saw few sheep on his survey of sequoias from Yosemite south until he got to the Tule River basin, where one of the great trans-Sierra routes passed through to the east side. James Mason Hutchings, as opposed to sheep as Muir, also toured the high Sierra from Yosemite south to Mount Whitney in 1875, observing sheep only on major trans-Sierran crossings like the Mammoth and Hockett trails.[21] Sheep had also used the Sonora and Walker Pass corridors heavily. Mono Pass through Yosemite was used to a lesser extent. In 1875 sheep had worked part way up the Kern River basin from the southern San Joaquin Valley.[22] Because of its aridity and accessibility, the Kern Plateau was more vulnerable to sheep than other parts of the range.

Sheep that survived the 1877 drought in California were often moved out of the San Joaquin Valley. Most San Joaquin Valley counties saw precipitous declines in numbers of sheep between 1876 and 1880.[23] The drought, along with agricultural settlement, forced remaining sheep higher and farther into the Sierra as herders searched more widely for feed and water. In doing so, they moved farther from the major crossings to protect their flocks even as the number of sheep in the area declined sharply and as other methods of feeding continued to replace seasonal migration. Domestic sheep covered their widest range in the high Sierra only after 1877.[24] Clearly climate, markets, and land use forced adjustment, reduction, and change in the range-sheep industry in California well before parks and forest reserves were established in the 1890s.

Adjustments by California sheepmen to the economic and climatic conditions of the 1870s had a great deal to do with their reactions to the creation of

park and forest reservations in the 1890s. Many established sheepmen had arrived during the gold rush and had used a combination of occupations to turn their earnings into ranches. Their wealth at the end of the century was often tied to networks of family and friends developed during the gold rush period. Using their land as a home base and a source of feed, these men raised sheep and employed herders to accompany them and their flocks into the high country during the summer months. Henry Clay Daulton turned from mining to sheep and cattle in 1852 and began buying land in Fresno County a decade later. His initial investments in sheep slowly turned into more land and eventually some six thousand sheep. He called his ranch Shepherd's Home and from it ranged into the headwaters of the San Joaquin River in summer. He had a copper mine on his ranch and was a county supervisor, first in Fresno and later in Madera County. After Yosemite National Park was created in 1890, Daulton felt the loss of the land for grazing but did not object to the park because his holdings were large and diverse enough that he no longer needed that range. Nevertheless, he believed that grazing had helped prevent disastrous fires by keeping brush and young trees down. By the time Daulton died in a buggy accident in 1893, his son Jonathan had taken over the family sheep business, continuing to graze along and inside the park boundary. After 1900 the family frequently came to the mountains along Daulton sheep trails, staying at sheep camps, but now for recreation and respite from lower elevation summer heat.[25]

Harvey J. Ostrander left his New York farm in 1849 for the gold rush, returned to New York to marry, then came back to California, where he started a small flour mill and farm on which he raised fruit, stock, and alfalfa. He added sheep to his farm in 1861 and ran his stock to the mountains from Merced in the drought of 1864. When cattlemen bought up nearby water holes, Ostrander drilled the first well in Merced County in 1865 for his sheep, "demonstrating the feasibility of maintaining stock ranches on the dry plains." Ostrander was president of an early Merced County canal company and also a founder of the county agricultural society. Eventually Ostrander had about four thousand sheep and added grains to his farm products. When James Mason Hutchings wrote in 1891 that the new park had "legally paralyzed . . . the hands of the despoiler and vandal" sheepmen who "had devastated immense areas of its primeval forests with devouring fire," Ostrander replied testily:

> Sheepmen, upon discovering a mountain meadow enclosed by lofty peaks and precipices, might turn their sheep in on the grass, and build a brush fence across each end of the meadow. An artist, a man fitted by nature to guard the beauties of such a spot, and keep untarnished this jewel in nature's crown, would, if we may judge it from the Yosemite, immediately fence it in with wire fences, plow up the natural grass, sow it with grain, raise hay and sell it to the campers at $40 a ton, [and] chop down the trees for cord-wood . . . . The beauties of nature would in this way be fully protected, but the sheep man . . . would spoil all, if he were allowed to even approach it.

In Ostrander's view, park protection of the public lands was simply protection of one interest over another.[26] In the same way that climate, markets, and land uses brought changes in range industries, the creation of national parks also forced displacements.

Like Daulton, Ostrander suggested that sheep grazing reduced the risk of large fires, that sheepmen often fought fires, and that they were not about to destroy their livelihoods by destroying mountain pastures. He pointed out that different people probably have different ideas "of the beauties of nature." His long use of the range below Ostrander Lake in Yosemite depended on his care of that range, whether public land or not. He had enthusiastically served tourists who happened to come through his camp in what is now Bridalveil Creek Campground on their way to Yosemite Valley, also providing "an eloquent dissertation on the unapproachable sublimity of the Yosemite." Between 1894 and 1898 Ostrander served on the State Commission to Manage the Yosemite Valley and Mariposa Big Tree Grove. Also in 1894, he petitioned the cavalry in Yosemite National Park for access across the Sierra by the Mammoth Trail, but the cavalry dismissed the proposal because sheep had been leaving the state by railroad and therefore did not need a route through the park. None of Ostrander's immediate family followed him in agriculture, instead using his sheep and other endeavors as springboards into the professions.[27] Ostrander, with his holdings and diverse interests in the San Joaquin Valley by 1890, could afford the loss of public range in the mountains for his stock. Still, the comments of both Hutchings and Ostrander framed arguments that have continued to our own day.

As an established local citizen, Ostrander could have a voice. But the herders employed by sheep owners or herders starting out on their own had virtually no voice. They did, however, have investments in their flocks. Their own welfare was directly dependent on the welfare of their charges, which in turn was dependent on the welfare of their pastures. Aspiration frequently countered a desire to exploit, for, if they ruined the feed one year, there might be no good feed the next. Herders often took their wages in ewes and ran their own animals with their employers' until they could build up flocks of their own.[28] Their goal was often to save enough to return home, but they might also want to be able to convert their sheep eventually into respectability and a better living. One Portuguese dairyman in the central valley kept a half dozen sheep in his front yard as a reminder of the source of his well-being from the days he had herded in Yosemite so far from the poverty of his childhood in the Azores.[29]

It was easy for such small herders, hired or independent, to become symbols of destruction of the land by "hoofed locusts." Not only were they usually culturally different from mainstream America, as diverse as that was, but many were also illiterate or barely literate.[30] The "hoofed locust" charge lumped together their disadvantages as immigrants without land, speaking little English and writing less, from different cultures with different customs and dress.

Herders had no means to challenge the stereotype. For many there was no need to challenge it as long as they could make their stake and return home. This, of course, made them seem even more exploitive, for ethnic ties and the intent to return home appeared to override any concerns about putting "too much pressure upon the available range."[31]

Even with low literacy rates, herders did leave records of their Sierran movements by carving signs, pictures, and initials on forest trees. Of the seventeen hundred carvings recorded in Yosemite National Park, most were made between 1870 and 1905 by sheepherders.[32] These carvings address directly the contention that sheep in the Sierra represent a classic example of "the tragedy of the commons" by showing how herders managed their flocks in the mountains. Commons in this use refers to open, unrestricted access.[33] The term as used is theoretical, with assumptions of mechanistic human behavior ignoring traditions of the commons as social institutions that provide informal means of managing land and labor.[34] European immigrants, whether or not they had herded sheep at home, often brought with them some traditional notions of the commons.[35] Because the Department of the Interior was primarily a land-disposal agency in the nineteenth century, there were no rules of conduct on public lands in the Sierra. Herders learned from experience, forebears, acquaintances, and seasonal conditions how best to conduct their flocks. But in the vacuum many immigrant herders applied as best they could those customs they knew. There were good herders and bad.[36] Sheepherder practices in the Sierra were informal and varied widely, but acceptance of the social institutions of the commons as the only available base of custom seems to have affected herding patterns in the high country of the Yosemite region. There were occasional conflicts, but bloodshed was unusual.[37] Informal application of traditions of the commons to problems on Sierra range may have become more possible as the number of sheep declined in California and as immigrants from outside the country entered the state's sheep industry. A portion of sheep remaining in California moved seasonally into the high Sierra, increasing the competition for range. But there were also understandings about range use that worked frequently to minimize conflict, overgrazing, and higher mortality among flocks.[38]

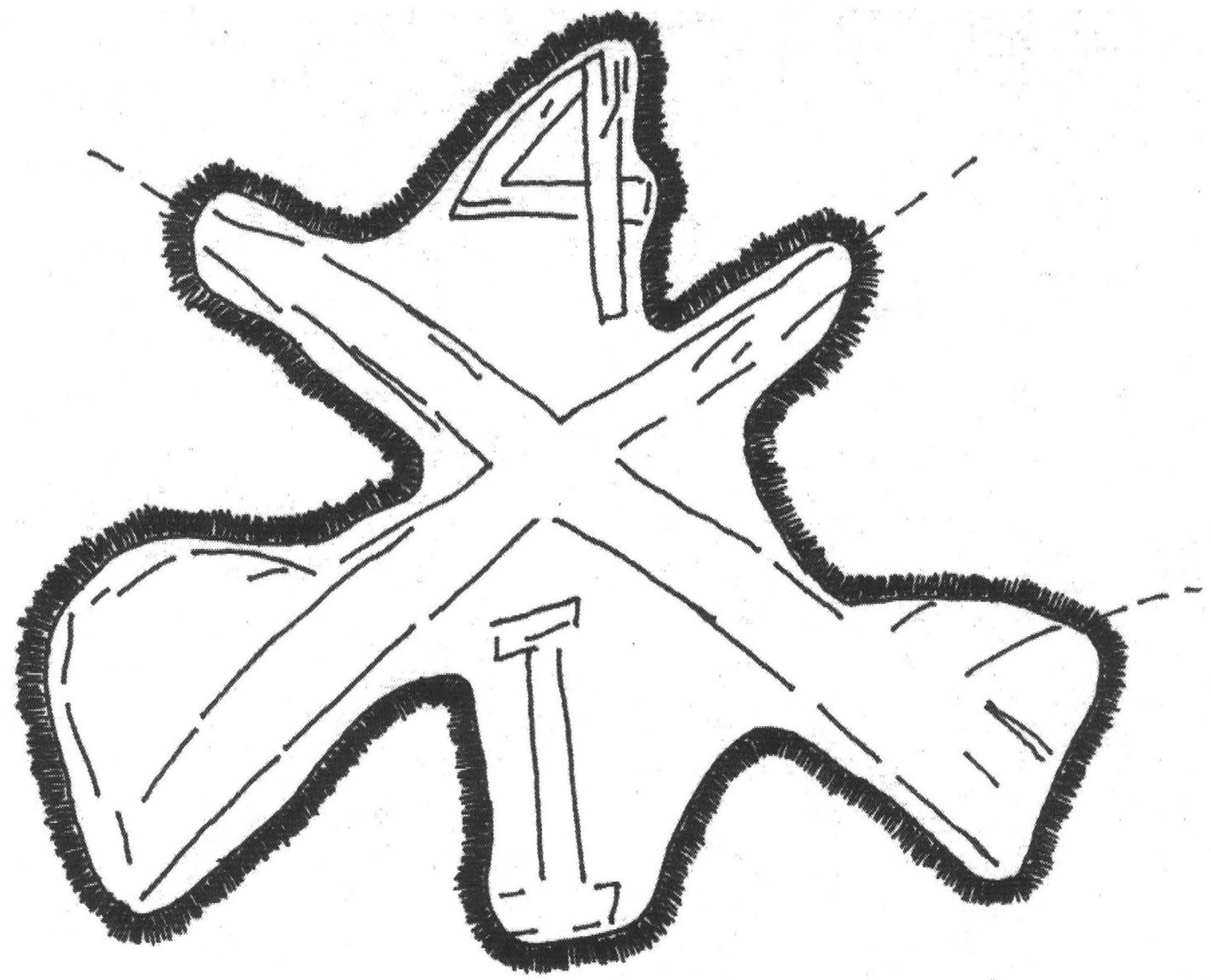
The first element of a traditional commons approach was seasonal movement of flocks. "Among the lessons taught the wool-growers of California by the excessive drought of 1864," wrote Sacramentan Wilson Flint, "was that of the benefit of migration." By adopting "a plan similar in some respects to the Spanish custom called the *mesta*," flocks could be kept in temperate climates most of the year by migrating with the seasons.[39] Migration was driven by the environment but modeled on European custom, eventually establishing a variety of seasonal rounds in the state's sheep industry. Rather than overgrazing everything along the way, migration dispersed grazing to save natural forage for different seasons, especially winter, and by implication for future years.

Climate and the seasons determined arrival and departure in the high country. On European commons these times might be decided by the commune. The practice was clear enough, but situations in California refined it. There was little benefit to pushing the summer migration to the high country because there was little sustenance in new grass on boggy meadows, and trampling could reduce future forage.[40] Drought years brought earlier arrivals to the high country and greater pressures on natural forage and riparian environments. One elderly man caught in Yosemite in the fall of the 1898 drought knew the consequences of being caught, "but the only alternative was to allow his sheep to die of starvation in the valley below."[41] For a herder with initials TGS at 8,000 feet in northern Yosemite, July 4 of 1877 was "Hell's Delight," still cloudy with mosquitoes early in that drought year. JRS reached the head of narrow, forbidding Matterhorn Canyon at 9,800 feet on June 22, 1887. Once in the high country, sheep moved frequently until about the fall equinox, when they started back down to the lowlands. Departure times were often learned from high mortality rates during early fall storms. Whole flocks could be lost if they stayed too late. HKR left "Randall's Canyon" at 9,400 feet on October 6, 1885, moving about six miles west over the next two days.[42] Though his stay was later than most, his movement was typical.[43]

In Yosemite, as in other areas, there was an ecological division of range between cattle and sheep understood by stockmen and grasped in 1904 by Yosemite's remarkably observant Acting Superintendent John Bigelow, Jr. He noted that most cattle made use of the heavily forested upland plateau at roughly 6,000 to 8,000 feet with its smaller but deep-soiled meadows. Sheep, on the other hand, used the rougher, higher country with short-grass meadows and lower browse. Bigelow said that the upland plateau had more game and the most and largest fires. What neither he nor Muir noted was that the upland plateau had older soils, tall-grass meadows, and heavier forests because the area had remained unglaciated in the last million years. Sheep used the higher, much more recently glaciated canyons with shallower soils, shorter grasses, and thinner forests, where fires were often controlled by outcrops of bedrock. Bigelow proposed light burning and limited cattle grazing to reduce fire threats.[44] So it was that most larger fires occurred in cattle country, but the sheepherders got blamed for them. In fact, both cowboys and sheepherders believed in the efficacy of small fires to maintain Sierran forests and meadows in the best condition for their grazing. Herder ideas about fire came from Indian people, some of whom were herders,[45] but also from European traditions of the commons.[46]

Many of the Yosemite blazes carved on trees were territorial, making an individual's claim to grazing lands. Territoriality "can be the basis for the development of more restrictive common property institutions," or, in other words, a tool for conservation.[47] Territorial claims were made with carvings, place names, oral tradition, and informal agreement. Delaney Creek, where Muir

Sheepherder TGS left his drought year message "Hell's Delight" (Blaze #503) near a northern Yosemite lake. *(Author's collection)*



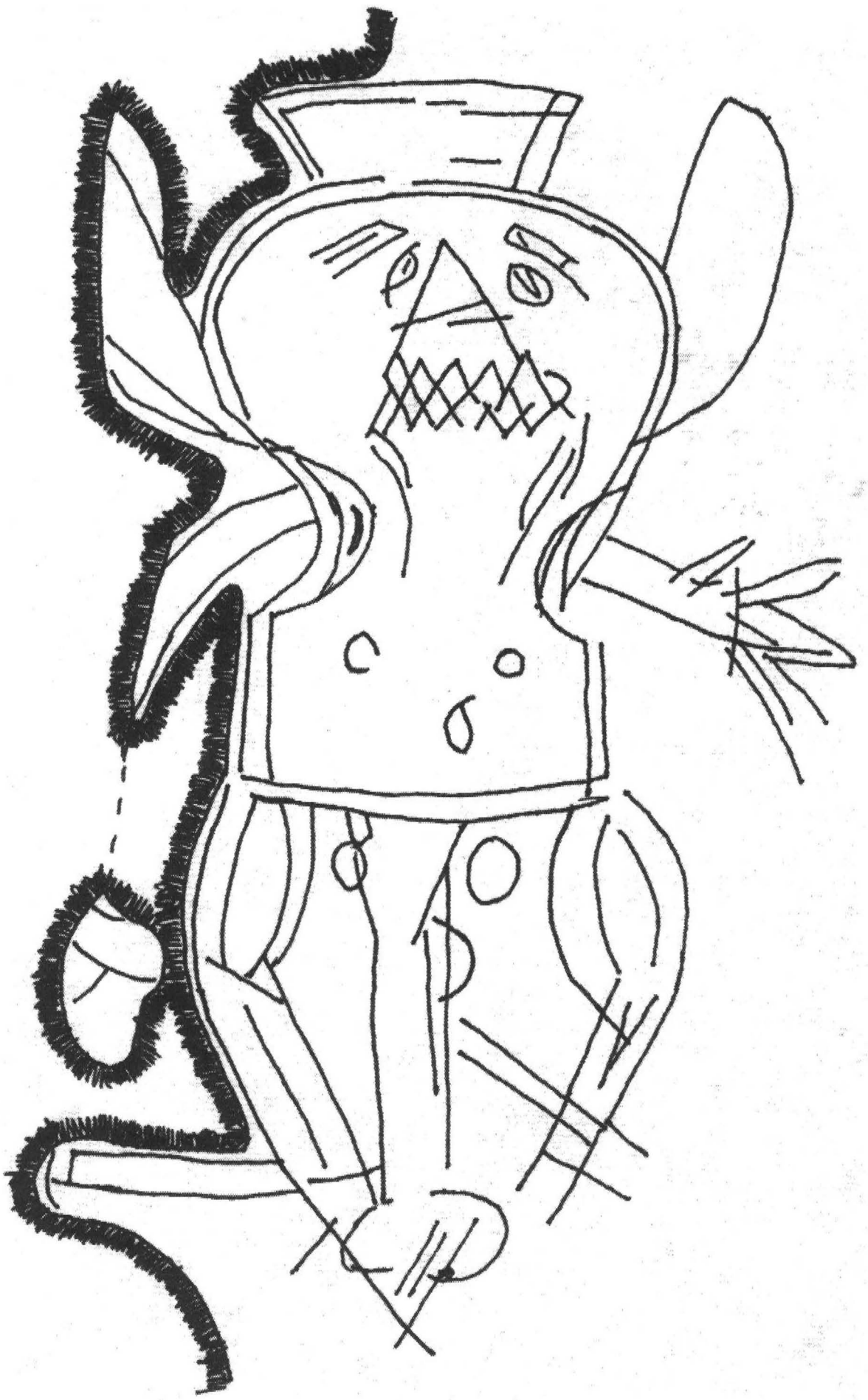
These crossed sabers (Blaze #321) were carved by the 4th Cavalry, I Troop, between 1891 and1893 as a competing territorial claim in northern Yosemite. *(Author's collection)*

herded Patrick Delaney's sheep, represents one such claim. MR left his initials in several widely separated places to stake his claim between 1879 and 1887. HM carved his initials for grazing claims in the 1880s in just a couple of canyons. So did HKR, the Randall of "Randall's Canyon," before the place name changed.[48] Territorial claims might last one or more seasons; place names changed accordingly. Territorial claims carved on lodgepole pines tended to be initials. An illiterate herder's claim could be pictorial, a self-portrait, for example, with a distinctive characteristic like a hat or pipe.[49] In each case territorial claims were ways of dividing the commons into smaller domains with informal, mutual understandings to regulate use. Such divisions were crucial to maintaining the health of the commons for future seasons and for reducing stock mortality. Statements of territory were not always respected, especially in the worst drought years; however, the largest number of blazes carved between 1875 and 1890 in Yosemite appear to be claims to territory.[50]

In Yosemite's Lyell Canyon, a classic U-shaped glaciated canyon at 8,800 feet, divisions of territory were marked by blazes of intials. Territory was also divided geographically by moraines and slickrock. Soda springs appear not to have been claimed but rather used by all. Blazes in Lyell Canyon suggest that herders divided the canyon not only down the river but also from side to side, although a few herders left blazes on both sides of the stream. JC and MAT are only on the north side of one compartment, while Bob Marcus is only on the lower south side. SAM is on both sides in the canyon middle.[51] Herders probably grazed and gathered on the valley floor as well as grazing up the canyon walls.

With territorial claims went an understanding of the geography that far exceeded the cavalry's geographic knowledge in most cases. Geography was an oral tradition with place names of its own and storied names like Lightning Ridge to outline the sequence of canyons or location of trails. John B. Lembert, homesteader and insect collector in Tuolumne Meadows, had been given an oral map by his herder friends, which he attempted to reduce to written directions for the cavalry from Tuolumne Meadows across northern Yosemite. Lieutenant Nathaniel McClure, charged with making a park map for patrol use, found Lembert's sheepherder directions nearly useless, blaming the directions and the herders when he missed major cross-canyon trails.[52] His real problem, as enforcer of the new national park boundaries, was that he could not communicate effectively with the herders and made little effort to understand their geography.

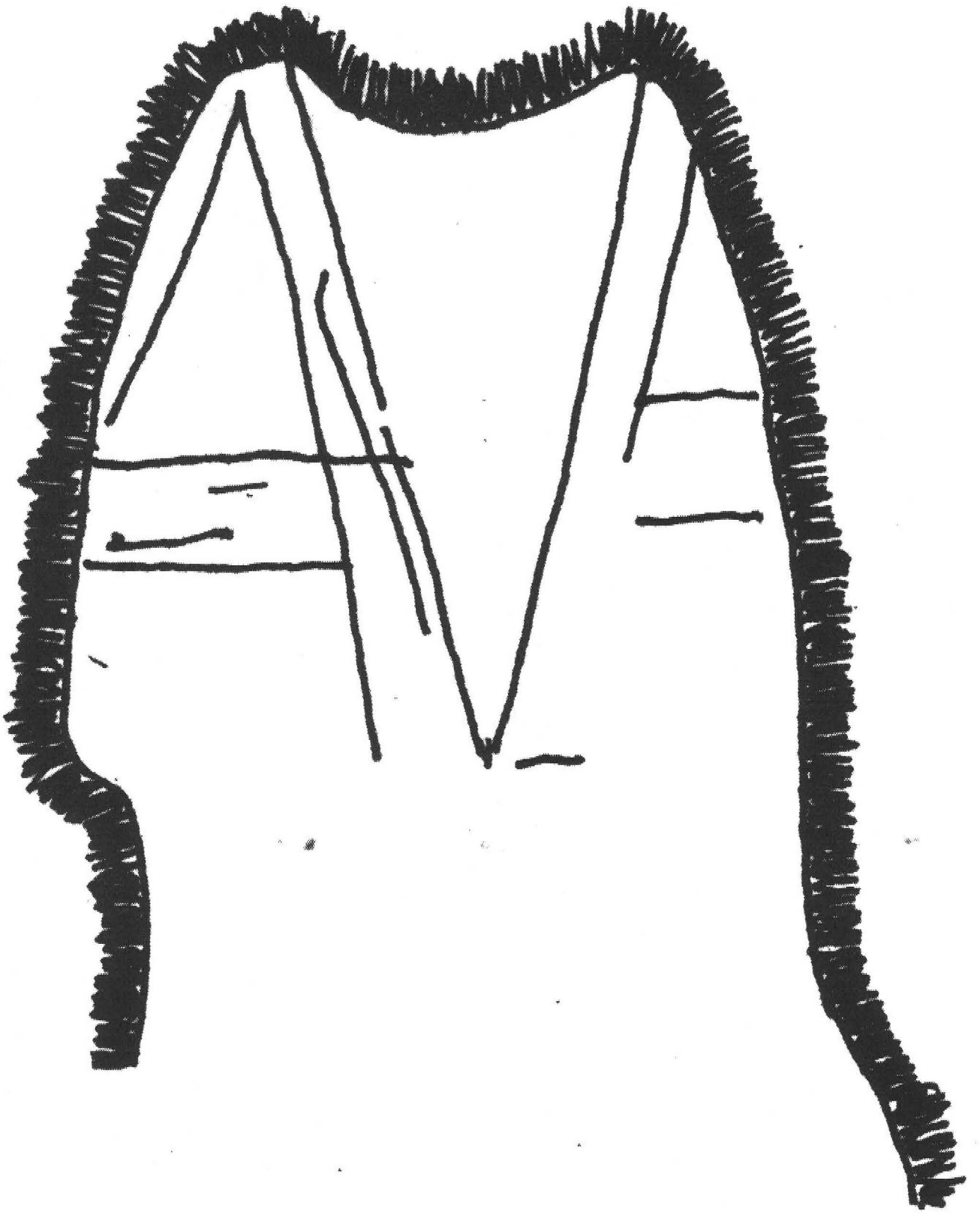
Herders' geographic understanding may be illustrated by a group of their carvings near the heart of Yosemite National Park. Exploring around the Tuolumne Meadows for sustainable feed, herders entered a watershed just a few miles from the cavalry outpost later established there. Herders entered this area that the cavalry never mapped by routes the cavalry never found.[53] The upper part of this watershed is a series of roughly parallel glacial canyons



A sheepherder carved this sentry figure, perhaps a self-portrait (Blaze #1349) on the edge of a favorite meadow. *(Author's collection)*

complicated by cross-joints in the bedrock which can give the impression of a geologic jumble. The herders, however, came to understand the ways glacial geology had provided routes with feed around cliffs and slickrock to give access to meadows, browse, and water. Herders established a central camp in one meadow at the hub of several glaciated drainages from which they could vary their grazing and accommodate other herders. Glacial moraines defined natural boundaries for bands of sheep. This camp, used as early as 1872, and continuing through 1903, received increased use during the 1898 drought when herders pushed the limits of the watershed for feed and water. While other creeks were dry during that drought, the creek by the main camp ran. Around the central meadow the herders carved initials, dates, and many figures of well-endowed men, some friendly, others fierce, standing like totem poles to watch over their place.[54]

What conservationists like Muir, publicists like James Hutchings, and scientists like Charles Sargent or William Hammond Hall often saw as resource destruction, herders saw as resource enhancement from traditions of the commons. Three practices in particular—burning, manuring, and brush reduction—show how different people could look at the same thing with very different perspectives. The threat of forest fire was attached to sheepherders. Muir and others thought that their fires more than logging might destroy the nation's forests. Forest and hydrologic knowledge was based largely on eastern studies like G. P. Marsh's *Man and Nature* (1864). There was little scientific understanding of the role of fire in western forests. Discussion of fire as a conservation tool became politically incorrect as suppression achieved scientific orthodoxy. George B. Sudworth studied the forests of the Stanislaus and northern Yosemite forest reserves in 1900, concluding that the practice of thinning forest reproduction by fire was the greatest threat to the forests, exactly the opposite conclusion we would draw today as we institute more and more prescribed fire programs. Indian, or light, burning was supported by stockmen and by several Yosemite acting superintendents, but the debate ended within the government in 1905 when the new Forest Service adopted suppression, and Yosemite's Acting Superintendent Harry C. Benson adopted the Forest Service policy.[55] Sheepmen complained that fire suppression increased the number of predators lying in wait for their flocks in dense, unburned brush and increased grazing impacts by concentrating flocks on grassland areas reduced by encroaching timber and thick brush. Sheepmen tried to point out that they understood that large fires were detrimental to sheep range. Their position was condemned as irrational and selfish, and the issue became more and more difficult to discuss. Some cattlemen and sheepmen tried to continue the commons tradition of light burning even when it was illegal, so entrenched was the local and traditional understanding that fire was part of "thinking like a mountain" in the Sierra. One cowboy remembers his grandmother remarking on a fall day after seeing a blue haze in the higher mountains from her front door long after 1905, "There's smoke in the mountains; the boys'll be comin' home."[56]



This AA blaze (Blaze #1165) in central Yosemite was probably the work of sheepherder Angel Arriet. *(Author's collection)*

A second practice from the commons was manuring. Few thought about enhancement of the vast grazing grounds on public lands in California before the 1864 drought. Following that year the State Agricultural Society suggested that mixed farming would be of great benefit in having sheep follow the cutting of grain, since "their droppings are a far better fertilizer than the debris of stubble and litter they consume."[57] Sheep could benefit from the raising of winter feed which would in turn prevent higher mortality rates. By 1871, the expansion of bonanza grain farming (large-scale dry farming of wheat) produced additional suggestions that sheep and cattle should be run over stubble in preference to burning because the soil, "however rich now, will, in a few years of constant cropping and no manuring, be reduced to a state of poverty and unproductiveness."[58] Accused of close grazing near Kings Canyon, a Basque sheepherder replied that his sheep "leave behind everything they take out of the ground. A sheep is a four-legged mower with a fertilizer drop on the rear end."[59]

A related commons practice was brush control. Sheep fed on young brush as well as trampling it down. Like fire, their trampling and eating of seedlings acted to thin broadcast reproduction. Evaluation of this practice was simply a matter of perspective. For sheepmen, the thinning of brush and reproduction was necessary to keep brush from getting so thick it could not be browsed or passed through.[60] For foresters, thinning was bad because timber was more important than sheep and because maximum reproduction through fire suppression and exclusion of grazing was their goal.[61] Regulation could not be left to herders because, in the forester's view, herders "consider the feed for the season only" rather than the public good or the good of the forest.[62] The moral gloss rationalized the displacement of one economic interest by another.

State forestry led the attack on the social and economic institutions of the commons in many places in the world by denying the relevance or even the existence of such institutions.[63] Those institutions were most often local, rural, practiced by often illiterate peasant or subsistence farmers, with no voice, and at variance with the latest trends in state economic development and science. In most cases there was resistance, and the Sierra was no exception. Creation of national parks and forests in the Sierra in 1890 and 1893 purposely favored state regulation over local custom and used the danger of "hoofed locusts" and fire to legitimize the extension of authority.[64] The creation of this new authority for parks and forests eliminated the regulating institutions of the commons which before 1890 had been applied unevenly, informally to mountain grazing grounds. Park and forest establishment, then, had the effect of removing local restraints on public lands.

Without knowing if there would be any range next year, herders began to take what they could get. They particularly took advantage during the 1898 drought year when the cavalry was engaged elsewhere in the Spanish-American War. The volunteers who replaced the cavalry made the much inflated claim

of having evicted 214,050 sheep from Yosemite that year. The volunteers arrived late in the season at Sequoia, but claimed that 200,000 sheep had overrun the park before their arrival.[65] The fact of the matter, recorded on Yosemite's trees, is that herders had almost free rein that year, took what they could get, but did not come in the numbers claimed. For some, like Robert Bright, 1898 was their last year in Yosemite, and they moved their sheep operations to large ranches in the foothills. Some smaller herders continued to graze in Yosemite, playing cat-and-mouse with the cavalry to build up their flocks so that they, too, could change their way of making a living, using the mountains to subsidize their later displacement.[66] Enforcement after 1905 coincided with changes in the sheep industry and brought an end to illegal grazing in Yosemite along with the issuing of some permits for sheep on Sierran national forests after 1906.[67]

Two of the "tramp herders" who were taking what they could get each season in park and forest were Angel and Pedro Arriet, among the most sought by Yosemite's cavalry. Angel (b. 1863) was eldest of eleven children born in a Pyrenees village to Spanish and French Basque parents. His father was a carpenter and farmer. He and his younger brother Pedro (b. 1864) both had little education because they had to help their parents on the farm. Angel immigrated to California in 1884 and worked for a sheepman, Miguel Arburua of Los Banos, caring for his flocks on the west side of the central valley.[68] Pedro followed Angel in 1886, also working for Arburua.[69] Probably working on shares, Angel and Pedro put together their own flocks by 1888, when they formed a partnership, grazing in the Sierra during the summers and continuing together to 1900, when they divided their holdings between them.

In the season of 1903, Angel Arriet was caught using the eastern and southern parts of Yosemite National Park. He usually had about two thousand sheep branded Circle A, with three herders and packstock. Once he pled ignorance of English; once he refused to give his name; and once he could not be found with the sheep. Each time he managed to get away with his sheep. Yosemite's Acting Superintendent Joseph Garrard knew Arriet as an "old offender" and "particularly aggressive." "This man, Angel Arriet, a Frenchman has been in this country for 10 years and aparently [sic] never intinds [sic] to become a citizen." In early October 1903, Angel Arriet was apprehended by park rangers Archie Leonard and Charles Leidig inside the park's south boundary, boasting that nothing they could do could injure him. Garrard telegraphed the Secretary of the Interior for authority to make an example of Arriet, but, before the secretary could respond, Arriet had slipped outside the park boundary with his sheep. Infuriated, Garrard sought to try the rangers who let Arriet get away by using Arriet as a witness against them. Arriet had claimed as a reference the Sierra Forest Reserve's Supervisor, Charles S. Newhall, to whom Garrard wrote asking if Arriet would be "a reliable man" as a witness! Garrard also hoped to quell rumors that Arriet and other herders had bribed soldiers to let them pass,

Angel Arriet

Dominica Arriet

These portraits of Angel and Dominica Arriet appeared in *History of Fresno County,* by Paul Vandor, 1919. *(Author's collection)*

rumors "afloat with respect to [this and] previous commands in the Park."[70] With rumors and challenging behavior, Arriet was able to play agencies and their representatives against one another. The responses of Arriet and other herders to getting caught, clearly defensive, also suggest the influence of old-country Basque practices of practical joking and ritual dueling to minimize violence.[71]

Ultimately, Angel and Pedro got their feed. In 1901 Pedro located a homestead, sunk a well, built a residence, and raised wheat as well as sheep. He was an original stockholder in the Growers' National Bank of Fresno. Angel sold his sheep in 1905, married Dominica Camino, a French Basque, and started a dairy. He raised raisin grapes and alfalfa along with his dairy operation. In a Fresno County subscriber history in which he purchased space for his biography, he made a point of adding that "Mr. and Mrs. Arriet are loyal to their adopted flag and particularly do they appreciate the splendid opportunities California has afforded them." There is, however, no mention of grazing in Yosemite.[72]

Contrary to stereotype, the Arriets accepted American ways and stayed. They benefited from the mountains even when they were prohibited from doing so and when most of the traditional cultural practices they knew to order their lives had been overruled. They took advantage of the loopholes, the inefficiencies, and the slowly evolving practices of managing public lands to make better livings than their homeland had offered. They were criticized for their language, culture, and livelihood even while they used their backgrounds to recast themselves as successful (Basque) Americans. By 1890 the sheep industry in California was in steep decline. Many giant sequoias had been cut for lumber, and timber claims had been filed throughout the forest belt of the Sierra Nevada. Railroads had extended throughout the state, changing economic and social relations along their lines. Yet sheepherders and fire were the rallying cries for preservation of parks and forests. The creation of these reserves was based as much on nativism as on the science of the day. Dislike and fear of immigrant herders, along with their publicized association with forest destruction, eclipsed management alternatives.

Those alternatives to enclosure and exclusion were discussed at the time within the ideological contexts of the day. Most alternatives consisted of permitting or leasing rather than disposal or enclosure of public lands. In Australia, the British Crown tried to direct colonial settlement toward small holdings by yeoman farmers drawn from English slums and Irish famine. Land surveys with carrying capacities were "to provide a visible and measurable framework for the expansion of intensive settlement." Leases of pastoral lands were based on carrying capacities as early as 1847 and came to provide a valuable income for the state. Droughts in 1864 and 1876 influenced the eventual recognition that small farms could not be extended to all types of land. In the process, land classification rather than land disposal became the framework for

administration of Crown lands.[73] The idea of leases based on a rough grading of public lands was quickly discovered by American visitors who took it home and broached it nationally in 1865.[74]

A version of the idea appeared again in 1877 when Secretary of the Interior Carl Schurz and General Land Office Commissioner J. A. Williamson proposed the retention of public forest land by the federal government with a controlled sale of timber to allay national fears of timber depletion.[75] In 1881 California State Engineer William Hammond Hall adapted the idea in his plan to manage the Yosemite Valley and Mariposa Big Tree Grant. The extension of the grant and control of the watershed above Yosemite Valley, Hall believed, would protect the watershed by regulating grazing and timber cutting. This would at the same time provide an income for the park, which was otherwise dependent on concessioner permit fees and erratic state appropriations.[76]

Such alternatives were not included in proposals for Sierra parks and reserves in 1881. Those proposals were beaten back by local fear of monopoly of available resources on the public lands by corporate interests or corrupt politicians. Opposition was also fed by fear (tinged with anti-Chinese sentiment) of restrictions on local opportunities for mining, homesteading, grazing, and logging. That no clear plan for management of the reserved public lands was included may be what many people found most disconcerting about the proposals that year.[77] The 1890 acts were also restrictive, favoring the budding recreation economy over timber, mining, or grazing, but without any specific administrative structure beyond concession permits.[78] The 1893 reservations of forest lands in California were also restrictive but had unclear procedures for implementation and enforcement, though one goal of the restrictions was to eliminate the tramp herder.[79] Only in 1905, when the cavalry in California national parks were given legal power to arrest, and when the United States Forest Service was created and established its permit system for logging and grazing, were management practices more clearly defined, codified, and implemented by an increasingly professionalized government staff.[80]

Paul Wallace Gates wrote that most nineteenth-century land measures did not receive "the most careful consideration" they required. Instead, they had been adopted "without the intensive analysis they needed," and were based more on popular mythology about the public lands than on the science of the day, itself more representative of political and social forces than actual physical environments.[81] Symbols reduced contemporary science to simple images, easily adapted to moralizing politics. The symbol of the "hoofed locusts," dividing the world into good and evil, protector and exploiter, industrial and pastoral, modern and traditional, civilized and savage, had the effect of polarizing debate. Alternatives were automatically allocated to the negative side of the moral equation. As a battle cry for conservation, the slogan "hoofed locusts" had the effect of further marginalizing new immigrants in a pastoral industry and supporting the related scientific orthodoxy, fire suppression. But polarization

foundered on progressive efforts to regulate the new economy. The conservation movement split into several conflicting parts, though the moral fervor of the "hoofed locust" symbol continued to inform them all in new applications.

Notes

[1]William C. Kinney, "Conditions of Rangelands before 1905," *Sierra Nevada Ecosystem Project Final Report to Congress, Vol. II, Assessments and Scientific Basis for Management Options* (Davis: University of California, Centers for Water and Wildland Resources, 1996), 40-41; in the same volume see also David Beesley, "Reconstructing the Landscape: An Environmental History, 1820-1890," 7-8.

[2]Address of John Muir, "Proceedings of the Meeting of the Sierra Club Held November 25, 1895," *Sierra Club Bulletin*, 1:7 (January 1896), 272-73, in which, having completed a six-week journey through Yosemite, he compliments the cavalry and says, "The flowers and grasses are back in their places as if they had never been away . . . nearly every trace of the sad sheep years of repression and destruction having vanished." Capt. A. E. Wood, acting superintendent of Yosemite National Park, was moved to say after just one year of cavalry administration, "It is astonishing how quickly nature recuperates her exhausted forces," in his 1892 report in U.S., Department of the Interior, *Annual Report of the Secretary of the Interior for the Fiscal Year Ending June 30, 1892* (Washington, D.C.: Government Printing Office, 1892), III: 664. Several times in the last two decades of his life, I asked the renowned alpine botanist Carl Sharsmith if he could point to any remaining evidences of sheep grazing in Tuolumne Meadows, and, though he frequently invoked the image of "hoofed locusts," he could not single out their effects. Were the effects of sheep grazing any greater than the effects of increased recreational use and agency management since that time?

[3]John Muir, "The Mountain Lakes of California," *Scribner's Monthly*, 17: 3 (January 1879), 416, contains the Merced Lake experience, which does not appear in Muir's extant journals of these trips. John Muir, *Letters to a Friend* (Dunwoody, Ga: Peter S. Berg, Publisher, 1973), 168-69; Muir's 7 October 1874 letter to Jeanne Carr about his four nights' camp at Merced Lake gives no hint of his discovery of sheep there. William F. Badé, *The Life and Letters of John Muir* (Boston: Houghton Mifflin Co., 1924), II:28-29, also reprints this letter with no mention of sheep in the commentary. John Muir, *My First Summer in the Sierra* (Boston: Houghton Mifflin Co., 1911), 75, includes the term "hoofed locusts," and Peter Browning, ed., *John Muir in His Own Words* (Lafayette, Calif.: Great West Books, 1988), 9, has taken this as Muir's earliest use of the phrase. The original 1869 journal is missing. Muir's 1887 handwritten transcript, however, does not include "hoofed locusts" in the entry for 16 June 1869, nor does the 1910 typed revision of that transcript. The term is absent also from the heavily abridged version of "My First Summer in the Sierra," *Atlantic Monthly*, 107:1 (January 1911), 11, including the 16 June 1869 entry; it was added to *My First Summer* not long before its publication as a book in 1911 and simply inserts later ideas into his earlier journal. For the earlier manuscript versions, see R. H. Limbaugh and K. E. Lewis, eds., *The John Muir Papers 1856-1942* (Teaneck, N.J.: Chadwyck-Healey Inc., 1986), microfilm reel 32, "Sierra Journal Summer of 1869," frames 00175-00176 (pp. 92-94), and frame 00262 of the revised 1910 typescript. In fact Muir deleted most of the original sheep story in this entry before publication of the book to emphasize his "hoofed locusts" point.

[4]John Muir, "The New Sequoia Forests of California," *Harper's Monthly Magazine*, 57: 342 (November 1878), 825, has the story about Brownie in the sequoia groves of the Tule River basin. Linnie Marsh Wolfe, ed., *John of the Mountains, the Unpublished Journals of John Muir* (Boston: Houghton Mifflin Co., 1938), 185-90, 215, 226-27, 229, 230-31, contains Muir's journals of his 1875 "Sequoia Studies." For comparison, the original journal has been microfilmed in Limbaugh and Lewis, *John Muir Papers*, microfilm reel 24, no. 10.

[5]L. G. O'Connor, "A Brief History of the Sheep Industry in the United States," in American Historical Association, *Annual Report for the Year 1918*, Vol. 1 (Washington, D.C.: Government Printing Office, 1921), I:112-28. D. A. Spencer, *et al.*, "The Sheep Industry," in U.S. Department of Agriculture, *Agriculture Yearbook 1923* (Washington, D.C.: Government Printing Office, 1924), 230-31, 236-39.

[6]Edward Norris Wentworth, *America's Sheep Trails* (Ames: Iowa State College Press, 1948), 173-76, 186-87, 190-94. Marion Lee Menzel, "The Historical Geography of the Sheep Industry in California in the Nineteenth Century" (M.A. thesis, University of California, Berkeley, Oct., 1944), 24-36; Wilson Flint, "Textile Fibres of the Pacific States," *Transactions of the California State Agricultural Society, during the Years 1864 and 1865* (Sacramento: O. M. Clayes, State Printer, 1866),

284-85, (hereafter cited as California State Agricultural Society, *Transaction*), proposing seasonal movement of sheep into the central valley and Sierra following the drought of 1864 and describing one flock which had made such a migration successfully. Flint described a move toward the Sierra that was still in the stages of tentative exploration and mentioned the Nevada possibility for part of that migration.

[7]O'Connor,"Brief History," 133-34. Wentworth, *America's Sheep Trails*, 258-64; Clel Georgetta, "The Direction Reversed," in *Golden Fleece in Nevada* (Reno: Venture Pub. Co., 1972), 39-56; *Transactions of the California State Agricultural Society during the Years 1870 and 1871* (Sacramento: T. A. Springer, State Printer, 1872), 4-5 on the lessons of drought and agricultural expansion: *ibid.*, 52, on sheepmen having to buy other range: *ibid.*, 53, on the 1870 and earlier wool clips and competition with wheat.

[8]Byrd Wall Sawyer, *Nevada Nomads, A Story of the Sheep Industry* (San Jose, Calif.: Harlan-Young Press, 1971), 17.

[9]Menzel, "Historical Geography," 35, 39, 96, 99, 110-13; O'Connor, "Brief History," 191. The figure of nearly six million sheep is not consistent with totals in earlier or later censuses. O'Connor used the figure 5,727,000, which he took from Clarence Gordon, "Report on Cattle, Sheep, and Swine, Supplementary to Enumeration of Live Stock on Farms in 1880," in U.S., Department of the Interior, Census Office, *Report on the Productions of Agriculture as Returned at the Tenth Census (June 1, 1880)* (Washington, D.C.:Government Printing Office, 1883), 1046. At the same time, the census tally for sheep in California was listed in the same volume as 4,152,349, the number of "sheep, exclusive of spring lambs," (p. 175). Gordon defined the smaller census figure as sheep "on farms" and defined his own figure as the number of sheep in California "on farms and estimated unenumerated ranch and range stock." If Gordon's figure does not easily accord with other censuses, it nevertheless reflects changes in the California sheep industry away from range stock to farm stock.

[10]W. Shepherd, *Prairie Experiences in Handling Cattle and Sheep* (London: Chapman and Hall, 1884), 123.

[11]E. J. Wickson, *Rural California* (New York: Macmillan Co., 1923), 100.

[12]William L. Preston, *Vanishing Landscapes, Land and Life in the Tulare Lake Basin* (Berkeley: University of California Press, 1981), 91, pointing out that "marginal lands," like "worthless lands," are a matter of definition.

[13]California State Agricultural Society, *Transactions*, 1864-1865, 35-36, 69, 283.

[14]"Wool Report of E. Grisar & Co. for the Year 1877," *Transactions of the California State Agricultural Society during the Year 1877* (Sacramento: State Printing Office, 1878), 115. As Grisar & Co. (as well as Wickson, pp. 100, 104), point out, 1876 was the peak wool clip in California.

[15]Gordon, "Reports," 1036.

[16]*Ibid.*, 1045, 1059; O'Connor, "Brief History," 191; Sawyer, *Nevada Nomads*, 37; Wentworth, *America's Sheep Trails*, 258-65.

[17]Wentworth, *America's Sheep Trails*, 260, 262, 267, 269; Gordon, "Report," 1060, on fencing in northern Nevada with wire and California redwood posts, made cheaper by railroad transportation.

[18]Wentworth, *America's Sheep Trails*, 221. Sawyer, *Nevada Nomads*, 25, 37-38, 46, 48-49, 50, 64, 71-73, 90-93; Gordon, "Report," 1067, 1069.

[19]Wentworth, *America's Sheep Trails*, 264-66.

[20]*Ibid.*, 224.

[21]James Mason Hutchings, "A Photographic Expedition to Fisherman's Peak," ms journal, 3 September-22 October 1875, in National Park Service (hereafter cited as NPS), Yosemite National Park Museum. An annotated version of this journal is planned for publication by the Yosemite Association in 2004.

[22]Comments on sheep on the Kern Plateau in 1875 are contained in several reports in U.S., Department of War, Corps of Engineers, *Annual Report . . . for 1876, Appendix JJ: Annual Report upon the Geographical Surveys West of the One Hundredth Meridian, in California, Nevada, Utah, Colorado, Wyoming, New Mexico, Arizona, and Montana*, by George M. Wheeler (Washington, D.C.: Government Printing Office, 1876). In that report, see the subsidiary reports by Rogers Birnie, Jr., "Executive Report of Lieutenant R. Birnie, Jr., Thirteenth United States Infantry, on the Operations of Party No. 2, California Section, Field-Season of 1875," 131, 134-35; J. T. Rothrock, "Report

upon the Operations of a Special Natural-History Party and Main Field-Party No. 1, California Section, Field-Season of 1875, Being the Results of Observations upon the Economic Botany and Agriculture of Portions of Southern California," 211-13; H. W. Henshaw, "Report on the Ornithology of the Portions of California Visited during the Field-Season of 1875," 224-78; *idem*, "Notes on the Mammals Taken and Observed in California in 1875," 305-12.

[23]Numbers of sheep by county in California are given in California State Agricultural Society *Transactions*, 1876, 128-29; *Ibid.*, 1878, 354-55; "Statistics of Agriculture, Tabular Statements," in U.S., Department of the Interior, Census Office, *Report on the Production of Agriculture as returned at the Tenth Census (June 1, 1880)* (Washington, D.C.:Government Printing Office, 1883), 178, Table IX.

[24]Frederick V. Coville, "Sheep-Grazing in the Cascade Forest Reserve in Oregon," in U.S., Senate, 55th Cong., 2d Sess., Doc. 189 (15 March 1898), *Survey of the Forest Reserves*, 121-22, notes the same slow progression of sheep into the Cascades, though there the move uphill was due more to expansion of the sheep industry and to agricultural settlements in the lowlands. Mountains were used first in 1868. Increasing need for summer range gradually forced sheep farther up; they were using the highest slopes by about 1886.

[25]*History of Merced County, California* (San Francisco: Elliott and Moore, Pubs., 1881; rpt. Fresno: California History Books, 1974), 156-57 on Daulton, with double-page illustration of Shepherd's Home following p. 171. J. M. Guinn, "Henry Clay Daulton" in *History of the State of California and Biographical Record of the San Joaquin Valley, California* (Chicago: Chapman Pub. Co., 1905), 1520; The Daulton Historians of Hannibal, Missouri, and Madera, California, *Shepherd's Home* (Madera: Classroom Chronicles Press, 1989), pp. xi-xix presents a biography of Daulton, while the rest of the book is an attempt to reconstruct his life in the first person using family and other documents; Brenda Burnett Preston, *Andrew Davidson Firebaugh and Susan Burgess Firebaugh, California Pioneers* (Rio Del Mar, Calif: Rio Del Mar Press, 1995), p. 189, shows Daulton's connections with other prominent local families, often from the gold rush period. Lt. S. McP. Rutherford to the Adjutant, 17 June 1896, reporting on the arrest of "Jonathan Dalton and Fred Hildreth" with about seven thousand sheep on the North Fork of the San Joaquin River near Sheep Crossing, NPS, Yosemite National Park Museum, cat. no. 19655, Register of Letters Received [1891-1901], 78-79; 1st Lt. Alex. L. DEau to Camp Adjutant, June 27, 1896, reporting bands belonging to Jonathon Daulton and Miller and Lux grazing just south of the park line at Jackass Meadow, NPS, Yosemite Research Library, File: Cavalry Patrol Reports 1896-1905; Wilderness Historic Resources Survey, Blazes 1640-1642, NPS, Yosemite National Park, include an 1886 H. C. Daulton blaze and other late Daulton family carvings on aspens at a meadow above the North Fork, San Joaquin River. U.S., Senate, 55th Cong., 2d Sess., Doc. 48, "Reservation of Certain Lands in California," (5 January 1898) 1-3, includes 1892 testimony of "A. C. Dalton" *[sic]* on fire and grazing in national parks; Paul E. Vandor, *History of Fresno County, California, with Biographical Sketches* (Los Angeles: Historic Record Co., 1919), I:611-12, on Daulton.

[26]Elliott and Moore, *History*, 120-21. Guinn, *History*, 528, 530. H. [James Mason Hutchings], "The Yosemite National Park," *Pacific Rural Press*, 41:10 (7 March 1891), 221; H. J. Ostrander, "Sheep and Wool," *Pacific Rural Press*, 41:13 (28 March 1891), 286-87.

[27]Ostrander, "Sheep and Wool," 286-87; Hank Johnston, *The Yosemite Grant, 1864-1906* (Yosemite: Yosemite Association, 1995), 164, shows Ostrander's service as Yosemite Valley commissioner; John Outcalt, *History of Merced County, California, with a Biographical Review* (Los Angeles: Historic Record Co., 1925), 110, 333, 890-91; H. J. Ostrander petition for access to trans-Sierra trails, and response, Capt. G. G. Gale to Acting Secretary Wm. H. Sims, 31 May 1894, rejecting the petition, NPS, Yosemite National Park Museum cat. no. 19655, Register of Letters Received [1891-1905], 36-37.

[28]William A. Douglass and Jon Bilbao, *Amerikanuak: Basques in the New World* (Reno: University of Nevada Press, 1975), 232-33.

[29]Monica Danbom, Turlock, Calif., telephone interview with author, 20 April 1997.

[30]Eugen Weber, *Peasants into Frenchmen, The Modernization of Rural France, 1870-1914* (Stanford: Stanford University Press, 1976), 271-73, has an indirect evaluation of low literacy rates in the Basque districts of southern France as well as other areas. William A. Douglass, *Echalar and Murelaga, Opportunity and Rural Exodus in Two Spanish Basque Villages* (New York: St. Martin's Press, 1975), 115, noting that "in each village few persons who attended school before 1930 are able to read and write."

[31]Douglass and Bilbao, *Amerikanuak*, 232.

[32]James B. Snyder, with James B. Murphy, Jr., and Robert W. Barrett, *Wilderness Historic Resources Survey 1988 Season Report* (Yosemite: NPS, Yosemite Research Library, 1989); *idem.*, *Wilderness Historic Resources Survey 1989 Season Report* (Yosemite: NPS, Yosemite Research Library, 1990). In addition to these two larger reports are shorter reports for the seasons 1990-95 on file in the Yosemite Research Library. A very useful study of blazes north and east of Yosemite National Park and out into the Great Basin is J. Mallea-Olaetxe, *Speaking through the Aspens, Basque Tree Carvings in California and Nevada* (Reno: University of Nevada Press, 2000).

[33]California State Agricultural Society, *Transactions*, 1864–65, 69, referring to the San Joaquin Valley and Sierra as "that great field known as the commons," a place where stock could be grazed in great numbers. Another, later statement of the commons as simply open, unrestricted access is in Coville, "Sheep Grazing,"155. On the basis of the open-access interpretation of the commons, Coville proposed a permit system for grazing, which was soon adopted. Will C. Barnes, *Western Grazing Grounds and Forest Ranges* (Chicago: The Breeder's Gazette, 1913), 231, uses the idea of unregulated access as a justification for federal regulation. Historians have likewise accepted the idea of commons as open access, often relying on Muir to work the "hoofed locusts" idea into their work. See, for example, Francis P. Farquhar, *History of the Sierra Nevada* (Berkeley: University of California Press, 1966), 242; Alfred Runte, *Yosemite, the Embattled Wilderness* (Lincoln: University of Nebraska Press, 1990), 46-47; Lary M. Dilsaver and William C. Tweed, *Challenge of the Big Trees* (Three Rivers, Calif.: Sequoia Natural History Association, 1990), 35-36, 59.

[34]Bonnie J. McCay and James M. Acheson, eds., *The Question of the Commons, the Culture and Ecology of Communal Resources* (Tucson: University of Arizona Press, 1996), 4-9; Roland Brouwer, *Planting Power: The Afforestation of the Commons and State Formation in Portugal* (The Netherlands: Eburon, 1995), pp. 153-56, 300.

[35]J. W. Fernandez, "The Call to the Commons: Decline and Recommitment in Asturias, Spain," in McCay and Acheson, eds., "Question of Commons," 270-271, points out that even in our own day, when many commons have become moribund, they continue to have a "psychological reality" among those who remember those earlier institutions, a reality that continues to influence how people in those villages and countrysides structure their activities now.

[36]Louis Irigaray and Theodore Taylor, *A Shepherd Watches, A Shepherd Sings* (Garden City, N.Y.: Doubleday & Co, Inc., 1977), 12-13, adding that "the sheep know the difference"; see also Mallea-Olaetxe, *Speaking through Aspens*, 89-90.

[37]Wentworth, *America's Sheep Trails*, ch. 23, on the range wars which occurred in the mountain states like Colorado and Wyoming as sheep moved east from California after 1877 into areas previously dominated by cattle. Barnes, *Western Grazing Grounds*, 27, 29, says the movement of sheep into the mountain states brought overgrazing and range wars which in turn brought a demand for government control of the range. There was occasional bloodshed in the Sierra, sometimes recognized in place names like Graveyard Meadow (Peter Browning, *Place Names of the High Sierra* [Berkeley, Calif.: Wilderness Press, 1986], 86). The so-called range wars happened in Hollywood rather than in the Sierra. It has been easier to inflate stories of violence than to find records of peace. See *Speaking through Aspens*, Mallea-Olaetxe, 105; Irigaray and Taylor, *Shepherd Watches*, 87-89. Sandra Ott, *The Circle of Mountains, A Basque Shepherding Community* (Reno: University of Nevada Press, 1993), 131-32, 143-44, shows how Basque herders in the old country attempted to defuse conflict, not always successfully, to benefit the community. George B. Sudworth, "Stanislaus and Lake Tahoe Forest Reserves, California, and Adjacent Territory," in U.S., Department of the Interior, Geological Survey, *Twenty-First Annual Report . . . 1899-1900, Part V—Forest Reserves* (Washington, D.C.: Government Printing Office, 1900), 553, even though Sudworth was a forester who hated sheep, he notes that unfenced forest lands were held by right of priority and sometimes by common agreement between cattlemen and sheepmen on the Stanislaus reserve. Sawyer, *Nevada Nomads*, 51, points out that there were few conflicts between the two interests in Nevada because the same men often ran both kinds of stock. "An Ugly Rumor," *Inyo Independent*, (19 July 1876), p. 3, col. 1, reported shootings in Monache Meadow between cattlemen and sheepmen during the 1877 drought. The shootings did not happen but local stockmen like John Broder rode out to prevent trouble. Stories like this one rarely made the newspapers. It was easier to dismiss sheepherders as low-class beings who were more prone to violence than the more civilized, citizen mountain users.

[38]Muir, *My First Summer*, 354, lists 13 dead and 2,025 returned safely. Delaney's losses were probably low, but they contrast sharply with high mortality rates in drought years and in the Great Basin. Spencer *et al.*, "Sheep Industry,"estimated average annual losses for the range-sheep industry in 1923 to be between 7 and 10 percent. Coville, "Sheep Grazing," p. 126, thought losses in the Oregon mountains were usually about 1 percent in 1897. Annual losses were higher earlier when there were fewer controls on disease and more victims of predators. Daniel O. Holmes, "Cultural Influences on Subalpine and Alpine Meadow Vegetation in Yosemite National Park," in Robert M. Linn, ed., *Proceedings of the First Conference on Scientific Research in the National Parks, New Orleans, Louisiana, September 9-12, 1976*, National Park Service Transactions and Proceedings Series, No. 5 (Washington, D.C.: Government Printing Office, 1979), II:1269, using carrying capacity figures, shows that Yosemite's high meadows never reached capacity and that time limited impacts of grazing.

[39]Flint, "Textile Fibers," 482-483.

[40]Sandra Ott, *Circle of Mountains*, 34 on pasture rotation, *ibid.*, 35, on the seasonal round of work, *ibid.*, 145, on setting date for ascent to pasture. Coville, "Sheep Grazing," 124-26, on seasonal routine and the movement to mountains "keeping pace with growth of vegetation that follows the snow"; *ibid.*, 133, on light, wet feed in spring producing "soft" fat that does not last, and strong, dry fall feed that produces a "hard" fat, longer lasting for long drives; *ibid.*, 136, on the danger of trampling early wet grass reducing more nutritious plants in the future. Barnes, *Western Grazing Grounds*, 173-74, shows that movement within a range was also necessary. P. Beveridge Kennedy and Samuel B. Doten, *A Preliminary Report on the Summer Range of Western Nevada Sheep*, Nevada State University Agricultural Experiment Station, Bulletin no. 51 (Reno: Nevada State University, December 1901): plates 2 and 26 show sheep cooling off on snowbanks, pp. 7, 8, 21 discuss trampling early grass, and pp. 14, 16, 17 point out the values of brush for browse through much of the season. Bob Barrett, a working cowboy, of Hornitos, Calif., has said many times that early wet grass is "washy feed, got nothing in it." Moving along slowly behind the snowmelt, browsing more on brush than grass was exactly what Patrick Delaney's flock was doing most of July 1869 in Muir, *My First Summer*, 137-261. Holmes, "Cultural Influences," 1268, notes herder and ecological restraints on overgrazing.

[41]"Report of [Yosemite] Acting Superintendent Joseph E. Caine" (January 1899), in U.S., Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ended June 30, 1898* (Washington, D.C.: Government Printing Office, 1898), 1059.

[42]NPS, Yosemite National Park, Wilderness Historic Resources Survey, field records for Blazes 503 (TGS), 442 and 41 (HKR), and 353 (JRS).

[43]Muir and Delaney started down 9 September 1869, in Muir, *My First Summer*, 341-42. Ott, *Circle of Mountains*, 8, 167–68, relates the date of descent in the Pyrenees to early snow storms. J. H. Wegner, "Evidence of Old Indian Trail Located," *Yosemite Nature Notes*, 9:7 (July, 1930), 67, noted a place in western Yosemite called Lightning Ridge because lightning "was said to have killed a large number of sheep there." Another ridge a few miles east was also called "Lightning Ridge" from lightning-struck sheep under John Connell (Muir's "Smoky Jack"), and is still a regular target for lightning strikes and small fires.

[44]John Bigelow, Jr., *Report of the Acting Superintendent of the Yosemite National Park in California to the Secretary of the Interior, 1904* (Washington, D.C.: Government Printing Office, 1904), 6-7, on his proposal for grazing to control fire, appended Exhibit F, a copy of the 1896 McClure Map of the Yosemite National Park overprinted to show areas of grazing by cattle and sheep as well as areas of deer and fires. Cattle also used the tops of mountains that had risen above the ice, *nunataks*, and on each one of these was a cattleman's homestead claim. Tau Rho Alpha, Clyde Wahrhaftig, and N. King Huber, *Oblique Map Showing Maximum Extent of 20,000-Year-Old (Tioga) Glaciers, Yosemite National Park, Central Sierra Nevada, California*, U.S. Geological Survey Map I-1885 (Reston, Va.: USGS, 1987). Holmes, "Cultural Influences," 1267, shows the ecological limits of fire in the high country. Coville, "Sheep Grazing," 151, shows how the Cascade range in Oregon was divided between cattle and sheep by ecological characteristics.

[45]Stephen J. Pyne, "Paiute Forestry," in *Fire in America, A Cultural History of Wildland and Rural Fire* (Princeton: Princeton University Press, 1982), 100ff.; Henry T. Lewis, "Patterns of Indian Burning in California: Ecology and Ethnohistory," in, *Before the Wilderness, Environmental Management and Native Californians*, Thomas G. Blackburn and Kat Anderson, eds. (Menlo Park,

Calif.: Ballena Press, 1993), 55-116, but see also pp. 46-51 for comment by the editors on this paper. One of many examples of Indians who worked as sheepherders occurs in Shepherd, "Prairie Experiences," 168.

[46]Ott, *Circle of Mountains*, 20, 144; Fernandez, "Call to Commons," 272-73, in Spain; Jeronima Echeverria, "Basque 'Tramp Herders' on Forbidden Ground: Early Grazing Controversies in California's Natural Reserves," *Locus*, 4:1 (Fall 1991), 52, on burning the commons.

[47]McCay and Acheson, *Question of Common*, 11.

[48]Wilderness Historic Resources Survey, field records for MR (blazes 28, 187, 278, 411, and 1525); HM (Blazes 83, 86, 450). N. F. McClure, "Explorations among the Cañons North of the Tuolumne River," *Sierra Club Bulletin*, 1:5 (January 1895), 185-86, a cavalryman's view of herder names and the changing of those names. The name Randall's Canyon was changed by the cavalry to honor a topographer and to remove the herder's name from the map. HKR, however, was using his canyon at least through 1892, according to Blaze 452.

[49]Wilderness Historic Resources Survey, field records for Blazes 266 or 375. Mallea-Olaetxe, *Speaking through Aspens*, 14-15, on Basque paperless culture; *ibid.*, 58, on literacy. In one case a claim to territory might also have involved a claim to literacy, when IROZ carved his barely decipherable name with great effort but also with some pride in making his statement in Yosemite in 1899-1900. See Wilderness Historic Resources Survey, field records for Blazes 431, 630, 636, 646, 665, 690, all IROZ.

[50]Mallea-Olaetxe, *Speaking through Aspens*, 25-26, on territory; *ibid.*, 86 on respecting boundaries; Irigaray and Taylor, *Shepherd Watches*, 87.

[51]Wilderness Historic Resources Survey, field records for JC (Blazes 1599, 1602), MAT (Blaze 1598), and SAM (Blazes 1593, 1594, 1601). See also James B. Snyder, "Wilderness Historic Resources Survey Summary Report on the 1995 Season"(1996), 11-14, on file in the Yosemite Research Library.

[52]McClure, "Explorations," 168–69, 172, 176–77, 185–86. Mallea-Olaetxe, *Speaking through Aspens*, 134, notes the carvings of one herder scattered over about three hundred miles in the northern Sierra. Others herding around and through the central and southern Sierra covered as much ground. Theirs was not just a localized knowledge as the cavalry claimed, but a large scale and quite detailed knowledge considering the lengths of their seasonal travels in different environments. See also note 43, above.

[53]In the administration of the new park, the main task of the cavalry was to prevent trespass by commercial interests. The orientation of the cavalry, therefore, was considerably different from the orientation of high-country users such as Indians and herders. The cavalry had to deal immediately with geography. There were no comprehensive maps or guides. By 1895 the cavalry had developed its own map of the park as well as a trail network geared toward border patrol and trouble spots such as Tuolumne Meadows and Devils Postpile. They assumed that patrol of the boundaries would prevent trespass, and so their trail system was a grand circuit of the old park that swung east from Wawona and Camp A. E. Wood along the San Joaquin River to Reds Meadow and the Minarets, up to Tuolumne and the canyons north to Hetch Hetchy, then back to Wawona through Yosemite Valley. The cavalry used pieces of older routes, tying them together with some trails in new locations to make administrative through routes. As a result, protection of the park tended to be protection of its boundaries. The geographic knowledge of most cavalrymen was specific knowledge confined largely to main patrol routes and post locations. A perimeter trail is proposed by Capt. Alex Rodgers in his 26 August 1897 report to the Secretary of the Interior, in Yosemite National Park Museum, cat. no. 19650, Record of Letters Sent [1891-1900], 204.

[54]Wilderness Historic Resources Survey, field records for Blazes 1331-57. See also James B. Snyder, "Wilderness Historic Resources Survey Summary Report on the 1994 Season"(1995), 7–8, on file in the Yosemite Research Library.

[55]A number of Yosemite acting superintendents proposed light burning. "Report of Acting Superintendent J. W. Zeveley" [6 January 1899], in U.S., Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ending June 30, 1898. Miscellaneous Reports* (Washington, D.C.: Government Printing Office, 1898), 1056-57; E. F. Willcox, "Report of the Acting Superintendent of the Yosemite National Park" [28 October 1899], in U.S., Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ended June 30, 1899, Miscellaneous Reports* (Washington, D.C.: Government Printing Office, 1899), 503; O.L. Hein,

"Report of the Acting Superintendent of the Yosemite National Park" [25 September 1902], in U.S., Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ended June 30, 1902. Miscellaneous Reports. Part I* (Washington, D.C.: Government Printing Office, 1902), 479; Jos. Garrard, "Report of the Acting Superintendent of the Yosemite National Park" [8 October 1903], in U.S., Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ended June 30, 1903. Miscellaneous Reports. Part* I (Washington, D.C.: Government Printing Office, 1903), 522; Bigelow, *Report* (1904), 382, 394. Gifford Pinchot, *A Primer of Forestry. Part I.—The Forest*, U.S., Department of Agriculture, Division of Forestry, Bulletin No. 24 (Washington, D.C.: Government Printing Office, 1900), 77ff. became the Forest Service statement of policy on forest fires. H. C. Benson, "Report of the Acting Superintendent of Yosemite National Park" [10 October 1905], in U.S., Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ended June 30, 1905. Report of the Secretary of the Interior and Bureau Officers, Etc.* (Washington, D.C.: Government Printing Office, 1905), 696-97, rejects the idea of light burning and establishes the policy of fire suppression in Yosemite. Coville, "Sheep Grazing,"137-43, pointed out problems sheepmen had with large fires and also concluded the practice of burning by sheepmen had been overestimated. He noted, as did Mallea-Olaetxe, *Speaking through Aspens*, 10, that much grazing occurred in old burns. Pinchot, however, read Coville's report selectively and continued to support fire suppression as the only way to increase timber production on national forests; see Pinchot's summary of the surveys of forest reserves preceding the Coville report (pp. 36, 38, 107-8), in which Pinchot was influenced by Muir and California politics to exclude sheep and fire from the Sierra Forest Reserve. William D. Rowley, *U. S. Forest Grazing and Rangelands: A History*, (College Station: Texas A & M University Press, 1985) 25-41, shows how Pinchot first accepted Muir's antigrazing stance but slowly changed to the idea of permits, although Pinchot's stance on fire remained one of suppression. On the reduction of grazing areas by the suppression of fire, see John O'Neal, *Two Blades of Grass Where Thousands Grew Before . . .* , a reprint of articles in the *Western Livestock Journal*, 31:16, 23, 29 (1 March, 1 April, 1 May 1953), recounting the experiences of cattlemen of several generations on the Sierra National Forest. George E. Gruell, *Fire in Sierra Nevada Forests, A Photographic Interpretation of Ecological Change Since 1849* (Missoula, Mont.: Mountain Press Pub. Co., 2001), shows the graphic changes in Sierran forests, brought in part by fire suppression policies, by pairing photographs of the same places often a century apart. Gruell explains the changes in these paired photographs as a result of fire suppression and supports the current scientific orthodoxy on fire and Sierra forest health. These photographs contradict the claim of Sudworth, "Stanislaus," 559, that cattlemen as settlers had an intense interest in fire suppression while transient sheepherders did not. Cattle, Sudworth thought, were not affected by encroaching brush.

[56]Bob Barrett of Hornitos, Calif., has told me of his grandmother's comment many times. In a recent, in a phone conversation he added that his family was setting fires long after 1905, wrapping the hooves of their horses in barley sacks so that Forest Service rangers could not track them. See also H. A. Heath and John Minto, "Condition of the Sheep Industry West of the Mississippi River," in U.S., Department of Agriculture, Bureau of Animal Industry, *Special Report on the History and Present Condition of the Sheep Industry of the United States*, D. E. Salmon, ed. (Washington, D.C.: Government Printing Office, 1892), 956, on increase in predators with fire suppression, *ibid.*, 962-68 with various comments on fire, showing the difficulty of sustaining traditional practices in the face of contemporary politics. Fire was obviously important to sheepmen, but strong support of fire also weakened opportunities for agreement on grazing forest lands in the Sierra.

[57]California State Agricultural Society, *Transactions*, 1864–65, 283.

[58]*Ibid.*, 1870–71, 4-5.

[59]Irigary and Taylor, *Shepherd Watch*, 92, 10-11; Ott, *Circle of Mountain*, 31; Douglass, *Echalar*, 28, 29. Brouwer, *Planting Power*, 146.

[60]Heath and Minto, *Condition*, 955-56; Brouwer, *Planting Power*, 146-47, 154-55 on brush collection for green manure, having the effect of keeping pastures cleared.

[61]Sudworth, "Stanislaus," 554–55, 446; Filbert Roth, "Grazing in the Forest Reserves," U.S., Department of Agriculture, *Yearbook of the United States Department of Agriculture, 1901*. (Washington, D.C.: Government Printing Office, 1902), 343-47; U.S., Senate, Doc.189, *Survey of Forest Reserves*, (1898), 38, 52, 72, 107.

[62]Sudworth, "Stanislaus," 556. Progressive politics and science argued over the highest, most efficient use of the forests' natural resources. The highest use was equated with wisdom, civilization, and public good; its opposite was equated with ignorance, savagery, and greed, a perfect moral spectrum in which to locate "hoofed locusts." Sheepmen were nomads; cattlemen were tillers of the soil, whose settlements and families were a better use. Barnes, *Western Grazing Grounds*, 215-16, argued that Forest Service permits were not discriminatory against sheepmen because the agency "manages forests not stock range." Sheepmen were nomads; cattlemen were settlers. The decision for cattle permits and against sheep was a determination "as to which of two good things is better for the whole people." Early Sierra Club member and engineer Marsden Manson, "Observations on the Denudation of Vegetation—A Suggested Remedy for California," *Sierra Club Bulletin*, 2:6 (June 1899), 295-96, thought that destruction of the protective balance of nature by sheep grazing had to be prevented while nature could recover (with human assistance): "this destruction ceases in the judicious use of this wealth of forest and of mountain pasture, and . . . it is only indifference and incivisim which permits greed and ignorance to go unrestrained until they destroy the balance." Manson's remedy was that "the wasteful and continuous devastation of pasture should be replaced by systematic utilization of these sources of wealth."

[63]Fernandez, "Call to Commons," 272, 277 on state-planted forests on commons in Spain. Minoti Chakravarty-Kaul, "Conclusion: And So the Commons," in *Common Lands and Customary Law, Institutional Change in North India over the Past Two Centuries* (Delhi: Oxford University Press, 1996), ch. 8, summarizes the argument on the gradual state "reallocation of resources like wastelands [common lands], thereby altering the property rights in them," and on state forest plantings on communal lands in the Punjab. Ramachandra Guha, "Scientific Forestry and Social Change"(ch. 3), and "Peasants and 'History" (ch. 8), in *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (Berkeley: University of California Press, 2000), comparing encroachments by forestry on the commons in Europe with those in the Himalayas. Brouwer, *Planting People*, 7-26, 73-82, 89-110, 146-79, on state forestry and the commons in Portugal; *ibid.*, 176, on the intervention by the state undermining social institutions at the village level.

[64]Rowley, 22, 24, 40. U.S., Senate, Doc. 189, *Survey of the Forest Reserves* (1898), 38, 39, on regulation rather than prohibition (using an example from British India): *ibid.*, 48, 107–8, on Sierra National Forest using much information from Muir's writings.

[65]Zeveley, "Report," 1055; Henry B. Clark, "Report of the Acting Superintendent of the Sequoia and General Grant National Parks, California" [31 August 1899], in U.S., Department of the Interior, *Annual Report of the Department of the Interior for the Fiscal Year Ending June 30, 1899. Miscellaneous Reports, Pt. 1* (Washington, D.C.: Government Printing Office, 1899), 508. The numbers game with sheep was widely played to demonstrate the severity of the supposed threat, to garner increased support for continued vigilance, and to prove success in preventing trespass. The 1898 figures given in the acting superintendents' reports on Yosemite and Sequoia were fabrications with no basis in fact. Heath and Minto, "Condition," 969, state that sheepmen themselves estimated that about ninety thousand sheep had used Yosemite regularly before the park was created. The number of carvings by sheepmen in a given year—a crude estimate of herder numbers in the park area—even in the drought years, suggests a similar total number of sheep in the Yosemite area. Reports of sheep caught and evicted from the parks provide no basis for the extravagant claims of 1898. A. E. Wood, "Report of the Acting Superintendent of the Yosemite National Park" [31 August 1891], in U.S., Department of the Interior, *Annual Report of the Secretary of the Interior for the Fiscal Year Ending June 30, 1892* (Washington, D.C.: Government Printing Office, 1892), III:660, estimated from his patrols that about ninety thousand sheep were grazing along the western and southern borders of the park. His estimate was probably high but in the ball park. Census records show the sharp decline in numbers of California sheep by 1900. Those records also show the movement of California sheep toward northern counties such as Lassen, Tehama, Humboldt, and Mendocino, which became the largest sheep and wool county. Furthermore, census enumerators began estimating range sheep as opposed to farm sheep in 1880 and counting range sheep by 1900. The range sheep numbers show the movement away from long drives by many sheepmen by 1900, and the dominance of range sheep by smaller operators, the "tramp sheepmen" who had flocks but little land base. Roughly 36 percent of the total number of California sheep in 1890 were range sheep (897,896), while only about 10 percent of California sheep in 1900 were range sheep (166,647). Some larger landowners like Daulton or

Ostrander continued to take their sheep to the mountains in 1890, which means census figures for California range sheep are probably low. However, the practice of selling spring lambs, which with mortality could account for 16 to 40 percent of the total number of sheep in the state, means that totals of sheep by county or state do not represent sheep that might have gone on the range in the Sierra or elsewhere. There is no accounting that can produce the 1898 estimates of sheep in Yosemite or Sequoia. U.S., Department of the Interior, Census Office, *Report on the Statistics of Agriculture in the United States at the Eleventh Census: 1890* (Washington, D.C.: Government Printing Office, 1895), 29, "Live Stock on Ranges, by States and Territories;" *ibid.*,32, 236, Table 7, "Sheep and Wool on Farms, by States and Territories," 238 Table 8 "Sheep and Wool on Farms, by Counties." U.S., Department of the Interior, Census Office, *Census Reports, Vol. V, Twelfth Census of the United States, Taken in the Year 1900, Agriculture, Part I, Farms, Live Stock, and Animal Products* (Washington, D.C.: U.S. Census Office, 1902), ccv-ccvii, "Range Sheep as Distinguished from Farm Sheep," *ibid.*, ccxiv, "Number of Sheep in the United States by States, and Territories: Summary 1860, 1880, 1890, and 1900," *ibid.*, 320, Table 26, "Number of Specified Domestic Animals, June 1, 1900, on Farms and Ranges . . . by States and Territories"; *ibid.*, 420-23, Table 35, "Number and Total Value of Specified Domestic Animals on Farms and Ranges, June 1, 1900, by Counties"—California," *ibid.*, 674, Table 49, "Wool, Mohair, and Goat Hair, Shorn in Fall of 1899 and Spring of 1900, by Counties. [Table] A. Wool." Also see Menzel, *Historical Geography*, 99, 105-06, 110-13, tables and maps showing redistributions of sheep in California between 1870 and 1900. In his "Report of the Acting Superintendent of the Sequoia and General Grant National Park" [11 September 1892], in US Department of the Interior, *Annual Report of the Secretary of the Interior for the Fiscal Year Ending June 30, 1892*, (Washington, D.C.: Government Printing Office, 1892), III:683, Joseph Dorst reported seeing only 9,600 sheep in the national park but, incredibly, estimated "that no less than 500,000 sheep have been feeding in the Kern and Kings River valleys . . . a greater number than ever before," even though he had made no patrols or counts there. He claimed the herders were mostly Basque "foreigners." Like Zeveley and others, Joe Dorst counted sheep the way Joe McCarthy counted communists.

[66]Sheep were permitted in some forest reserves in Oregon because several Oregon counties had strong sheep economies and political clout. Coville, "Sheep-Grazing," 149-54. Permits for sheep on some Oregon forest reserves were possible in part because Coville found that sheep owners in eastern Oregon were all American citizens. Herders there may have represented "a low class of humanity" ten years earlier, Coville wrote, but did not by 1898. In California, however, American herders felt themselves being pushed out of the sheep business by foreigners, especially Basques who were coming to dominate seasonal herding, accused of ignoring fence laws and of overstocking the country beyond the capacity to feed in winter. This competition seemed greater by the end of the century but was acknowledged also to be caused by increased dry farming, irrigation, and fruit culture. See Heath and Minto, "Condition," 968, 972–4; Douglass and Bilbao, *Amerikanuak*, 240. In effect, agricultural displacements in the Sierra divided California sheepmen between established and new herders (sheepmen and tramp herders), between citizen and noncitizen, between range and farm operations.

[67]Rowley, *U.S. Forest Service*, 22, 24, 31, 36-37, 60; Douglass and Bilbao, *Amerikanuak*, 237–38, 240; *U.S. Department of Agriculture, Agriculture Yearbook 1923* (Washington, D.C.: Government Printing Office, 1924) 236-37, 239-41, on the movement of range sheep to the mountain states; *ibid.*, 251ff, on range sheep; Wentworth, *America's Sheep Trails*, chps. 13, 14.

[68]As eldest son, Angel Arriet was probably in line to inherit the family home and farm. Douglass, *Echalar*, 40-43 on inheritance systems; *ibid.*, 124, 137–38, on reasons for emigration in the 1880s, including war, debt, depression. Mallea-Olaetxe, *Speaking through Aspens*, 108-11 on reasons for emigration; Angel Garcia-Sanz Marcotegui and Alejandro Arizcun Cela, "An Estimate of Navarrese Migration in the Second Half of the Nineteenth Century (1879-1883)," in *Essays in Basque Social Anthropology and History*, William A. Douglass, ed. (Reno: University of Nevada Basque Studies Program, 1989), 235-39; William A. Douglass, "Factors in the Formation of the New-World Basque Emigrant Diaspora," in Douglass, *Essays*, 252–54.

[69]Outcalt, *History*, 409-11, with brief biography of Arburua, who was born in 1844 in Echalar, Spain, and came to California in 1866, getting work through an uncle in San Francisco. After repaying his fare to California, he started a sheep business, suffering severe losses in the 1877 drought. When he hired the Arriets, Arburua was purchasing land in Merced County on which

he raised cattle and sheep. In 1915 he divided his holdings among his children and settled down on a small farm. The Arriets came to California and got their start through Basque connections in the same way Arburua had. It has been argued that Basques in Argentina provided the greatest source of California sheepmen. See Douglass and Bilbao, *Amerikauak*, 210-11, 401n; Echeverria, "Basque'Tramp Herders,'" 42-43. While this seems true in the mid nineteenth century, it appears that Basque herders in California came more frequently directly from the Pyrenees in the late nineteenth century. Arburua and the Arriets are good examples. Garcia Sanz-Marcotegui and Cela, "Estimate," 243, 245, show the heaviest migration from rural mountain areas directly to America in the 1880s. I argue that, while the Argentinian experience with large-scale sheep ranching certainly prepared many Basques for duplication of that enterprise in the American West, the traditions and institutions of village life and commons still pervaded the approaches of many Basque immigrants, whether herders in the old country or not, to their conduct of themselves and sheep in the Sierra Nevada. Villages and commons were built on traditions of reciprocity, cooperation, and mutual assistance which ran through the culture, pertaining not just to the herding of sheep. See Ott, *Circle of Mountains*, 213.

[70]NPS, Yosemite National Park, Yosemite Research Library, cavalry files: Cavalry Patrol Reports 1896-1910, including the following reports: Sgt. William Alexander [?] to Adjutant, Camp A. E. Wood, 15 July 1903, reporting fifteen hundred sheep with A brand in Return Canyon; Sgt. William Alexander to Wawona, 15 July 1903, reporting the same herd in Return Canyon, Brand A; 1st Lt. James E. Fechel to Adjutant, Camp A. E. Wood, 16 July 1903, reporting eighteen hundred sheep, circle A brand, belonging to Angel Arriet in Return Canyon and driven out of the park; Sgt. William Alexander to Wawona, 19 July 1903, reporting fifteen hundred sheep with brand A, though unable to get names of herders, in Return Canyon; Sgt. William Alexander to Wawona, 23 July 1903, reporting one thousand sheep with brand circle A in Matterhorn Canyon for which no herder could be found; no author, Daily Patrol notes, Return Creek, 15 September 1903, reporting seven head of very wild sheep with brand circle A in Spiller Canyon. Yosemite National Park, Yosemite Museum, cat. no. 19654, Record of Letters Sent [1902-1905], pp. 116-17, Lt. Jos. Garrard to Sec'y of the Interior, 2 October 1903, on catching Arriet and his boasting; *ibid.*, 154, Lt. Col. Jos. Garrard to Sierra Forest Supervisor C. S. Newhall, 29 October 1903, on Arriet as a character witness; *ibid.*, 155-56, Lt. Col. Jos. Garrard to Sec'y of the Interior, 2 November 1903, claiming that Forest Reserve Ranger Charles Shinn's information is false and commenting on bribe attempts; *ibid.*, 459, Capt. H. C. Benson to Sec'y of the Interior, 31 July 1905, on herders claiming to have passed through the Stanislaus Forest without permits and without seeing any forest rangers. Yosemite National Park, Yosemite Research Library, cavalry file: Cattlemen requesting permission to take their cattle and stock through the park into their private land, which includes Sierra Forest Supervisor Charles H. Shinn to Maj. John Bigelow, Jr., 5 September 1904, complaining that "the Park System of being so easy with sheep is the greatest possible injury to this Reserve, and is stopping my improvement work." Garrard, "Report of the Acting Superintendent" [8 October 1903], 521 on Arriet. On bribery attempts, see also Echeverria, "Basque 'Tramp Herders,'" 54, and Dorst, "Report," [1892], 689.

[71]Ott, *Circle of Mountains*,132, 143-44, 149, on ritual dueling by song and on practical jokes; Robert Laxalt, "The Basque Troubador"in his *In a Hundred Graves, A Basque Portrait* (Reno: University of Nevada Press, 1986), 32-40; Mallea-Olaetxe, *Speaking through Aspens*, 62-64, 100-101; Echeverria, "Basque 'Tramp Herders,'" 53, on humor in evasion of forest authority; Roslyn M. Frank, "Singing Duels and Social Solidarity: The Case of the Basque *Charivari*," in Douglass, *Essays*, 43-80; M. E. R. Nicholson, "Basque Conflict Management Choices," in Douglass, *Essays*, 81-105, covers the range of Basque history but is still relevant to Basque herder practices in California in 1903.

72Vandor, *History*, II:2465, on Pedro Arriet with portrait, *ibid.*, 2484 on Angel Arriet with portrait.

[73]J. M. Powell, *The Public Lands of Australia Felix: Settlement and Land Appraisal in Victoria 1834-91 with Special Reference to the Western Plains* (Melbourne: Oxford University Press, 1970), 54, but see also 24-29, 50-54, 89-95, 116-17, 145-70, 173, 188, 221, 258-65. William Epps,"New South Wales," *Land Systems of Australasia* (London: Swann Sonnenschein and Co., 1894), 17-23, ch. 3; "Victoria," (ch. 5) is a nearly contemporary history of Australian land laws usefully summarizing and quoting from the many measures. Beverley Kingston, *The Oxford History of Australia, Volume 3: 1860-1900,*

Glad, Confident Morning (Melbourne: Oxford University Press, 1988), 40-41, 258-70, pointing out, as Powell does, the influence of Henry George in late nineteenth century Australian land law. Philip McMichael, *Settlers and the Agrarian Question: Foundations of Capitalism in Colonial Australia* (Cambridge: Cambridge University Press, 1984), 216-32, 243-49, relating land policy to state formation and economic change. Lynnette J. Peel, "History of the Australian Pastoral Industries to 1960," in G. Alexander and O. B. Williams, eds., *The Pastoral Industries of Australia, Practice and Technology of Sheep and Cattle Production* (Sydney: Sydney University Press, 1973), 46-55, with a focus on land policy as it related to sheep as well as vegetation change.

[74]Charles J. Kenworthy, "Wool-Growing in Australia," in U.S. Commissioner of Agriculture, *Report for the Year 1864* (Washington, D.C.: Government Printing Office, 1865), 204-23, esp. 204-5 on sheep pasture leased "at an annual rental based upon the number of animals each run is supposed to support or 'carry.'" This *Report*, 471-87, also carried Wilson Flint's article on "Textile Fibres of the Pacific Coast," reprinted from the *Transactions* of the California State Agricultural Society, 1864-65.

[75]U.S., Department of the Interior, *Report of the Secretary of the Interior . . . at the Beginning of the Second Session of the Forty-Fifth Congress*, vol. 1 (Washington, D.C.: Government Printing Office, 1877), I:xvi, xix of Schurz' report, and 24-25 of Williamson's report. See also Paul W. Gates, *History of Public Land Law Development* (Washington, D.C.: Government Printing Office, 1968), 546, 548-51.

[76]William Hammond Hall, *To Preserve from Defacement and Promote the Use of the Yosemite Valley* (Sacramento: State Printing Office, 1882), 6-8. The report was reprinted in California, Commissioners to Manage the Yosemite Valley and the Mariposa Big Tree Grove, *Report . . . 1885-86* (Sacramento: State Printing Office, 1886), printed separately and included in the *Appendix to the Journals of the Senate and Assembly of the Twenty-Seventh Session of the Legislature of the State of California, Volume I* (Sacramento: State Printing Office, 1887). Theodore A. Goppert, "The Yosemite Valley Commission, The Development of Park Management Policies 1864-1905" (M.A. thesis, California State College, Hayward, June 1972), 89-90, concludes that the "legislature, nearly consistently, refused to support the park with funds," a conclusion adopted by Johnston, *Yosemite Grant*, 243. William C. Fankhauser, *A Financial History of California: Public Revenues, Debts, and Expenditures*, University of California Publications in Economics, 3:2 (13 November 1913), Table V, shows the erratic, insufficient funding for the Yosemite Grant. The 1864 congressional act establishing the grant provided for permits for income to support the grant. This precedent was carried over into other acts for the establishment of Yellowstone National Park (1872), Sequoia and General Grant national parks (1890), Yosemite National Park (1890), and even the National Park Service (1916), continuing this source of income for park management.

[77]A full discussion of the 1881 proposals will appear in the annotations for the planned 2004 publication of Hutchings, "A Photographic Expedition to Fisherman's Peak."

[78]Heath and Minto, "Condition," 975, point out that San Joaquin Valley sheepmen again proposed modeling public-lands range use on Australian practices in 1892.

[79]Barnes, *Western Grazing Grounds*, 213-14.

[80]Harold K. Steen, *The U. S. Forest Service, A History* (Seattle: University of Washington Press, 1976), chs. 4, 5, illustrates these trends. Rowley, *U.S. Forest Service*, chs. 3, 4, shows these trends specifically in relation to grazing. F. R. Marshall, "Suggestions from Australasia to American Sheep Raisers," in U.S. Department of Agriculture, *Yearbook 1914* (Washington, D.C.: Government Printing Office, 1915), 319-38, esp. 321-22, on land tenure, shows the continuing American interest in the Australian example. Marshall also wrote *Features of the Sheep Industries of United States, New Zealand, and Australia Compared*, U.S., Department of Agriculture Bulletin no. 313 (Washington, D.C.: Government Printing Office, 1915).

[81]Paul W. Gates, *History of Public Land Law Development* (Washington, D.C.: Government Printing Office, 1968) 511, on uninformed land laws, *ibid.*, 569, on reactions to Cleveland's forest reserves.

Nature and Progress in Yosemite

JEN A. HUNTLEY-SMITH

"Lying to the eastward of the Sierra throughout the ranges of the Great Basin," wrote John Muir, ruins of dead mining towns "waste in the dry wilderness like the bones of cattle that have died of thirst." Muir is far better known as the protector of scenic wilderness in the mountains of his adopted Sierra than as a critic of the Great Basin, yet in his essay on "Nevada's Dead Towns," originally published in 1879, he uses a Calvinist concept of wilderness to blast the Great Basin as the site where dreams of fabulous wealth drove prospectors insane. "Perhaps one in a hundred of these brave prospectors would 'strike it rich,' while ninety-nine died alone in the mountains or sank out of sight in the corners of saloons, in a haze of whiskey and tobacco smoke." In contrast to California, where upon "arrival on any portion of the Sierra gold belt, [miners] at once began to make money," the ruins of Nevada's dead towns were "monuments of fraud and ignorance—sins against science."[1]

John Muir was not the first, nor the last, commentator to contrast Nevada unfavorably with California. More recently Rebecca Solnit's *Savage Dreams* offers a meditation on the contrast between the "sacrificial" landscape embodied in the Nevada Test Site and the "sacred" landscape of Yosemite—the two so close together in geographical space but with widely divergent social meanings.[2] But John Muir's contemplation of Nevada's dead mining towns brings the divergent meanings of Yosemite and the Great Basin much closer together in chronological time as well as geographical space. Furthermore, the irony of Muir's essay, written as it was on the eve of his public career as promoter and defender of the sacred quality of the Sierra, is that the cultural, scientific, and financial apparatus that made Yosemite possible depended in large part on the wealth made in the mines of Nevada (and elsewhere in the West). Yosemite was necessary as a sacred place to help urban white elites construct their

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identity in an increasingly secular and modernizing world. Thus, the early conservation and preservation efforts to set aside scenic areas from certain kinds of development were in fact deeply dependent upon, and supportive of, the process of industrialization running rampant in the late nineteenth century.

In Muir's Nevada essay, "wilderness" is not a treasure in need of preservation, but a very artifact of the folly of humankind:

> In one canyon of the Toyabe range, near Austin, I found no less than five dead towns without a single inhabitant. The streets and blocks of "real estate" graded on the hillsides are rapidly falling back into the wilderness. Sagebrushes are growing up around the forges of the blacksmith shops, and lizards bask on the crumbling walls . . . . While traveling southward from Austin down Big Smoky Valley, I noticed a remarkably tall and imposing column, rising like a lone pine out of the sagebrush on the edge of a dry gulch. This proved to be a smokestack of solid masonry. It seemed strangely out of place in the desert . . . . The tools of the workmen are still lying in place beside the furnaces, as if dropped in some sudden Indian or earthquake panic and never afterwards handled. These imposing ruins, together with the desolate town, lying a quarter of a mile to the northward, present a most vivid picture of wasted effort. Coyotes now wander unmolested through the brushy streets, and of all the busy throng that so lavishly spent their time and money here only one man remains—a lone bachelor with one suspender.[3]

Although this connection between wilderness and the decaying mining town may strike a modern reader as odd, it belies the extensive cultural work that has gone into the creation of the modern idea of wilderness, as William Cronon and others have noted.[4] Yosemite, first as a federal grant to the state of California, and then as a national park, was the site of the birth of this idea. As Kevin Michael DeLuca argues, the idea of wilderness in American culture operates as myth, more dependent on symbolic heroes like John Muir, and symbolic struggles like the fight to save Hetch Hetchy, than on analysis of the complex politics of history. But as environmental historians in the last decade have turned to just that project, they have begun to understand the class and race biases embedded in the discourses of John Muir and the photography of Carleton Watkins, both of whom exposed and interpreted Yosemite to a wide middle-class audience in the second half of the nineteenth century.[5] Wilderness scenery was linked to late nineteenth-century industrial developments not only through class and race discourses privileging elite whites, but also through the more mundane and material work necessary to bring sensitive tourists (and their dollars) into contact with the landscape. In addition, many of the most vocal and active supporters of Yosemite were either themselves industrialists or from families whose wealth had come from the mines, railroads, and other industrial productions in the Far West.[6]

The production of Yosemite as a sublime wilderness occurred on multiple levels: cultural, material, religious, social, political, and economic. For the purposes of this essay, I wish to focus on uncovering the material and technological processes involved in the cultural production of landscape, and the social-class dimensions implied therein. My primary text is the 1886 volume

entitled *In the Heart of the Sierras: the Yo Semite Valley and the Big Tree Groves*, by James Mason Hutchings. This book, nearly five hundred pages long, was published as a keepsake volume for tourists or as a means through which readers could vicariously experience Yosemite.[7] James Mason Hutchings has largely been forgotten by the twentieth century, although he and John Muir were closely associated. When Muir arrived in Yosemite in 1869, Hutchings owned the Hutchings House hotel and a sawmill he couldn't get to work. Hutchings employed Muir to fix the sawmill, and to keep an eye on Hutchings's family and business affairs while he was on the East Coast.[8] Despite Muir's enduring legacy, Hutchings was critical to Yosemite's growing fame in the nineteenth century, both as hotelier and as publisher. Both the book as an artifact, and its author as a tireless tourist promoter, illustrate the cultural and material processes that bound wilderness and industry together in late nineteenth-century America.

James Mason Hutchings was born in Towcester, England, in 1820, and came to California with the 1849 gold rush. He was one of the first whose mining profits (although small compared to later, more famous fortunes) financed the cultural production of California's scenic landscapes. After mining for a short time and investing in a canal company, he became a full-time publisher and book distributor.[9] In 1855, Hutchings moved to San Francisco and set up a publishing firm and bookstore in partnership with Anton Rosenfield. For six years, the firm of Hutchings and Rosenfield was one of California's most prolific publishers. In addition to their most famous publication of this period, *Hutchings' California Magazine*, Hutchings and Rosenfield published almanacs, tourist guides, maps to the Comstock mines, celebrations of industry, pictorial sheets, lithographs, children's books, and keepsake volumes. Their office at 146 Montgomery Street was also a shop, carrying "books, letter paper, writing materials of any kind, magazines, steamer papers, views of California scenery, musical instruments, pocket knives, paper cutters . . . or anything generally kept in a book and stationery store."[10]

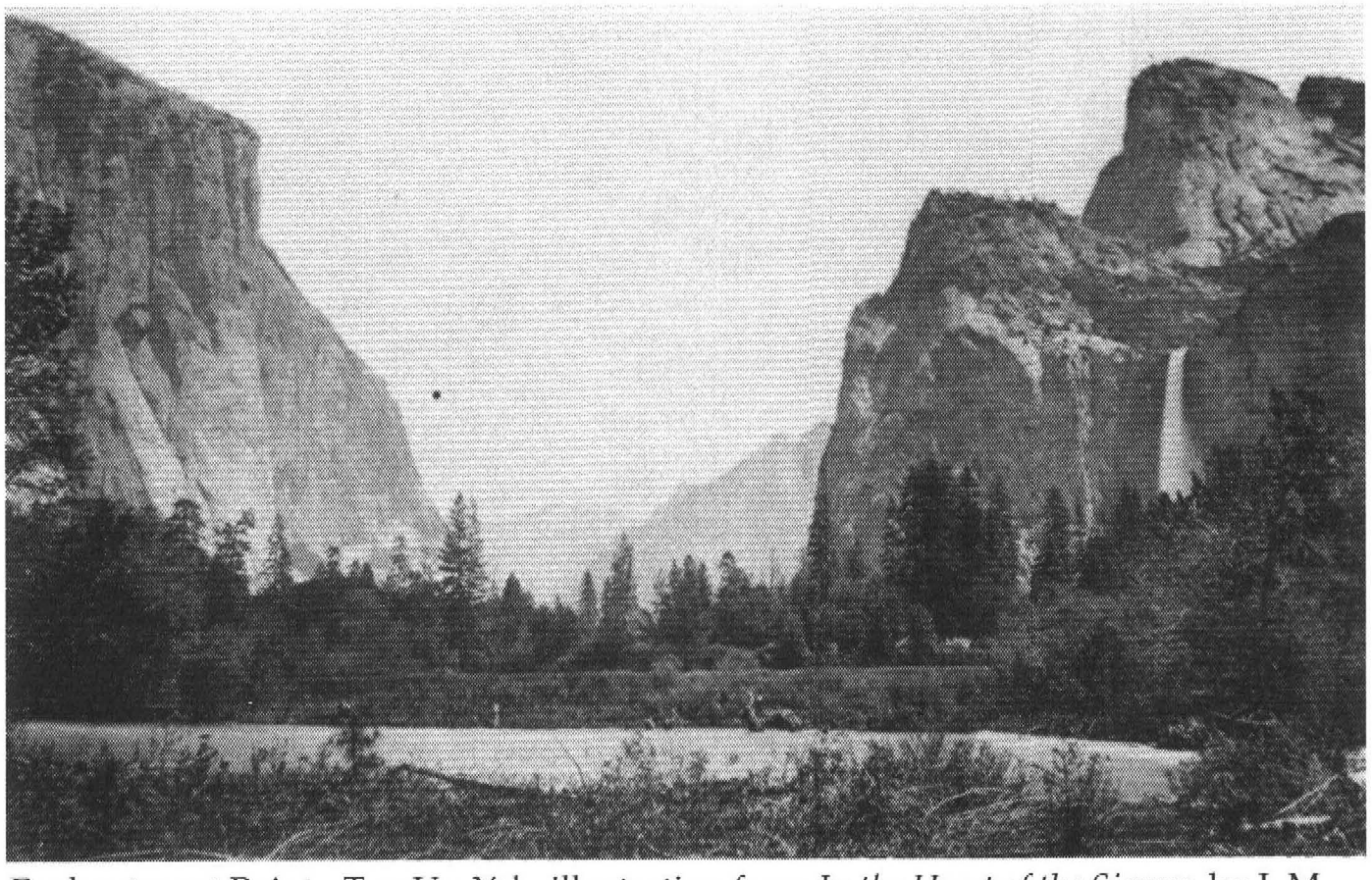
In the summer of 1855, the same year that Hutchings moved to San Francisco, he organized the first nonmilitary Anglo excursion in search of the Yosemite waterfall. He was accompanied on this trip by his old friend from England Walter Millard and the artist Thomas Ayres, as well as two Miwok guides. The five took about ten days to tour the valley and take sketches of its major features. Hutchings immediately began publishing accounts of the valley, first with an article in the *Mariposa Gazette* newspaper, and second with a lithographic print based on Ayres's sketches of the "Yo-Hamite Falls." Throughout his San Francisco publishing career, Hutchings featured Yosemite prominently in nearly all of his publications. He also organized tour parties to bring prominent individuals, such as the Reverend William A. Scott, to the valley. In 1862, he quit his publishing business and began the arrangements to acquire property and move into Yosemite, which he did in 1864. Together with his wife and mother-in-law, Hutchings managed several businesses for the tourist trade,

including a hotel, a sawmill, a stock operation, and efforts at building trails and roads. Thereafter, until his death in 1902, Hutchings was a tireless, if often controversial, promoter of Yosemite's sublime scenery to a middle- and upper-class audience increasingly receptive to the cultural value of such landscapes.[11]

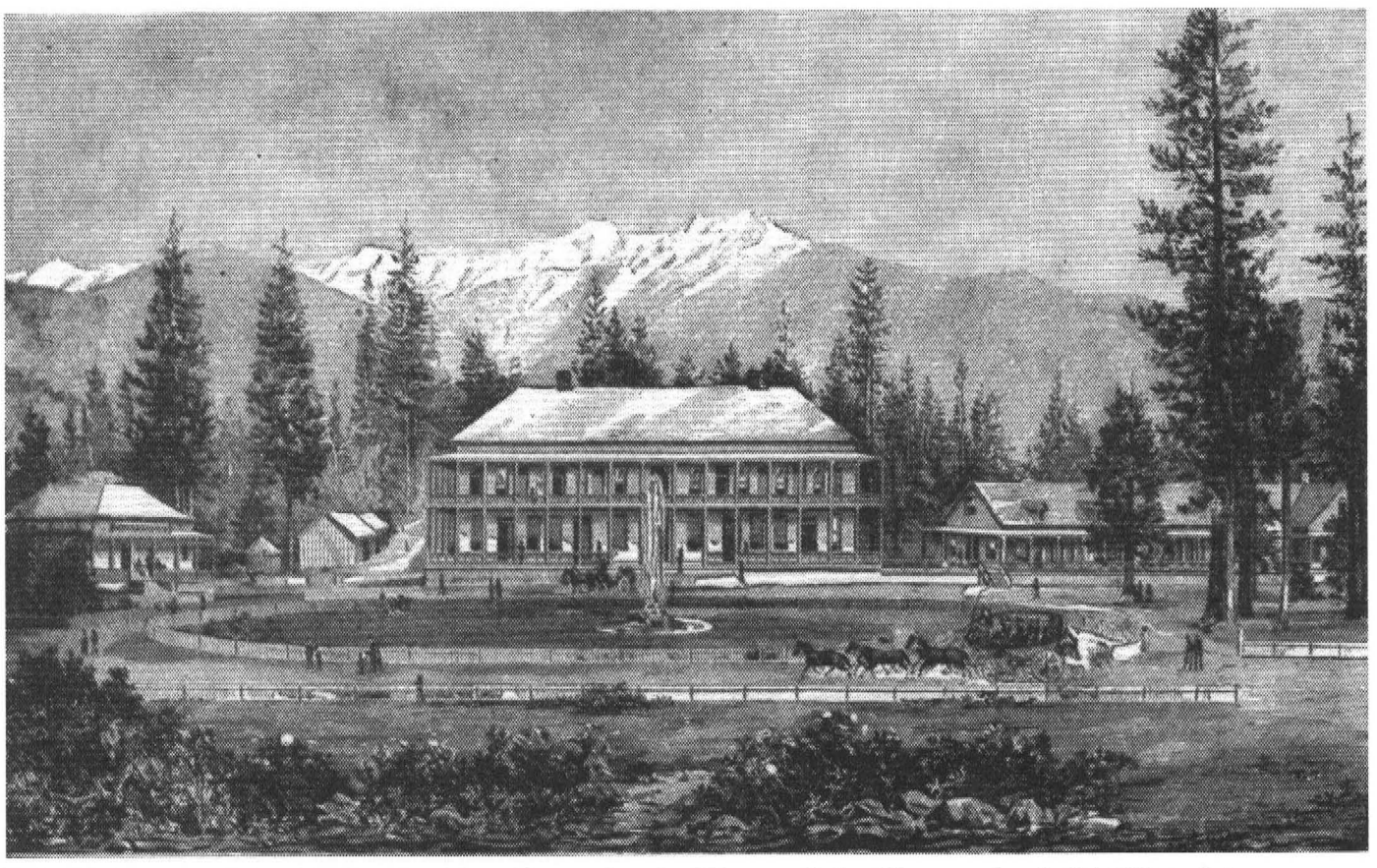
Hutchings's long career involvement with Yosemite positions him in multiple discourses over both wilderness and industrialization. In his publicizing work, he consistently experimented with and promoted the latest technologies of representation and communication. In his work with the tourist trade, Hutchings managed the concrete details of bringing sensitive souls into contact with sublime nature. In his efforts to appreciate and interpret Yosemite landscapes, Hutchings continually sought to educate himself in the latest scientific questions. And, in his efforts to maintain his land claims in the face of the first grant of public land, Hutchings found himself embroiled in controversies over land disposition that framed the post-Civil War process of incorporating regions more tightly into national economic and political control. Shortly after the end of his tenure as Yosemite Guardian, Hutchings wrote and published *In the Heart of the Sierras*. Like all of his other publications, *In the Heart* reveals Hutchings's many connections to American intellectual trends, but here I want to focus on the interpretive role of science and sublimity at a time when the American conservation movement was in its formative stages.[12]

Scientific discourse, together with the imagery and emotional tone of the romantic sublime, were the two themes dominating *In the Heart*. Hutchings combined a history of Yosemite and the Big Trees with his own autobiography: "as the history of Yo Semite, for nearly a quarter of a century, has been so closely interwoven with the filaments and threads of one's own life."[13] Although Hutchings published a few additional pieces after *In the Heart*, this semiautobiographical work represents the crowning achievement of his career in publishing California landscapes. As with several of his other publications, Hutchings wove together new material with old, some of which dated to his earliest scrapbook and diaries from the 1850s. Reading *In the Heart of the Sierras* as the culmination of more than thirty years of publishing gives one the curious sense of moving through a textual palimpsest, in which illustrations and text from the era of the California gold rush are interleaved with the most recent in photographic technology and discussions of the latest scientific controversies.

Hutchings published *In the Heart of the Sierras: The Yo Semite Valley, both Historical and Descriptive, and Scenes by the Way . . .* in Oakland at the Pacific Press Publishing House. The Pacific Press published a variety of pieces connected to California, many of them frankly promotional of local communities.[14] The 496-page volume had a gilt-stamped cloth binding and contained more than 150 illustrations, ranging from reprints of Hutchings's earliest woodcut engravings to lithographs of paintings and photolithographed images of Yosemite produced by Israel Ward Taber.[15] Its heft and elegant printing, together



Enchantment Point - Too-Un-Yah, illustration from *In the Heart of the Sierras*, by J. M. Hutchings (Oakland, Calif.: Pactific Press Publishing House, 1886).



The Wawona Hotel, illustration from *In the Heart of the Sierras*, by J. M. Hutchings (Oakland, Calif.: Pactific Press Publishing House, 1886).

General view of the Yo-semite Valley, from the Mariposa Trail. Illustration from *Scenes of Wonder and Curiosity in California. A Tourist's Guide to the Yo-Semite Valley*, by J. M. Hutchings (New York and San Francisco: A. Roman and Company, Publisher, 1870).

Yosemite Valley. Illustration from*Scenes of Wonder and Curiosity in California. A Tourist's Guide to the Yo-Semite Valley*, by J. M. Hutchings (New York and San Francisco: A. Roman and Company, Publisher, 1870).

with the card-stock photographs, indicated that this book was intended to be read at a leisurely pace, not as a travel guide, but perhaps as a remembrance. Hutchings did reprint a tourist's edition of *In the Heart*, a fact that reinforces this distinction.

The book as a material artifact was deeply bound up with the latest technological developments of the publishing industry. Its photolithographs of the Taber/Watkins photographs represented the most recent efforts to translate photographic images into the printed page. Hutchings, or the Pacific Press, also apparently offered *In the Heart* for sale through subscription methods, offering consumers choices among bindings and prices. Subscription sales were a common marketing technique for late-century publishing houses attempting to tailor their production to demand and drive down costs.

The modern technological sophistication evident in this book is matched by its repeated references to contemporary scientific debates, such as those concerning geology, watershed management, and fire. Scientists, particularly geologists, found in Yosemite a laboratory to test current theories of the earth's creation. Debates over geology revealed the ideological nature of much scientific discourse, as Josiah Whitney and other men favored catastrophic interpretations of the valley's creation over the slower forces of glaciation and erosion. Clarence King observed glacier-formed striations in Yosemite's granite walls, but changed his mind to support Whitney's opinion of the valley's origin as rooted in cataclysmic change.[16] The man most often cited in opposition to the Whitney interpretation has been John Muir, who persistently argued for the glaciation theory, but Hutchings was a vocal proponent of this idea as well, devoting several pages of *In the Heart of the Sierras* to a discussion of it. Furthermore, in his text's descriptions of trails around the Yosemite basin, he pointed out places where readers/visitors could see for themselves evidence of glacial action. Such references indicate Hutchings's lifelong fascination with science: He and his family had tendered assistance to the Whitney Survey in 1864, and he maintained friendships with several scientists such as the geologist William Brewer and the botanist Albert Kellogg. In 1876, Hutchings had led an expedition of scientists and photographers to the top of Mount Whitney as a celebration of the nation's centennial. Hutchings represented the heyday of the amateur scientist, which reached its peak at mid century. However, by 1888, professional scientists increasingly replaced amateurs, emphasizing credentials such as educational background, disciplinary divisions, and institutional or bureaucratic association. In addition, scientists were defining themselves in increasingly masculine terms.[17] Hutchings's identity as hotelier, with all its domestic connotations, may have impeded his identification with scientific masculinity.

However, it was in his capacity as hotelier, as well as publisher, that Hutchings most frequently encountered tourists. Tourist accounts that mention Hutchings describe him as affable and well read if often absent-minded. But tourists who entered the valley had also frequently encountered Hutchings well before they

arrived, in the pages of his own tour guide, *Scenes of Wonder and Curiosity*, a guidebook that focused on Yosemite, but included several other California destinations as well.[18] In providing visitors with a verbal lens through which to comprehend and appreciate Yosemite's sublime wonders, Hutchings's guides also formed the basis of written travellers' accounts. The completion of the transcontinental train route in 1869 launched a flurry of travel narratives of the American West that continued for several decades. Prominent editors and syndicated writers such as Samuel Bowles, Grace Greenwood, and Leslie Miriam (and dozens of others) traveled west, including Yosemite in their tours, and wrote articles and books from the trips.[19] These tourists were the cultural elite of the nineteenth-century publishing world, and women as well as men journeyed to Yosemite and wrote about it. A closer look at the experiences of women in Yosemite Valley illustrates the powerful way that class structured their encounters with the valley.

Most tourists who came to Yosemite in the nineteenth century did so out of an appreciation for sublime scenery, an aesthetic value cultivated among the artistically literate classes.[20] For women who traveled to Yosemite and expected to enjoy themselves, it was necessary to defy conventional images of middle-class physical delicacy. Many writers expressed their delight at this necessity: Grace Greenwood exulted in her freedom to race John Muir's pony up and down the valley in 1871. Several articles made much of the matter of riding astride. Middle-class women in the nineteenth century were trained and encouraged to ride sidesaddle, presumably to help maintain their sense of virtue. But sidesaddle was uncomfortable for the riders and injurious to the horses or mules they rode upon. Sidesaddles shifted the weight of the rider to just over the animal's kidneys. On the steep and rocky trails that descended several thousand feet to the valley floor, the unbalance of the sidesaddle put horses and mules in even more danger of losing their footing than already existed. Hutchings, who for many years managed Yosemite's livestock in addition to his hotel and promotional efforts, recognized the potential damage of sidesaddle and waged an ongoing campaign to convince women tourists to "ride astride."

> Calculate to ride astride and dress for it. A woman who has only one leg, or has two on one side, may have some excuse for the unnatural, ungraceful, dangerous and barbarous side-saddle. The last word was prompted by remembering the raw back of the beautiful horse which carried Miss [Dorothea] Dix into the valley, under the old, conventional, side-saddle. The lady is, unquestionably, a noted philanthropist, but that poor horse probably never suspected it. Anna Dickinson rode in man-fashion, arrived fresh and strong, and so did her horse. Ask her animal if he wants to carry that lady again, and he'll never say nay (neigh).[21]

Hutchings and others laid in a supply of divided skirts for rent at Tamarack Flat, for many years the last stop for wagon and coach trips on the Big Oak Flat Road. Here travellers switched to saddle for the last five miles and two thousand-foot descent into the valley.

The ride-astride matter illustrated one of the ways in which travel to Yosemite encouraged (or mandated) that genteel, middle-class women to defy gender conventions. However, Yosemite did not function in the same way for all women. The tourist-consumers who came to Yosemite needed to be fed, housed, and transported. And so, the production of Yosemite landscapes was not merely a cultural one that took place in books, articles, and photographs: It was also a material one that transformed the economy and ecology of the valley a century ago and continues to do so to this day. At this level of production, the tourist industry depended upon the energies of women and men who chose to make Yosemite their home, at least for part of each year. And if the act of tourism allowed the middle- and upper-class tourists to defy gender convention, it appears that the act of producing for the tourist economy did not have the same effect on the lives of women and men who lived and worked in the valley. By all accounts, and with a few notable exceptions, most of the people who labored for the tourist economy did so largely along gendered lines.

I say "by all accounts," because workers in Yosemite were far less likely to write about their experiences there than were tourists. The most visible of women laborers were those wives of hotelkeepers who worked as cooks. Food was every bit as important to tourists as sublime scenery, and so women such as Mary Peregoy, Emily Snow, and Isabella Leidig received written praise from hungry travellers for their abilities in the kitchen. Wives were apparently so essential to the success of hotels that in 1869 Galen Clark selected Edwin Moore as his partner in Clark's station "because I wanted a partner who had a wife."[22] The range of work these husband-and-wife teams engaged in illustrates the broad impact of the tourist economy. Men cut down trees and milled lumber to build their hotels, built trails, raised and slaughtered livestock, and farmed to raise food for their guests. Women cooked, reared their children (Isabella Leidig gave birth to eleven children in Yosemite), kept house, cleaned, did the laundry, gardened.[23]

Almost completely invisible to tourists were the women and men whose work supported the tourist industry from beyond the hotel. The Flores family operated a laundry in the Lower Village, and their son, Manuel Flores, worked as a packer for Hutchings. Teams of Chinese stonemasons laid the walls for hiking trails and wagon roads into the valley. To satisfy the demand for food, herders ran sheep and cattle on meadows planted with timothy for forage, and Joel Westfall operated a slaughterhouse and butcher shop for the hotel trade. The packers and herders were usually European immigrants or Amerindians working to combine their traditional lifeways with the new tourist economy. Amerindian women taught Hutchings's mother-in-law, Florantha Sproat, to predict the weather and practice medicine with local herbs. Amerindians frequently transported water from the Merced River to the hotels.

Attention to the activities of workers and residents in Yosemite highlights the important role of class in the process by which Yosemite was transformed

into a national landscape, set aside for recreational tourism. By contrasting the experience of women tourists with that of women residents, it becomes clear that in the nineteenth century there were consumers—tourists—and there were producers. James Mason Hutchings perched somewhat precariously between the two. As a writer and publisher, Hutchings knew how to appeal to the educated elite. As a hotelier, he managed the mundane business of producing for the tourist trade. And as an advocate, Hutchings worked alongside John Muir and other founding members of the Sierra Club to defend and extend the boundaries of Yosemite's "wilderness."

In the Heart of the Sierra was published three years before the founding of the Sierra Club, the nation's first and most prominent conservation organization. Many of the Sierra Club's early political efforts were informed by contemporary scientific theories, such as George Perkins Marsh's ideas about the necessity to maintain forests to protect watersheds. Indeed, it was the concept of watershed preservation that led Head Forester of California Allen Kelly to write a proposal in 1892 to restore the Yosemite waterfalls with a system of reservoirs and flumes in the high country. Writing for the national periodical, *Harper's Weekly*, Kelly argued that doing so would ensure that the waterfalls, and by implication the tourist season, would continue to run in full through the summer instead of drying up by August.

> The vast volume of Nevada Fall, that plunges in a broad sheet of foam 600 feet downward into a roaring, seething caldron, and fills all the canion with spray, dwindles to an insignificant dribble in October; and when its waters come to the precipice that makes Vernal Fall . . . there is scarcely so much of them as would flow from a street hydrant.[24]

Kelly's proposal may seem preposterous to twenty-first century understandings of the charm of wild nature. But it was consistent with the emerging theories of forest conservation favored by progressives and professionals. Drawing on the assumptions of George Perkins Marsh and Charles Sargeant, Kelly blamed the short waterfall season not on the natural cycles of drought and flood in Sierra watercourses, but on the damage to high-country forests wrought by sheepherders. Kelly's system of reservoirs, canals, and flumes would "restore" the watershed to its "natural" state while the forests took the necessary time to heal. Such pragmatism is entirely consistent with nineteenth-century science, which was often financed to solve industrial problems. The state of California, for example, agreed to finance Josiah Whitney's geological surveys on the assumption that the knowledge thus gained would help the mining industry, another shadow of the links between the sacrificial landscapes of Nevada mining and the sublime landscape of Yosemite.[25]

Kelly's logic reveals not only the assumptions behind progressive, scientific forest management, but also the way class biases underpinned the emergence of national parks. For Kelly, as for Muir and Hutchings in the 1880s and 1890s, Yosemite didn't need to be protected from the industrial capitalists who drove wild water into ditches and flumes, but from the ignorant and careless sheep-

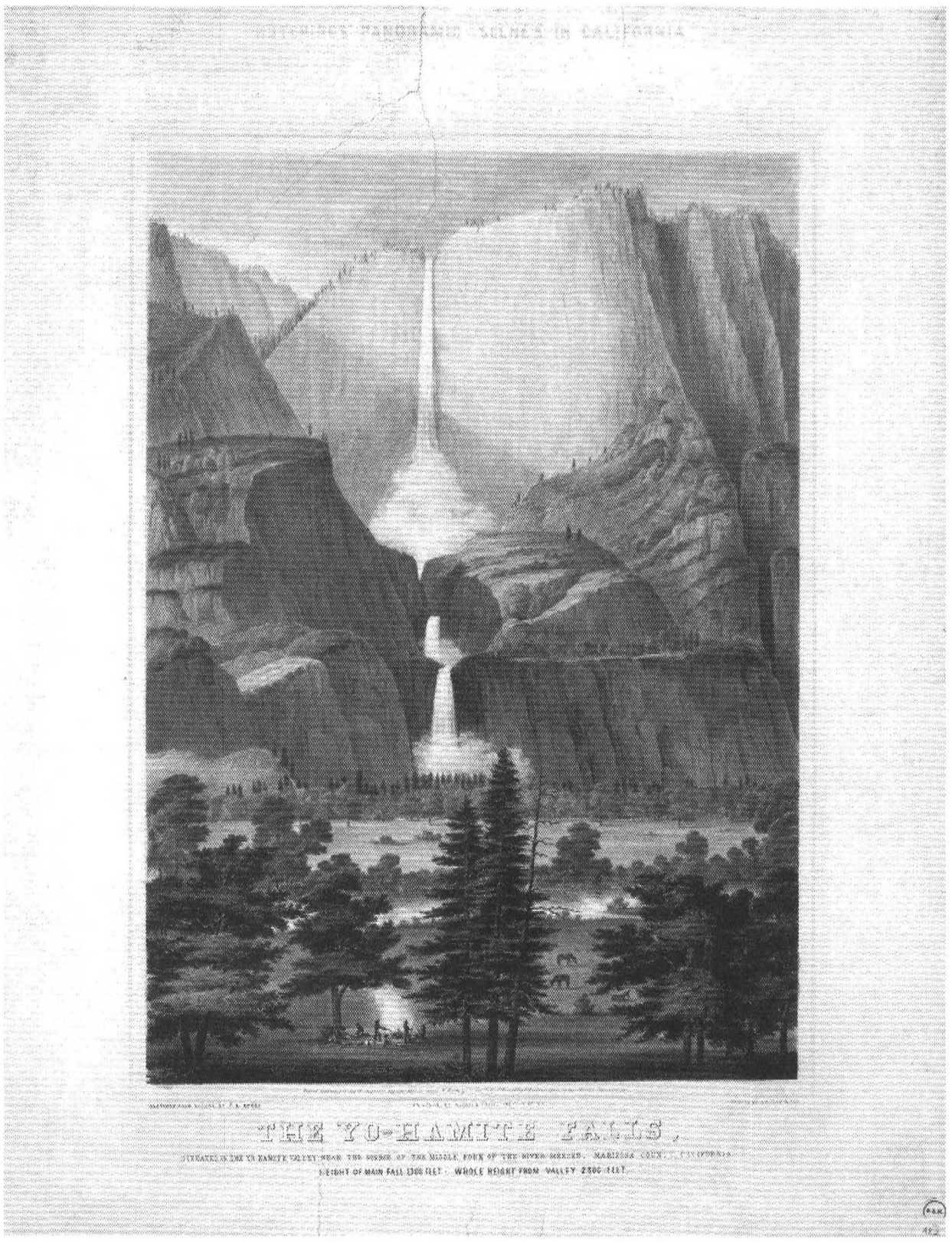
herders who practiced the "Paiute forestry" of setting forest understory on fire. Hutchings echoed Muir's disdain for the sheepmen who linked the mountains and valleys in their annual tour:

> . . . when I seek to hold loving communion with God, and nature, and steal away into these inspiring solitudes, and there find that sacrilegious [sic] and vandal hands—yes, those of the herder—have set on fire these glorious forests; as I look at the dense smoke curling up through the blackened and burning stumps, or listen to the crackling of the blaze, and see the sheets of flame leaping from tree to tree, licking their beautiful foliage with devouring tongues, I cannot but make the unchristian-like confession that I execrate the act and feel neither respect nor patience with the doers.[26]

The scenario of using hydraulic mining technology to protect and restore the natural and scenic beauty of Yosemite's waterfalls reminds us that sublime and sacred landscapes were not merely created in the words, texts, and images of promoters, scientists, and poets. Despite the fact that words such as *conservation, preservation* and *restoration* imply some kind of protection of a pristine environment from human depredation, the practical fact is that the creation of wilderness parks has always meant the privileging of one kind of development over another. While Yosemite's landscapes were protected from mining, logging, and commercial agriculture, they were intensively manipulated to provide access to tourists. To do so, roadbuilders borrowed dynamiting techniques from the mines and railroads to blast granite walls into roadbeds and support walls. Trailbuilders did likewise. Hutchings maintained an extensive stock operation to bring tourists and supplies into the valley. There were butchers, photographers, and a saloon in the valley. In other words, Yosemite's tourist industry was in fact an *industry*, complete with resource extraction, hierarchical labor systems, and top-down management systems. And in its very enthusiastic support of this industry, the Sierra Club and other early wilderness advocates helped to frame and extend the power of elites over the Western landscapes. Although preservation language continually emphasized the "public good," the practical effect was to wrest the high sierran forests and waters from the voiceless and powerless itinerant sheepherders and into the hands of scientific managers.

The aesthetic value of grand mountain scenery in America continues today to stimulate the development of mountain landscapes by urban, largely white, elites. In recent decades, the Sierra Nevada mountain range, like other scenic landscapes in North America, has come under increasing ecological strain as tourism to Yosemite, Lake Tahoe, and other destinations skyrockets. A seemingly insatiable desire for the grand scenery of the mountains stimulates the building of vacation homes and what Timothy Duane calls exurban communities, with stronger economic and cultural ties to urban centers than to the local landscape. Such developments engender a range of problems, from increasing the danger of (and difficulty fighting) catastrophic wildfire to the creation of traffic congestion and the wide economic disparities endemic to tourist-service

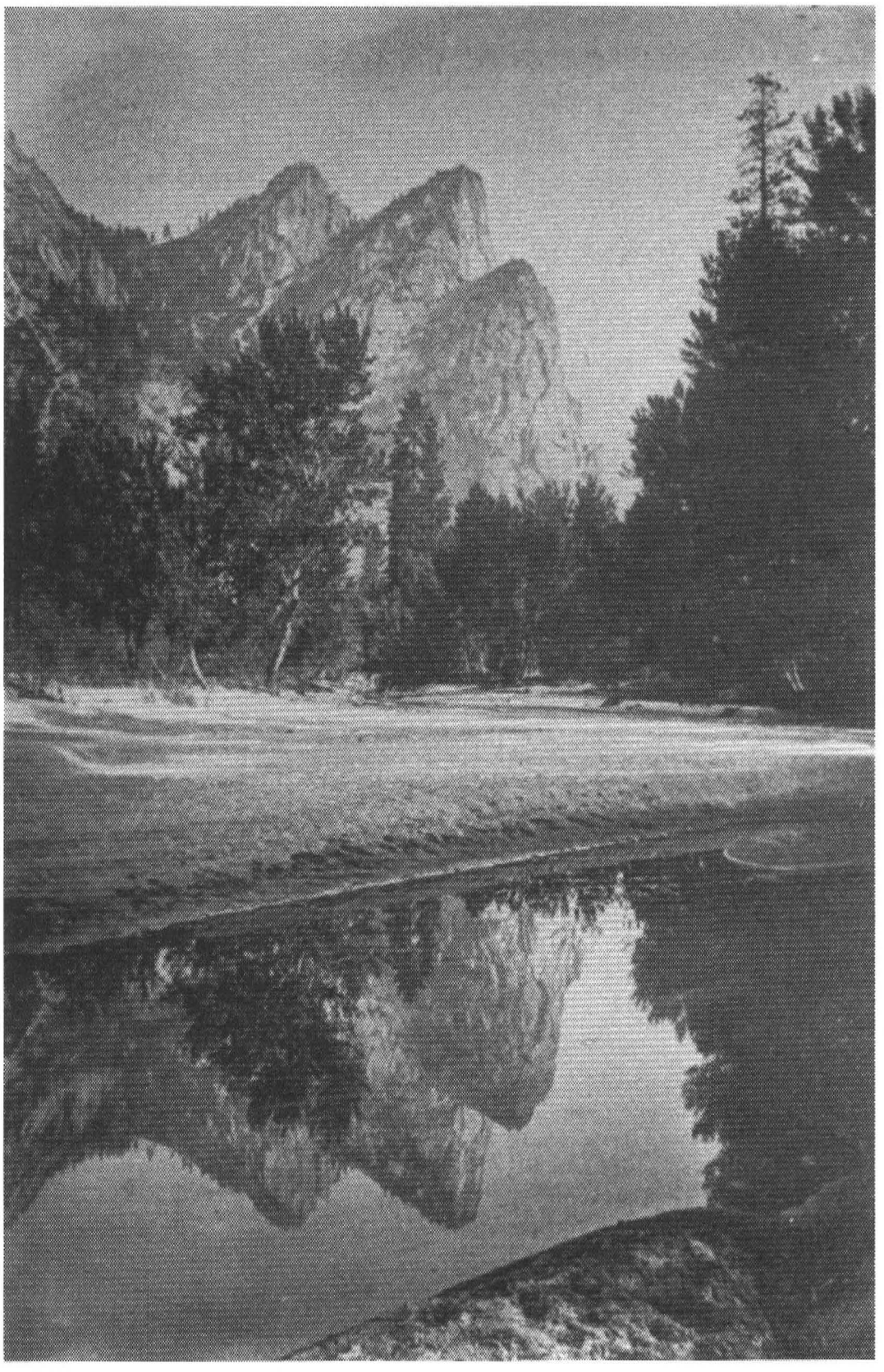
economies.[27] Thus, the legacy of sublime mountain aesthetics constructed and reproduced in the publications and tourist enterprises of James Mason Hutchings continues to materially shape our environment.[28] Such publications and enterprises mediated human contact with the environment, illustrating Anne Demo and Kevin DeLuca's point that "Within the discourses of the late nineteenth century, the sublime becomes not so much a feeling but a commodity produced through specific techniques."[29] Thus, consumerism and commodification continue to link nature and progress a century and a half after Hutchings's first visit to the grand Valley of the Yo-Semite.



Thomas A. Ayres, "The Falls" (Lithographic Print, San Francisco: Hutchings and Rosenfield; acqired from the Honeymand Collection, California Heritage Digital Library, Online Archive of California.)

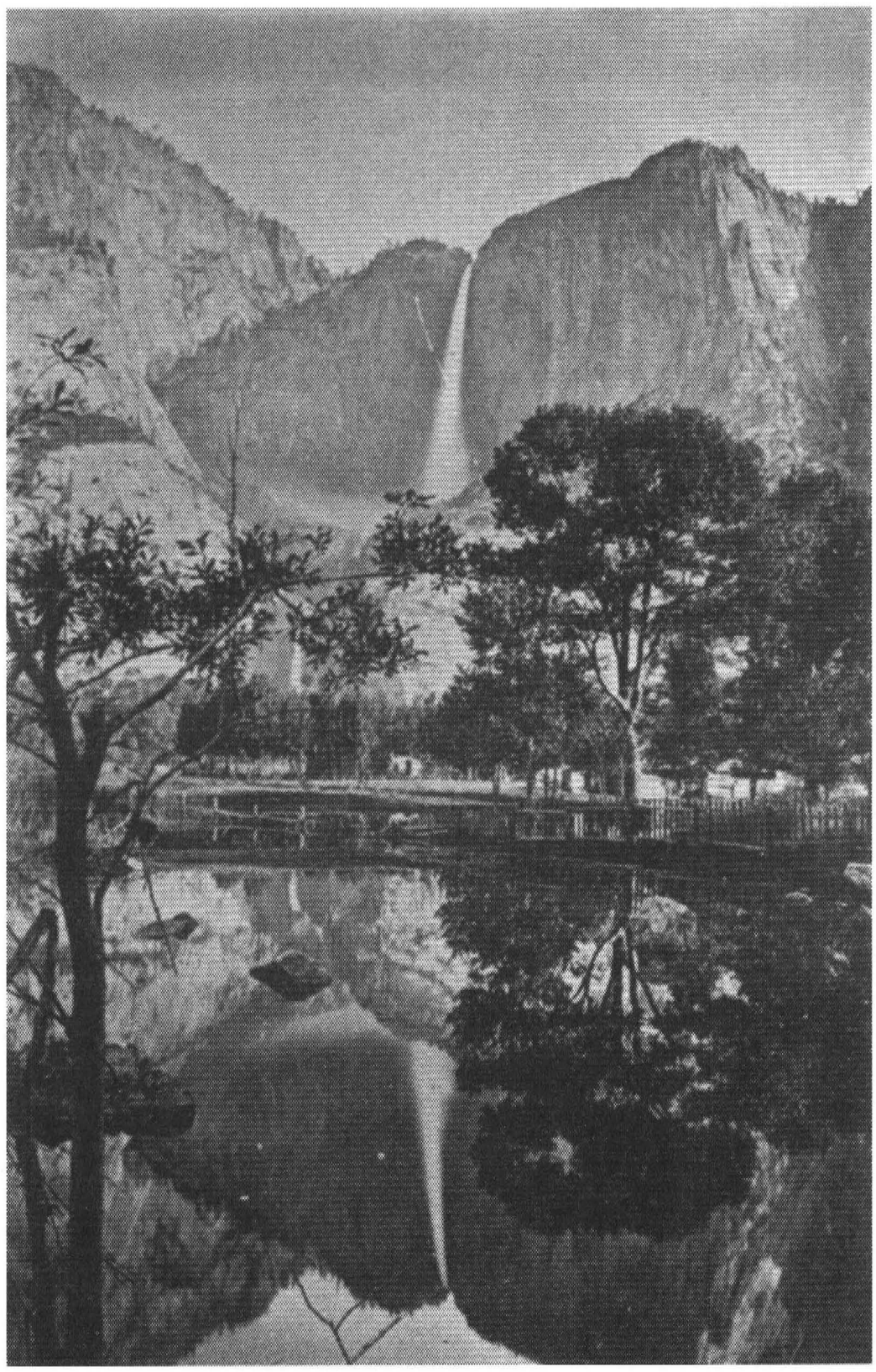
Near view of the Yo-Semite Falls - 2,550 feet in height. Illustration from *Scenes of Wonder and Curiosity in California. A Tourist's Guide to the Yo-Semite Valley*, by J. M. Hutchings (New York and San Francisco: A. Roman and Company, Publisher, 1870).

The ford of Yo-Semite. Illustration from *Scenes of Wonder and Curiosity in California. A Tourist's Guide to the Yo-Semite Valley*, by J. M. Hutchings (New York and San Francisco: A. Roman and Company, Publisher, 1870).



The Three Brothers - Pom-Pom-Pa-Sa. Illustration from *In the Heart of the Sierras*, by J. M. Hutchings (Oakland, Calif.: Pactific Press Publishing House, 1886).

The Tu-Lool-We-Ack, or South Fork Waterfall. Illustration from *Scenes of Wonder and Curiosity in California. A Tourist's Guide to the Yo-Semite Valley*, by J. M. Hutchings (New York and San Francisco: A. Roman and Company, Publisher, 1870).



The Yo-Semite FAll-Cho-Lock - during high water. Illustration from *In the Heart of the Sierras*, by J. M. Hutchings (Oakland, Calif.: Pactific Press Publishing House, 1886).

NOTES

[1]John Muir, "Nevada's Dead Towns," *San Francisco Evening Bulletin*, 15 January 1879. Reprinted in *Steep Trails, California—Utah—Nevada—Washington—Oregon—The Grand Canyon*, William Frederic Bade, ed. (Boston:Houghton Mifflin,1918), republished online in Project Gutenburg, http://www.yosemite.ca.us/john_muir_exhibit/writings/steep_trails/. Muir makes several historical sleights-of-hand in this essay, contradicting himself and ignoring his own evidence. For example, while dreams of wealth drive men mad in Nevada, wealth is "healthy" in California.

[2]Rebecca Solnit, *Savage Dreams: A Journey into the Hidden Wars of the American West* (San Francisco: Sierra Club Books, 1994).

[3]Muir, "Nevada's Dead Towns," online article.

[4]William Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature," in *Uncommon Ground: Rethinking the Human Place in Nature*, William Cronon, ed. (New York: W. W. Norton, 1996), 69-90. Cronon's essay, originally an address at the American Society for Environmental History conference, then published in the first volume of *Environmental History* (1994), was initially criticized heavily by environmentalists and scholars. In the years since, however, it has inspired a wave of historical and cultural reconsideration of the wilderness idea, much of which is summed up in the historiographical roundtable issue of the *Pacific Historical Review*, 70:1 (2001). See also Kevin Dann and Gregg Mitman, "Essay Review: Exploring the Borders of Environmental History and the History of Ecology," *Journal of the History of Biology*, 30 (1997), 291-302. Kevin Michael DeLuca analyzes the power of wilderness as a rhetorical strategy for the twentieth-century environmentalist movement in "Trains in the Wilderness: The Corporate Roots of Environmentalism," *Rhetoric and Public Affairs*, 4:4 (2001) ,633-52.

[5]Kevin DeLuca and Anne Demo, "Imagining Nature and Erasing Class and Race: Carleton Watkins, John Muir, and the Construction of Wilderness," *Environmental History*, 5:4, (October 2001), 541-60.

[6]Richard Orsi has documented the many links between the Southern Pacific Railroad and efforts to preserve Yosemite. Several Southern Pacific executives were among the charter members of the Sierra Club, and the railroad's owner, Edward Henry Harriman, was a powerful advocate in several political debates over Yosemite. Richard Orsi, "'Wilderness Saint' and 'Robber Baron': The Anomalous Partnership of John Muir and the Southern Pacific Company for Preservation of Yosemite National Park," *Pacific Historian*, 29 (1985), 136-56. Kevin DeLuca elaborates several of Orsi's points in "Trains in the Wilderness," 638-41. A tertiary, but strong, connection also exists among Yosemite and the Sierra Club and intellectuals from the University of California, also a product largely of railroad profits. Many of Berkeley's scientists conducted field schools and research in Yosemite and were key figures in the origins of the Sierra Club, including William Colby, Joseph Grinnell, and Ezra Carr (whose wife, Jeanne Carr, was a close friend and mentor of John Muir). The geologist Joseph LeConte was active in the organization of the University of California. Sierra Club website, "key figures" http://www.sierraclub.org/history/key_figures/

[7]James Mason Hutchings, *In the Heart of the Sierras: The Yo Semite Valley, Both Historical and Descriptive: and Scenes by the Way . . .* (Old Cabin, Yo Semite Valley, and Oakland: Pacific Press Publishing House, 1888).

[8]Several historians have speculated that Muir and Hutchings held great animosity for each other. Hank Johnston wrote that Hutchings and Muir had an "enduring bitterness for each other," although his only evidence for this was the fact that Hutchings never mentioned Muir in *In the Heart of the Sierras*. Thurman Wilkins describes their acrimony as grounded in Hutchings's resentment of Muir's popularity with tourists. Elvira Hutchings wrote several romantically charged letters to Muir, and her feelings may have contributed to her 1876 divorce from James, but there is no evidence that Muir returned her affections, so suggestions that the two had an affair must remain speculative. Despite the real possibility that professional jealousy and acrimony tainted their relationship, Hutchings and Muir agreed with each other in virtually every political controversy, were both founding members of the Sierra Club, and Muir designated a Mount Hutchings in King's Canyon in 1891. Jen A. Huntley-Smith, "'Publishing the Sealed Book': James Mason Hutchings and the Landscapes of California Print Culture, 1853-1886" (Ph.D. diss., University of Nevada, Reno, 2000), 255-57; Thurman Wilkins, *John Muir: Apostle of Nature* (Norman: University of Oklahoma Press, 1995), 70-71; Hank Johnston, *The Yosemite Grant, 1864-1906: A*

Pictorial History (Yosemite National Park: The Yosemite Association, 1995), 80, n. 19; Terry Gifford, ed., *John Muir: His Life and Letters and Other Writings* (Seattle: Mountaineers, 1996); James B. Snyder, historian, Yosemite National Park, personal conversations with author, 1, 4 October 1999.

[9]Shirley Sargent, "Introduction," to James Mason Hutchings, *Seeking the Elephant, 1849: James Mason Hutchings' Journal of his Overland Trek to California, Including his Voyage to America, 1848 and Letters from the Mother Lode*, Shirley Sargent, ed. (Glendale, Calif.: The Arthur H. Clark Company, 1980), 21; Huntley-Smith, "'Publishing the Sealed Book,'" 55-57. Hutchings may have tried to repeat this venture when he left San Francisco to mine in Owens Valley for two years before moving to Yosemite to purchase the Upper House Hotel in 1864. W. A. Chalfant, *The Story of Inyo*, rev. ed. (Bishop: Pinon Book Store, 1933), 170; James M. Hutchings "A Close 'New Year's Call' in 1862 [1863]," mss., Yosemite National Park Museum, cat. no. 30156, cited in James B. Snyder, "Notes to the 1875 Diary of James Mason Hutchings' Trip to Mt. Whitney and Inyo Dome," mss. 4-5; Henry G. Hanks, "Letters from the Owens River," *Alta California* (31 March 1863), p. 1, cols. 6-8, cited in Snyder, "Notes to the 1875 Diary," 12.

[10]Rev. W. A. Scott, *Pavillion Palace of Industry: California Industrial Exhibition, San Francisco 1857* (San Francisco: Hutchings and Rosenfield, 1857), advertisement, inside cover; Huntley-Smith, "Publishing the 'Sealed Book,'" 65-120.

[11]Huntley-Smith, "Publishing the 'Sealed Book,'" 206-53.

[12]The Yosemite Guardian was appointed by the Yosemite Commissioners and held the responsibility for maintaining the grant. Galen Clark held this position for most of the grant period. One of the best discussions of nineteenth-century concepts of the sublime and the rise of tourism remains John F. Sears, *Sacred Places: American Tourist Attractions in the Nineteenth Century* (New York: Oxford University Press, 1989). On the culture of science in the nineteenth-century West, see Michael Smith, *Pacific Visions: California Scientists and the Environment* (New Haven: Yale University Press, 1987).

[13]Hutchings, *In the Heart of the Sierras*, 133.

[14]See, for example, *Album of Oakland, California, Comprising a Bird's-eye View of the City, View of Prominent Business Blocks, Hotels, City and County Buildings, etc.* (Oakland: Pacific Press Pub. Co., 1893); and DeJarnatt and Crane, *Colusa County, California*, real estate and loan agent's pamphlet, 1887. It is not clear what, if any, connection the Pacific Press Publishing House of Oakland may have had to San Francisco's Pacific Rural Press.

[15]Some of these were most likely Carleton Watkins's photographs. Taber had purchased several of Watkins's views during the depression of 1874-75. Kate Nearpass Ogden, "Sublime Vistas and Scenic Backdrops; Nineteenth-Century Painters and Photographers at Yosemite," in *Yosemite & Sequoia: A Century of California National Parks* (San Francisco: California Historical Society Bookstore, 1993) 63, Richard Orsi, Alfred Runte, and Marlene Smith-Baranzini, eds.

[16]Smith, *Pacific Visions*, 60-102.

[17]Smith, *Pacific Visions*, 109-10, 113; Howard S. Miller, "The Political Economy of Science," in *Nineteenth-Century American Science: A Reappraisal*, George H. Daniels, ed. (Evanston: Northwestern University Press, 1972), 96-100; Robert V. Bruce, "A Statistical Profile of American Scientists, 1846-1876," in *Nineteenth-Century American Science*, Daniels, 63-91; Nathan Reingold, *Science in Nineteenth-Century America: A Documentary History* (New York: Hill and Wang, 1964), 29.

[18]James Mason Hutchings, *Scenes of Wonder and Curiosity in California. Illustrated with over One Hundred Engravings. A Tourist's Guide to the Yo-Semite Valley, the Big Tree Groves—The Natural Caves and Bridges—The Quicksilver Mines of New Almaden and Henriquita—Mt. Shasta—the Farallone Islands, with their Sea Lions and Birds—The Geyser Springs—Lake Tahoe, and other Places of Interest. Also Giving Outline Map of Routes to Yo-Semite and the Big Tree Groves—Tables of Distances—Rates of Fare —Hotel Charges, and other Desirable Information for the Traveller* (New York and San Francisco: A. Roman and Company, 1876). Hutchings published at least eight editions of this book from 1860 to 1876.

[19]Samuel Bowles, *Our New West: Records of Travel Between the Mississippi River and the Pacific Ocean . . . Including a Full Description of the Pacific Railroad; and of the Life of the Mormons, Indians, and Chinese* (Hartford, Conn.: Hartford Pub. Co., 1869); Grace Greenwood, *New Life in New Lands, Notes of Travel* (New York: J.B. Ford, 1873); Miriam Leslie, *California, a Pleasure Trip from Gotham to the Golden Gate (April, May, June, 1877)* (New York: Carleton, 1877).

[20]On the importance of the sublime in nineteenth-century art and literature, see Angela Miller, *The Empire of the Eye: Landscape Representation and American Cultural Politics, 1825-1875* (Ithaca: Cornell University Press, 1993); Barbara Novak, *Nature and Culture: American Landscape and Painting, 1825-1875* (New York: Oxford University Press, 1980); Sears, *Sacred Places*.

[21]A. L. Bancroft, *Bancroft's Tourist's Guide. Yosemite, San Francisco and around the Bay* (San Francisco: A. L. Bancroft & Co, 1871), 13. I am indebted to James Snyder for this quotation.

[22]Johnston, *Yosemite Grant*, 89.

[23]*Ibid.*, 85-92.

[24]Allen Kelly, "Restoration of Yosemite Waterfalls," *Harper's Weekly* (16 July 1892), 678.

[25]Smith, *Pacific Visions*.

[26]Kelly, "Restorations;" James Mason Hutchings, "The Geology and Scenery of the High Sierra," mss. fragment, Shirley Sargent Collection of the Papers of James Mason Hutchings, Yosemite Research Library, 1-9.

[27]Timothy P. Duane, *Shaping the Sierra: Nature, Culture, and Conflict in the Changing West* (Berkeley: University of California Press, 1998), 49-54.

[28]C. Elizabeth Raymond, "Outside the Frame: Landscape, Art, and Experience in the Sierra Nevada," *From Exploration to Conservation: Picturing the Sierra Nevada* (Reno: Nevada Museum of Art, 1998) 17-32.

[29]DeLuca and Demo, "Imaging Nature."

The Clementses Encounter Yosemite

WILLIAM D. ROWLEY

In 1934 Edith Clements wrote to a friend describing her busy life with her world-famed husband and ecologist, Frederic Clements. She referred to work in soil erosion, inspection of shelter belts, work in bio-ecology, roadside planting in Yosemite, and her work on a new wild-flower book. She concluded her letter: "So you see that ecology comprises rather an ambitious section of activities; erosion, geology, deposition, grazing, farming, forestry, zoology, human welfare and esthetics." Her reference to esthetics referred especially to the roadside revegetation efforts in Yosemite National Park in the wake of a flurry of road building in the late 1920s that had made the park more accessible to automobiles but whose scars threatened its wild scenic beauty.[1]

In the midst of the 1930s, Edith Clements was in the thirty-fifth year of marriage to Frederic Clements. His career accomplishments had made him one of the foremost American ecologists in the interwar period with a career marked by eminent publications, university teaching, work as research scientist for the Carnegie Institute, and as consultant for government agencies on resource and land-management questions. During all of this busy and productive career his constant companion and vital helpmate since their marriage in 1899 had been his wife, Edith Schwartz Clements. From the beginning of this partnership they acknowledged that their marriage would be no ordinary one. Edith proudly wrote to her sister in the year of their nuptials that the marriage would not include children: "I know of married people who have other aims in life than that for which the ordinary marriage seems destined and they attain those ends." In this same letter she went on to acknowledge that Frederic was "a man of science" and that her life work would be "to help Frederic in the scholarly work we shall be so imminently *[sic]* fitted to do." She emphasized at the beginning of her marriage the "we" connection in the work, and concluded

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Edith Schwartz Clements sketching wildflowers. From Edith S. Clements, *Adventures in Ecology: Half a Million Miles . . . From Mud to Macadam* (New York: Pagent Press, Inc., 1960)

that theirs would be a marriage devoted to science as other marriages were committed to causes of political reform, Christian evangelizing, or foreign medical missionary work.[2]

Upon Frederic's death in 1945, Edith responded to the condolence letter of old friend, Nebraska classmate, and now eminent legal scholar Roscoe Pound. She said her marriage to Frederic represented "a unique life together—forty-six years of unbroken companionship (only three days a part in all that time!)." Edith related her thoughts of possibly writing a biography of her husband but realized in her communication with Pound that it would have to be a "double biography" because of her close collaboration in his research and publication. "Any account of Frederic's life would have much of my share in it," she reasoned. And by all of the various accounts of their "professional marriage," she was undoubtedly correct. Ultimately she decided that she had written so many letters regarding their experience during these years, "and, of course, no one has the intimate knowledge of the interesting or amusing incidents or of the significant crises that determined our course," that she believed her account should take the form of "memories." These she committed to book form in

1960, *Adventures in Ecology: Half a Million Miles . . . From Mud to Macadam*, which is a memoir of their careers or career and marriage designed as she said in the 1945 letter to Pound, "to inspire others to high endeavor."[3]

For Edith, much of the endeavor described in this memoir was of a very basic and perhaps ordinary nature. Frederic never learned to drive a car nor could he repair a flat tire. He eschewed working with his hands. This meant that Edith drove, she estimated, nearly five-hundred thousand miles with Frederic around the American West and the East investigating landscapes and vegetation and taking care of the everyday practical problems of life and especially transportation by auto. In addition, she typed and edited his papers. Beyond these mundane, but necessary tasks, she became in her own right an expert plant illustrator, author, and authority on wild flowers. As an illustrator she was particularly attuned to the structure and color of flowers and/or their aesthetic qualities that, of course, placed her in these endeavors well within her "gender-role expectations." On the other hand, driving, changing flat tires, and solving automotive mechanical problems while Frederic wrote, read articles, and made calculations on vegetational dominance at experimental sites was another endeavor almost amounting to a traditional gender role reversal.

Edith followed her husband into the newly emerging ecological science at the University of Nebraska after the turn of the century. She was the first woman to earn a Ph.D. (1907) from the University of Nebraska. Still, as one source put it, "Edith seemed never to evolve significantly beyond the role of an 'extraordinary helpmate.'" Modern critics suggest that she was "a victim of gender-based socialization—had a split self-image, seeing herself as a wife who tagged along with her husband-scientist and as one of 'two plant ecologists' who worked, traveled, and consulted together." In some respects Edith recognized this description very early on in the marriage. On a trip to Europe to attend an international conference in 1911, she related how she had been called upon to give a speech on the night before departure from Europe. She said she made "quite a hit with my speech." And she added that, "Fritz was delighted with my success. It is not often that I am asked to bring my light out from under the bushel and let it shine."[4]

By the 1930s this remarkable couple brought their well-recognized career and talents to Yosemite National Park to confront some of its ecological problems in reference to roadside plantings or restoration. More to the point, it was the remarkable career of Frederic that attracted park officials. His close-by residency in Santa Barbara gave him a convenient proximity to Yosemite. Still, it was well known that Edith Clements was inevitably a part of the package when a company or institution engaged her husband for consulting work on ecological questions. By 1928, Edith herself had somewhat of a reputation with the publication of two books on flowers containing her extensive illustrations, *Flower Families and Ancestors* and *Rocky Mountain Flowers*, and an article, "Wild Flowers of the West," in *National Geographic* (May 1927), as well as her doctoral dis-

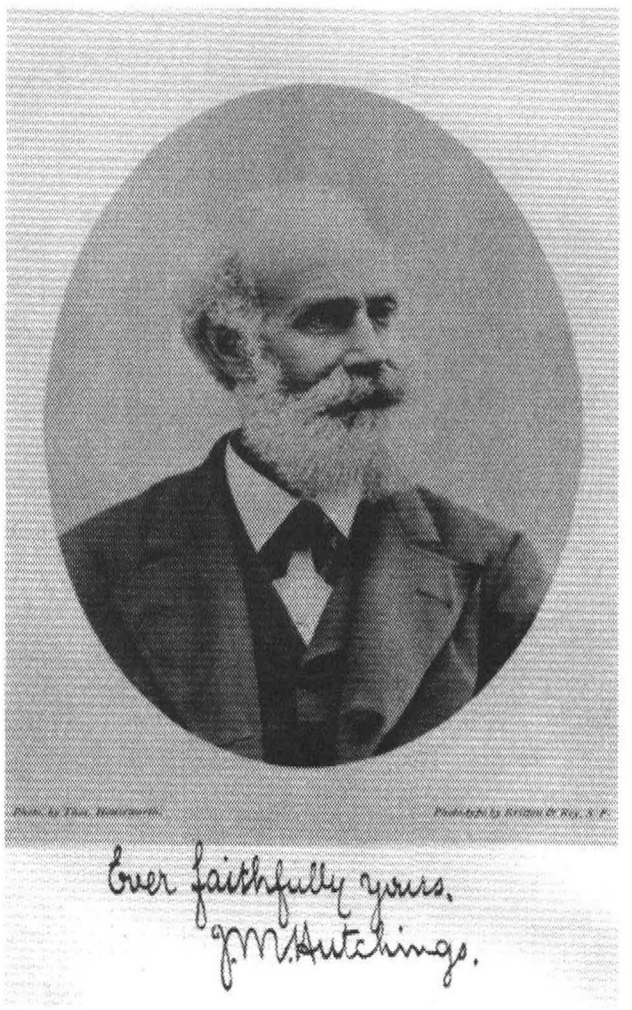
sertation, "The Relation of Leaf Structure to Physical Factors." But it was Frederic who commanded the spotlight in this couple's marriage, a marriage that fell into the category, as one source put it, "husband-creator/wife-executor type."[5]

Ever since the 1890s during his studies under the innovative botanist Charles Bessey at the University of Nebraska, Frederic Clements had been involved in the study of vegetational communities. From his viewpoint his career began in the summer of 1893 with an investigation into the effect of recurring droughts upon the vegetation of Nebraska. With Roscoe Pound he had written a joint doctoral dissertation on the "Phytogeography of Nebraska" in 1898. Since 1900, he maintained a laboratory for field work in Colorado near Pike's Peak where he could carry out plant experiments at various elevations and therefore in different climates. He became an associate professor of botany at Nebraska, moved on to the University Minnesota as professor and engaged in work with the U.S. Department of Agriculture, state experiment stations, and the Biological Survey in the Department of Agriculture.

Clements's investigations eventually produced reports to the Secretary of Agriculture based on his visits, beginning in 1913, to the southwestern states, "where the problems are insistent." His travels by auto, with Edith driving every mile, sought to investigate "the problem of classification and optimum utilization in the west." Upon entrance of the United States into World War I, the purpose of the investigations emphasized increased productivity, certainly utilitarian goals. According to Clements, in an explanatory letter to Secretary of the Interior Franklin K. Lane in 1918, five points of investigation commanded attention: (1) optimum utilization as indicated by the native vegetation, (2) the consequences of overgrazing and the most promising remedies, (3) the recurrence of dry and wet periods of the climatic cycle, (4) the correlation of dry farming and stock production, and (5) the economic and social consequences of the present haphazard method of land settlement. Clements's investigations and his science sought practical results from which society could profit. By 1917 he became associated with the Carnegie Institute as a full-time research scientist specializing in the ecological problems of the American West. His appointment also served to demonstrate the institution's devotion to research.[6]

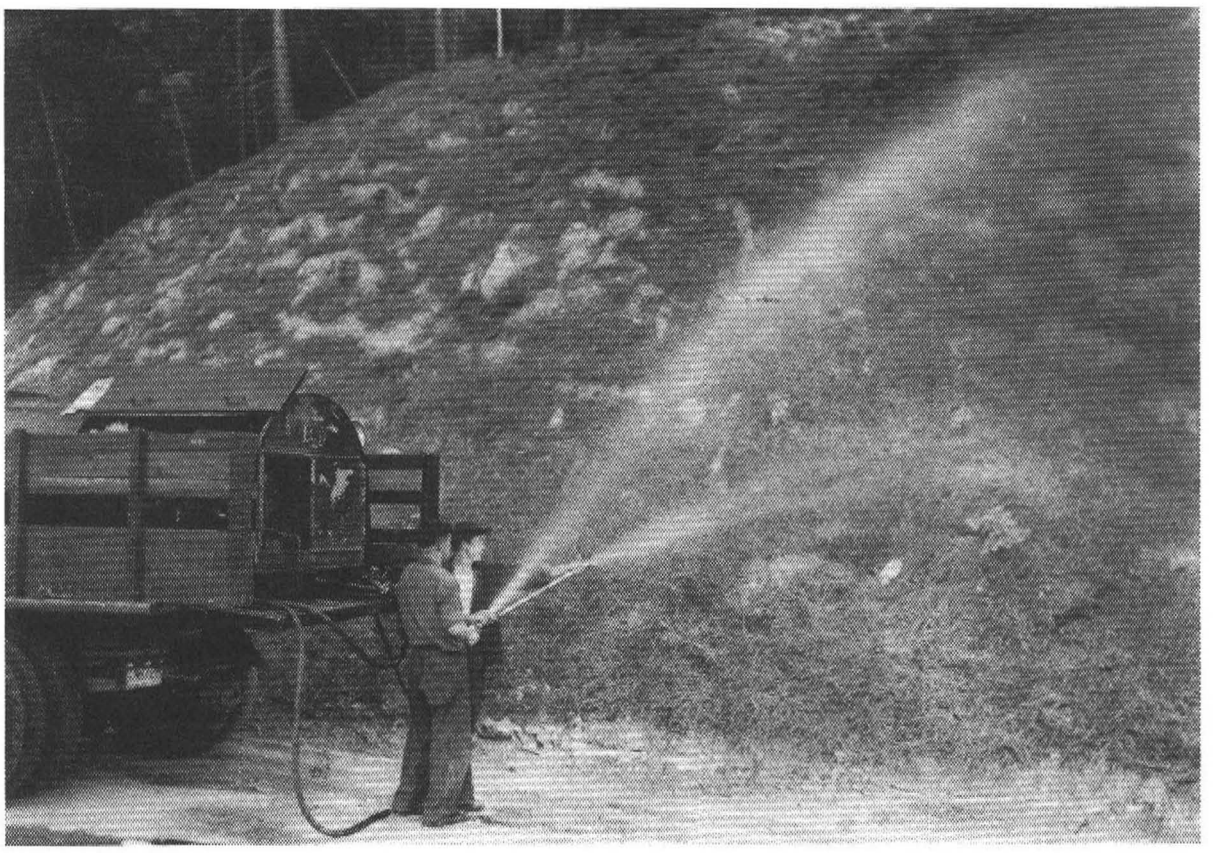
From 1913 onward Clements found full employment for his ecological services. The kind of botany he learned from Dr. Bessey at the land-grant University of Nebraska he transformed into what he called "dynamic ecology" in a 1916 book entitled *Plant Succession: An Analysis of the Development of Vegetation.*[7] He, along with others of his generation, moved plant study beyond the botanizing of the nineteenth century into an ecological setting in order to understand the dynamics of vegetational processes—or why there was a process that, according to Clements's ecological thinking, expressed itself in terms of developmental succession toward a climax community. To describe the process, one historian of science insightfully wrote, "Like an organism, the climax community maintained a state of dynamic equilibrium with the surrounding

Deep gulley out in Wawona Meadow by uncontrolled stream. Shows new drainage ditch before gulley was filled, February 1936. Civilian Conservation Corps (CCC). *(Collection courtesy of Yosemite National Park Library, Yosemite, California)*



Frederic Clements. *(Collection courtesy of Yosemite National Park Library, Yosemite, California)*

Wawona Road bank sloping—after picture, May 1936. *(Collection courtesy of Yosemite National Park Library, Yosemite, California)*



Hardis sprayer used for watering planted slopes on Wawona Road. Two men apply 3,000 to 3,500 gallons of water each evening after 5:00PM. (Note the two types of spray—one fine spray and one strong spray). *(Collection courtesy of Yosemite National Park Library, Yosemite, California)*

environment. By identifying, measuring, and manipulating various environmental factors, the ecologist could investigate the structure and function of both the organisms and the organismal community." Once this was understood, an important aspect, if not the key, to the manipulating of "nature" would be understood. As some would put it, the Clementsian description presented a story of vegetation growth and development from a pioneer stage toward the full flourishing of a climax community that maintained an equilibrium with its environment under the influence of the most important element in the environment—climate.[8]

This kind of knowledge imparted power to the scientists to direct vegetation, its growth, and its use. The applied aspects of the new ecology commanded far more attention in the pragmatic American society of the early twentieth century than mere botanical studies. Along with an assertion of a new self-importance came recognition in the formation of professional ecological organizations in the manner of similar movements toward professionalization occurring in other academic disciplines by the turn of the century. Previously the botanical sciences comprised collecting specimens, taxonomy, classification, and morphology. Professionalization emphasized the applied aspects of ecology, moved it from the realm of the passive to the active. In the eyes of Clements and others it became a serious subject—more than an aesthetic undertaking by "nature lovers," many of whom, so the characterization asserted, were unmanly men and outdoorsy women attracted to flowers and gardens.

Clements's investigations constructed an idea about stages of vegetational growth and plant communities; it moved ecology beyond the materials of the "literary ecologist," a figure he regarded as an "amosin critter" who could not be taken seriously. This was one of Clements's few attempts at humor, but it also was rife with ridicule of amateurs whom he regarded as only "amusing." He hoped that his work and the work of others in "the experimental attack upon vegetation" would move the science beyond such descriptions and popular folk knowledge of vegetation. He wrote, "Ecologists, like the rest of the world, mostly think with their prejudices, and nothing but overwhelming experimental evidence can help them. However, for those who turn to the voyageurs and men who 'grew up' in the prairie, nothing short of trepanning can help." Clearly Clements adopted the modernist approach that the so-called backward peasant could convey little that was of value in the analysis of any local ecologies. Scientifically informed knowledge should be the primary tool of the professional land manager. While he rejected the idealization or romanticizing of local knowledge, Clements's own ideas about a large overarching organic community of climax vegetation to which all organic growth aspired drew charges of "fantasies" and absurd idealization about the workings of nature that bordered on hubris.[9]

Despite accusations of constructing an idealization of how vegetational communities worked and developed and inaccurately calling it science, Clements

believed himself and his science to be representative of a new take-charge "attack" in understanding the processes of plant and plant-community life. This departed from the veneration (some might say feminine veneration) afforded nature by the naturalist approach to botany and flowers in the nineteenth century. Until his invitation to come to Yosemite National Park, Clements's work had been confined to projects of interest to the utilitarian-minded Department of Agriculture for the improvement and protection of forage production. This involved questions, as Edith indicated in her 1934 letter, of erosion, grazing, forestry, zoology, and how work in these areas could benefit human welfare. John Merriam, president of the Carnegie Institute, expressed great satisfaction that Clements had been invited to study the problems of roadside restoration in Yosemite. He noted that scientists in New Zealand were applying methods of successional survey to the vegetation of one of the New Zealand national parks at Arthur's Pass. "It is pleasant to find that your methods of study are being used in so effective a way," he concluded.[10]

While Clements's endeavors had been mostly utilitarian, practical, and economic, national park officials now invited him to confront a problem that had not only practical aspects but which placed him also into the abstract realms of aesthetics. This was to expand his ideas about the larger importance of his ecological work in terms of societal and humanistic welfare. If he knew how nature worked in terms of complex vegetation, as his system of vegetational development assumed, the system could lend itself to two lines of problem solving divided along stereotypical gender roles. First, the masculine, concrete sphere of engineering and erosion problems on park roads and, second, the feminine issues of aesthetics and the achievement of "ornamentation" of the natural in the park's roadside restoration.

Not only will he be asked for guidance about restoring the scars of road cuts in the park and how to do it aesthetically in keeping with "park values," but his assignment also included attention to the Yosemite Museum Wild Flower Garden plan. It is significant that the developer of this garden, Enid Michael, wrote not just to Frederic about the need for a plan for the garden, but also to Edith. Michael described herself as an amateur in the work and noted the "broad knowledge and experience" of the Clementses and how she was "grateful for your interest and [stood] in need of your council."[11]

While the garden was a sidelight of the Clementses' appearance in the park, it did represent the departure from the normal roles Frederic played in serving the causes of the economic uses of natural resources. This is not to say that his role in the park, even in his eyes, was given over to aesthetic values or "the aesthetic" or "spiritual values of nature." Richard Sellars, historian of science in the national parks, notes that the parks have always been torn between two competitive "utilitarian urges"—one emphasizing tourism and public recreation and the other more in line with Clements's study and use of ecological science in service of consumptive natural-resource use as in logging, mining,

reservoir development, and grazing. It is true that Clements's main assignment was roadside restoration and his and Edith's requested attention to the Museum Wild Flower Garden was more or less an add-on to his (their) assignment. The request took them in the direction of the aesthetic values and appreciation that Edith had been cultivating in her interest in wild flowers with colorful and exact illustrations.[12]

While the garden might have been a significant diversion for Clements, it involved him with a larger struggle going on within the park that the Clementses perhaps were unwittingly or wittingly invited to join. Enid Michael, whose husband was the assistant postmaster in the park and a school teacher, had developed a great interest in the wild flowers of the park. She oversaw a wildflower garden near the museum on the floor of Yosemite Valley and maintained it for the instruction and admiration of park visitors. Her ideas about the organization of the garden eventually came into conflict with the park's landscape architects and more professional, male ranger-naturalists, a title that Michael occasionally held as a seasonal park appointee with a large local following because of her efforts with the garden. From the point of view of the Clementses, they were not interested in getting involved in controversy over the garden, but were interested in promoting ideas about plant associations in the garden for educational purposes. These, too, ultimately conflicted with Enid Michael's ideas about the garden's organization in terms of where the flowering plants selected from many areas of the park could, considering the shade and sunshine within the garden, achieve the best growth.

The garden remained disputed ground. Arguments ranged from disputes over whether it should even exist because these flowers did not grow there naturally but came from various points within the park, to the appropriate manner and place for planting the wild flowers, i.e., according to families or according to (the position of Clements) stages of successional transition that would lead, he believed, to a rich variety and diversity of species that represented a phylogeny or climax of the organic community. Even park officialdom disagreed with this because the diversity in the succession process would not produce a solid distinct burst of color to impress visitors. Clements deplored this attempt to sacrifice the truth of succession to the "thrills" of color.

The problem was never solved. The garden remained a battleground between the intuitive knowledge and concerns of Enid Michael that drew visitor applause and her more professional male supervisors who could not themselves devise a policy even with the help of the ecologist Clements. Ironically, Clements's ideas about an organismic climax bordered upon the naturalist spirituality that Michael expressed in what she believed were the workings of nature. She advocated her method of planting the museum garden to maintain "that element of Wildness." She said it would speak to "our memory . . . of an untouched mountain meadow and we would like to bring that enchantment here." To resurrect that memory was "to come a little way toward this ideal,"

and to do this, "one must be an ardent student of Nature, ever returning to the Immortal Fount and humbly studying there."[13]

With the arrival of the Clementses, Michael probably thought she saw an ally in Edith as an expert on wild flowers and their color displays as reflected in her drawings for articles in the *National Geographic* magazine. This hope did not bear out. Eventually Enid Michael was obliquely critical of Clements's recommendation for roadside restoration, suggesting that it was expensive and called for too much planting of a wide range of vegetation from legumes to shrubs. She was not at all receptive to his plans to turn the flower garden into a demonstration garden that instructed viewers in the progress of succession. Such pedantry would defeat the dramatic purposes of the garden and even its instructive mission. She believed "that only through thrilling color masses can one reach the heart of the people and that only through stirring their hearts can one hope to awaken their minds."[14] Generally her suggestions were to let nature take its course and replace the vegetation in a slow progressive way on the roadsides. She admitted this would take more time, but nature would accomplish it without the active intervention of Clements's plans. She wrote, "In the course of a few years, however, if let alone Nature will take care of the road side in a most pleasing manner without cost to any one." But she quickly and politely added, "It will be a great pleasure to meet Dr. Clements in Yosemite again and I am sure he has for us suggestions of pertinent value."[15]

The Clementses' encounter with Yosemite National Park as a place marked an important turning point, especially in Frederic's career emphasis. The park called upon his talents not only for erosion control in healing the scars of road cuts, but also for a solution that honored aesthetic values and revegetation in accordance with the native plant requirements of "park values." In terms of gender, the Yosemite experience drew him into the controversy between Enid Michael and park officials. Also, the ever-present personality of Edith emerged with her well-established reputation as an illustrator and expert in one of the most dramatic aesthetic creations of nature—wild flowers. Certainly in Enid Michael both park officials and Clements faced a formidable challenge. Her attention to affairs in Yosemite and her amateur status in botany and certainly in ecology fell within that category Clements long ago relegated to the status of the "literary ecologists . . . an amosin critter," whose motivations were sentimental, emotional, without scientific underpinning, imparting a spirituality to nature that could be intuited through the lens of "beauty."

While Clements rejected this, the park experience propelled him along the road of his own idealism for the remainder of the decade. In somewhat extravagant rhetoric, he wrote in 1936: "for after all as measured by centuries, landscapes make people and create character and culture and art, rather than the reverse." In this light, the knowledge of how vegetation landscapes grow and develop became central to a society's welfare and function. With the intrusion of roads into Yosemite to facilitate "consumer tourism," Clements's as-

signment was to achieve the restoration of the natural and native. "A natural landscape demands a natural treatment by means of an intelligent application of nature's processes," he asserted, and "this is not merely the method of economy, but it produces as well the highest values in ornamentation, recreation and education."[16] Nature, then, was the perfect landscape architect offering every desired effect. And Clements had a renewed and more encompassing faith of what nature was and what it tended toward in its organic forms—a climatic phylogeny or "organismic community" that acted creatively and beneficially upon human communities. Taken one step further, this idealism saw habitat and population reacting upon one another ultimately achieving a happy stability and security.[17]

Clementsian idealism brought him full circle back to the certainties of nature's "Immortal Fount" and those "amosin' critters," the literary ecologists. Both place (park values) and gender (aesthetics) propelled his journey closer to an idealistic model of how nature renewed and restored disturbances caused in this case by the machinery of road building. He and his spouse/collaborator refused to abandon the basics of their ecological model in the face of other twentieth-century ecological thinking that questioned succession and its inevitable direction toward an ultimate phylogenous and stasis climax condition. Such critics introduced an offensive chaos into the Clementsian world of predictable and modeled vegetational development. Yosemite provided a stage and sanctuary in which Clements moved his ecological science beyond the service of forage production for agricultural improvement and now into the realm of the aesthetic—restoration and protection of aesthetic values through the practice of his particular brand of ecological science.

NOTES

[1]Edith Clements to Elizabeth Jordan, 3 September 1934, Clements Papers, American Heritage Center, University of Wyoming, Laramie (hereafter cited as Clements Papers); Paul S. Sutter, *Driven Wild: How the Fight against Automobiles Launched the Modern Wilderness Movement* (Seattle: University of Washington Press, 2002), 9-10.

[2]Edith Clements to Julie Schwartz, 1899, Clements Papers; Bernard A. Weisberger, *The LaFollettes of Wisconsin: Love and Politics in Progressive America* (Madison: University of Wisconsin Press, 1994); also note introductory chapter of Eric Rauchway, *The Refuge of Affections: Family and American Reform Politics, 1900-1920* (New York: Columbia University Press, 2001).

[3]Edith Clements to Roscoe Pound, 15 September 1945, Clements Papers; Edith S. Clements, *Adventures in Ecology: Half a Million Miles . . . From Mud to Macadam* (New York: Pagent Press, Inc., 1960); for another discussion of her role in the marriage, see Joel B. Hagen, "Clementsian Ecologists: The Internal Dynamics of a Research School," *Osiris*, "Research Schools: Historical Reappraisals," Gerald L. Gibson and Frederic L. Homes, eds., 8 (1993) 178-95.

[4]*Creative Couples in the Sciences*, Helena M. Pycior, Nancy G. Slack, and Pnina G. Abir-Am, eds. (New Brunswick, N.J.: Rutgers University Press, 1996), 13; Edith Clements to family in Nebraska, 10 September 1911, Edith Clements Papers, Nebraska State Historical Society, Lincoln, Nebraska (hereafter cited as Edith Clements Papers).

[5]Pycior *et al.*, *Creative Couples*, eds., 21.

[6]William D. Rowley, "Historical Considerations in the Development of Range Science," in *Forest and Wildlife Science in America: A History*, Harold K. Steen, ed. (Durham, N.C.: Forest History Society, 1999), 240; All would be quite consistent, but of no important revelation, with what Frieda Knoblock would call "agriculture as colonization in the American West" in her book *The Culture of Wilderness*, more accurately reflected in the subtitle, *Agriculture as Colonization in the American West* (Chapel Hill: University of North Carolina Press, 1996).

[7]Washington, D.C.: Carnegie Institute, (1916).

[8]Hagen, "Clementsian Ecologists," 180.

[9]Frederic Clements to J.E. Weaver, 28 January 1921, Clements Papers; Janice Emily Bowers, *A Sense of Place: The Life and Work of Forrest Shreve* (Tucson: University of Arizona Press, 1988), 59; Hagen, "Clementsian Ecologists," 180; also see Richard White, "Contested Terrain: The Business of Land in the American West," in *Land in the American West: Private Claims and the Common Good*, William G. Robbins and James C. Foster, eds. (Seattle: University of Washington Press, 2000), 203, for the assertion that the Clementsian nature model was a social creation and a form of a nature fundamentalism; Sally K. Fairfax and Lynn Huntsinger, "The New Western History: An Essay from the Woods (and Rangelands)," in *The New Western History: The Territory Ahead*, Forrest G. Robinson, ed. (Tucson: University of Arizona Press, 1997), 204.

[10]John Merriam to Clements, 28 April 1933, Clements Papers.

[11]Enid Michael to Dr. and Edith Clements, 18 August 1932, Interpretation Accession Wild Flower Garden, Yosemite Museum Library, file folder 833-01.3.

[12]Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven: Yale University Press, 1997), 15-16.

[13]Enid Michael, "Report on Wild Flower Garden," 30 September 1938, typescript, Yosemite Museum Library.

[14]Enid Michael, "The Museum Wild Flower Garden: Brief Report of Progress and New Development Contemplated," 30 July 1934, Clements Papers.

[15]Enid Michael to Park Superintendent, 19 April 1933, Yosemite Museum Library, files.

[16]Frederic E. Clements and Franz A. Aust, "Highway and Landscapes of Today and Tomorrow," typescript, c. 1936, Clements Papers.

[17]Sharon E. Kingsland, *Modeling Nature: Episodes in the History of Population Ecology*, 2nd ed. (Chicago: University of Chicago Press, 1995), 18.

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Compiled by MARTA GONZALES-COLLINS

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Book Reviews

Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservationism. By Karl Jacoby (Berkeley: University of California Press, 2001)

Given the intense battles that have been fought over timber and grazing in the National Forests since their creation in the late nineteenth century, it is hard to credit that one of the most intense contemporary brawls is focused on the harvesting of the lowly mushroom. But exploitation of the mushroom, along with that of moss or beargrass, has blossomed into a big, if volatile business. Originally driven by local needs—for spiritual use, personal consumption, or regional commerce—of late the gathering of what the Forest Service classifies as nontimber forest products (NTFPs) has grown exponentially in response to the emergence of an often international marketplace. With the escalation of demand, introduction of larger capital investment, and greater potential for profitability, the pressures on the resources themselves have built to the point that their continued existence is in some cases imperiled. What are the ecological implications of the annual stripping of tons of moss from trees in Oregon? What are the social costs of hiring poorly paid Asian and Hispanic workers to pick mushrooms, and on the Native American peoples whose lives and livelihoods have revolved around the harvesting and consuming of these fungi? What of the forest biota?

No one knows the answers to these questions because until relatively recently no one knew they had to know. The Forest Service, for one, has been scrambling to develop a better understanding of the complex ecological and human dimensions of this situation, and to establish ways to measure, monitor, and regulate NTFPs. For those managers, policy makers, and scientists now involved in this complicated project here's a tip: As you probe the modern dilemmas confronting the public lands, you might want to be aware of their troubled historical context. One book that offers compelling insight into some of the ramifications of late nineteenth-century land management practices is Karl Jacoby's *Crimes Against Nature.*

This work explores what it proclaims is a hidden history of the American conservation movement—how the assertion of state and/or federal sovereignty over public lands and the resources they contained was met with stout resistance from "rural folk." The resultant struggle for control illuminated a critical debate over the rise of the nation-state, its tight alliance with the burgeoning capitalist economy, and the demise of local values, not least ecological ones.

To capture these tensions, Jacoby structures his book around a trio of stories emanating from disparate and far-flung American landscapes at the turn of the twentieth century: Forest (the Adirondacks), Mountain (Yellowstone), and Desert (the Grand Canyon). Each environment, for all its unique natural and human elements, allows him to seek a unifying set of events that underscores one of his central claims, that this era produced "an unprecedented outburst of legislation known as the conservation movement [which] radically redefined what constituted legitimate uses of the environment" (p.1). That assertion is not particularly new. The anglers, conservationists, foresters, and hunters who advanced the new legal codes knew full well that their regulatory ambitions were novel. They knew, too, that when they redefined "the rules governing the use of the environment" they were also addressing "how the interlocking human and natural communities . . . were to be organized" (p. 5). What then make of a title that speaks of crimes against *nature*? Nowhere is that sensationalistic charge identified or explained. But this book instead makes its mark through its careful evaluation of the enduring struggle between contending human *ideas* of how best to utilize and regulate consumption of natural resources.

Take Jacoby's analysis of the social unrest that erupted in New York State, Montana, and Arizona when governmental regulatory authority was first asserted. To understand the increased incidence of occasional violence, poaching, trespass, and fire, he draws on the rich historiography of the revolts that followed imposition of state controls over European landscapes in the eighteenth and nineteenth centuries; this is a deft choice for comparision given that some of the American language of conservationism found its source in those same countries. To locate similar episodes in the United States, Jacoby taps court records and small-town newspapers, and offers some clever re-reading of the standard narratives of conservationist ideology, to reveal the fraught landscape in which the modern state and "country people" met head on.

Among the most troubled by this collision were those who signed on as rangers to patrol these public lands. Many were locals, and, like those who guarded New York's Adirondack National Park, had been hired because they knew the land well. Their intimate knowledge of the environment—natural and human—could spawn a case of divided loyalties, however. "The game protectors realized the hardships which a thorough and effective execution of their powers would entail," *Field and Stream* observed in 1899 about those who protected the vast upstate forest; "in most cases it was more than their positions were worth to buck up against public sentiment and antagonize the community in which they lived by a strict enforcement" of the laws of game and fire protection.

Such ambivalence was less evident in Yellowstone, which was guarded by the United States Army, but even there Jacoby finds evidence that some soldiers cooperated with local poachers. But he also uncovers letters to the park's

superintendent, and to local newspapers, indicating that other Montanans worked in conjunction with the park's army administrators to stamp out the depredation of endangered wildlife. This fluid set of alliances troubles Manichean visions of good conservationists and evil country folk that so often animated then contemporary discourse about the need for rigorous federal controls.

And what of the Havasupai who called the Grand Canyon home? They resisted efforts on the part of the Department of the Interior's General Land Office, and later the Forest and Park services, to restrict their movements and to prohibit their annual winter hunting and gathering. Their protests were more easily brushed aside than those of white settlers, but there were evasions and compromises that complicated the Park Service's assertion of dominance over the tourist terrain. Still, Jacoby concludes with an elegy, "Farewell Song," a tribal composition that mourns for "Dripping Spring/Land I Used to Roam." Blocked from entry to grounds enfolded into the park, the Havasupai entered a "new and confusing era—one in which the practices of the past were forbidden and the future appeared uncertain" (p. 191).

But federal conservationism was not fully triumphant. Sagebrush rebellions against its dominion over public lands flared throughout the twentieth century; park and forest rangers have borne the brunt of local challenges to their authority. Native American peoples increasingly have used legislative and judicial means to force federal agencies to allow them to hunt wildlife, utilize resources, and worship on once restricted lands. Such challenges will continue—just ask any mushroom picker—and that, too, is a legacy of the Progressive Era conservation movement.

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American Nature Writing 2001. Edited by John A. Murray (Corvallis: Oregon State University Press, 2001)

This collection, part of an ongoing series, contains some good reading, but does not live up to the series' claim that it represents "the year's best nature writing." In this volume I found only nine out of twenty-one selections that I considered fully successful work. Given the tremendous output of nature writing today, it comes as no surprise to find more and more work of high quality and with an increasing diversity of styles and themes, making it ever harder to single out a representative selection of the finest work. First, no individual could hope to survey the field in a manner sufficiently comprehensive to know the

"best" of what's been written. Second, no individual can possibly have the basis to claim that he or she can determine the best for everyone anyway. Third, Mr. Murray and his publishers can probably not afford to publish the best fifteen or twenty works even if a team of reviewers using universal criteria could find these texts. Fourth, by its very nature, an annual anthology has to focus on short pieces, thus excluding full-length works from the category of "best."

American Nature Writing 2001 does contain a diversity of styles, but most of the pieces are, as one would expect, short works of nonfiction, or short excerpts from longer prose works. Larry Glass, an executive for a bioscience company, has written the most successful essay in this collection. His "Flintstone" focuses on his and his wife's weekend farm in western Maryland. Mellow and unromantic, this piece contains significant honesty about the limitations of Glass's own understanding and his own environmental ethics; at the same time it reveals that he has put considerable time and energy into doing his homework about the farm and the region around it. For Glass and his wife, this retreat has become their home, not in the sense of where they spend the most time, but in the sense that this place, its landscape and its rhythms, increasingly defines their self-awareness and their evolving identities. As he notes near the end, "The relationship that I have formed with Flintstone is more a biological bond than an attachment" (p. 55). Glass addresses well the fact that, as applied to their place, the word *farm* is a misnomer since it fulfills no economic needs and therefore requires none of the hard decisions that working farmers must face. This lack of economic burden accounts, no doubt, in large part for the article's mellowness, since Glass has the luxury of accepting ecology as change as well as the patient time line that enables him to allow Flintstone to heal itself after a ravaging flood.

Glass's meditation on home is followed by another highly successful piece, Mary Hussmann's essay on an all-female foursome's kayaking of Alaska's Glacier Bay. Again, I liked the honesty and introspection here, particularly that relating to the complexities of intense personal interaction on such a trip. Hussmann adroitly interweaves her main narrative essay with journal entries and strong occasional use of dialogue. As with so much nature writing by women, other people form an integral rather than intrusive part of this story, a lesson I think more male writers need to learn. Perhaps that is part of what I liked about Glenn Vanstrum's "Oceans Mexico"—his inclusion of other human characters, both positive and negative. Of these three essays, his is the most overtly political and environmentalist, which can often be deadly to the artistry and a turnoff to the as yet unconverted reader. But Vanstrum pulls it off through maintaining a strong narrative line and letting some of the behaviors of the other characters speak for themselves.

In putting this collection together, Murray rightly attended to including suburban- and urban-connected pieces and avoided making nature writing ap-

pear to be a strictly wilderness-focused genre. Bill Sherwonit's "Anchorage's Hillside: Living with Wildness" and Peter Friederici's "May:Clay" treat the wild in the urban and do so in ways that make me want to read full-length works by both of these authors. "Hillside" is a specific neighborhood and Sherwonit treats it appreciatively, depicting the redeeming qualities of the city of Anchorage and showing the kind of awareness of wildlife around him that any person living in any place could experience with sufficient patience and attention. Friederici focuses on the clay hills that make up part of the ecology surrounding the Chicago area shores of Lake Michigan. He emphasizes how he eventually recognized that the changes in the bluff near his home were not anarchic as he first thought, but rather followed their own pattern, integrating responses to human actions.

Two other well-written pieces I want to mention are Louise Wagenknecht's "A Long Death" and Gretchen Dawn Yost's "First Burn." Wagenknecht, a Forest Service worker, provides a careful study of the death of a logging-mill town and the dire straits of the Klamath National Forest. Although pessimistic in terms of both tone and scientific details, "A Long Death" does not read as merely elegy but as an appeal to correct the damage done, to get things right, and to stop making the same mistakes. In contrast, Yost's story about her first experience as a wilderness ranger being dropped in to fight a small fire in the Bridger-Teton National Forest is filled with exuberance, energy, and optimism. Yost ends by focusing on how quickly nature responds and begins to rebuild and reinhabit. No doubt Murray intentionally arranged these two entries so that Yost reads as a rejoinder to Wagenknecht, without undercutting the truth of the stories that both tell.

The pieces in this volume that I didn't like failed me for three basic reasons. One, a few of them were too heavy handed, with sanctimonious and self-satisfied attitudes that caricatured other people in order to make the author look more grand. David Petersen and Murray himself fell into this camp. I was particularly irritated by Murray's hogging 15 percent of the total volume with an utterly self-serving narrative. Several pieces just seemed thin to me, more travelogue than nature writing, while the third category consisted of pieces that had adequate narrative development but insufficient introspection or thematic thrust. While I can easily recommend specific authors and pieces contained in this volume, I would not recommend it as a whole, nor would I encourage anyone to use it as an introduction to the field of nature writing. The regional anthologies would be better choices, particularly those that have more multicultural and generic breadth than Murray's collection.

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Nature's Army: When Soldiers Fought for Yosemite. By Harvey Meyerson (Lawrence: University Press of Kansas, 2001)

Read this book if you're interested in Yosemite, the Old Army, wilderness preservation, United States military history, concepts of masculinity, or California in the Gilded Age. Harvey Meyerson does it all, and does it well. In particular, *Nature's Army* highlights the activities of the Fourth Cavalry in policing Yosemite National Park from 1891 until 1897, when the advent of the Spanish-American War started to change the army'self concept of itself. Following "Part III: Inside Connections" on the meaning of Old Army militarism, a brief "Epilogue" covers park administration to 1916, when the newly created National Park Service took over. Into this framework, Meyerson has woven unforgettable portraits of an army that no longer exists led by frontier-hardened officers and of the Yosemite they encountered, revived, and preserved for present delight.

Meyerson begins with the history of the Old Army, the blue-coated servants of westward frontier expansion, who were replaced by the khaki-clad New Army "when America's engagements turned global and World War I loomed on the horizon" (p. 2). In "Part I: An Army Like No Other" he traces the Old Army heritage of civilian authority back to George Washington, bringing the reader rapidly up to 1890 with a brisk discussion of military protocols, select West Point graduates (especially Ranald Mackenzie), and the early careers of men bound (though they did not yet know it) for service in Yosemite.

Meyerson clearly sympathizes with the soldiers he describes, and "Part II: The Call" in particular contains a series of flattering portraits of Yosemite's guardian officers. But the evidence he has culled from far-flung sources compels the reader to feel likewise. Who would not sympathize with Captain "Jug" Wood, issuing meticulous, policy-shaping reports in an absence of any clear instructions while painfully dying of tongue cancer? Or with Lieutenant Colonel S. B. M. Young, running an illegal hunting party of San Francisco's high-rollers out of the park with the same dispatch he used on local sheepherders?

Enmeshed in the narrative of Yosemite protection, Meyerson discusses male bonding under military auspices, the importance of pageantry dating back to ancient times, and, most important, Old Army sympathy for the American wilderness and its inhabitants. He argues persuasively that the army's institutional values of discipline, political disinterestedness, and true love of nature (after a career spent in the saddle covering much of it) made it the only entity dedicated enough and skilled enough to preserve the park in the face of Gilded Age rapaciousness. The army's unique approach to nature helped educate others in the preservationist ethic, a role previously acknowledged only in regard to such organizations as the contemporaneous Sierra Club.

In honoring the army's preservationist role, Meyerson also offers some historical revision, particularly in regard to Gifford Pinchot, and, to a lesser

extent, Leonard Wood. He outlines the ways in which Pinchot undermined the politically inept (but pro-Army) Charles Sprague Sargent as Pinchot climbed to head the United States Forest Service. The contrast between the old emphasis on civic virtue and a man's character, explicit in the Old Army, and modern, go-getting individualism could not be more clear.

Throughout, this study rests on an impressive array of records from the War Department, the Department of the Interior, private papers at Yale's Beinicke Library, the Bancroft Library at the University of California, Berkeley, the Library of Congress, West Point, the Presidio at San Francisco, the United States Military History Institute at Carlisle Barracks, Pennsylvania, and, of course, Yosemite National Park, as well as published memoirs. Military muster rolls, procedure manuals, and works dealing with everything from Christian manliness to nature mythology have all been consulted as well as standard secondary historical treatments for the period and the subject. The book's footnotes are extensive and informative as all of these diverse works are brought to bear on the subject.

Readers interested only in Yosemite will find "Part III: Inside Connections" to be a digression. In it, Meyerson's underlying theme rises to the surface as he fleshes out one of his opening assertions: "The Old Army exists in American memory mainly as the Indian-fighting cavalry films of John Ford. Its historical reality is far more complex, remarkable, and instructive about American culture—instructive not only on its own terms but also for the perspective it offers on the civilian society it served" (p. 2). In this section, particularly in chapter 8, Meyerson construes "society" very widely, going back to the roots of western civilization. He also touches on increasing militarism under Theodore Roosevelt, the army's success in organizing CCC camps in the 1930s when other agencies failed, the significance of dance and drill, and the alleged natural rhythms of military life (among other topics), all of which add a colorful extra dimension to a potentially narrow study. In fact, this book is anything but narrow, and should inform and intrigue general readers, college students, and historians alike.

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American Green: Class, Crisis, and the Deployment of Nature in Central Park, Yosemite, and Yellowstone. By Stephen A. Germic (Lanham, Maryland: Lexington Books, 2001)

On first glance, this book seems to provide a brief analysis of the American parks movement of the nineteenth century. It is short, with just 113 pages of narrative text, but readers of *American Green: Class, Crisis, and the Deployment of Nature in Central Park, Yosemite, and Yellowstone* will soon find this slender book to be a densely reasoned treatise that requires a great deal of time and attention. Based in Marxian theory and deeply informed by the works of the cultural geographer Henri Lefebvre, this is an arduous but very rewarding text. At times the prose can be clumsy or convoluted, with a reliance on first-person narrative and the passive voice that can be unnecessarily distracting, but this remains a very important work from a powerful intellect. No one with a casual knowledge of Central Park, Yosemite, or Yellowstone will view these places in the same way after reading this book. Even those with the deepest historical understanding of these places will greatly appreciate Stephen Germic's ability to reconceptualize these places through a blend of cultural geography, ecocriticism, economic theory, and narrative studies.

Germic argues that Central Park in New York City (1857-59), Yosemite in California (1864), and Yellowstone in Wyoming Territory (1872), were all established in response to particular economic crises. In each case, a financial panic caused by overproduction raised the spectre of class warfare and threatened an elite sensibility of America's unique destiny to escape the social and political problems that haunted all great civilized peoples. As Germic puts it, "an idealized concept of nature was a principal 'resource' exploited to manufacture the geographies of difference intended to mediate capitalist crises and stabilize and secure an idealized, which is to say unambiguous, yet abject, national identity" (p. 2). While these parks provided a refuge from the social and political conflicts that accompanied the growth of industrial capitalism, they also offered a space where the upper classes could exercise and define a sense of national identity through communion with American nature. Secondarily, these parks also provided a moralizing space for the "barbaric" classes, to paraphrase Frederick Law Olmsted, where they could model and partially acquire "civilized" behaviors.

None of the above is novel or unique to Germic, but he pushes his study of parks in new directions. On the one hand, he borrows from Henri Lefebvre's ideas about the production of space, whereby centralized governmental authority defines, maps, and ultimately manifests the authority of the nation state through the creation and manipulation of geographic space. Because the production of national space necessarily reflects the tastes and interests of political and economic elites, the nation is not an expression of a common democratic identity but an integration of the physical structures and geographies

that express and sustain a powerful hegemony. Native dispossession and the exclusion of non-elites from the first national park, for instance, made "Yellowstone a beachhead in the expansion of . . . economic and cultural domination. In this view, Yellowstone is . . . not a space reserved, but at once a socially *produced* space and a consuming and consumed space" (p. 71; emphasis in original).

In regard to this last point, Germic unwittingly borrows from Thorstein Veblen's ideas about "conspicuous waste" and the "leisure class." The problem of capitalism is not production, as Veblen makes clear, but consumption. The most effective way to keep pace with overproduction is to honor wasteful consumption by an elite class that will consume and waste far more than it needs. Parks, which only produce economic value as places of leisure, serve as logical responses to the crises of overproduction that shook the nineteenth century. As Germic concludes, these three parks were "not so much preserves of 'nature' –which was their rhetorical justification—but . . .instruments deployed to control contested space, constitute a stable class and national identity, and to assure the reproduction of the dominant social order during times of profound crises, when capital overaccumulation precipitated major economic depressions that led to widespread worker radicalization and class conflict, in turn profoundly threatening national (capitalist) unity" (p. 109).

The arguments in *American Green* are compelling and deserve serious attention, but they do not always stand up under close scrutiny. Germic is at his best when he discusses Central Park and Frederick Law Olmsted. Olmsted's class anxieties, his mistreatment of laborers, his social aesthetic as applied to an idealized conception of nature, and the economic crisis that framed the creation of Central Park all bear out Germic's central points. His thesis is on shakier ground when applied to Yosemite however. Olmsted was arguably the most important proponent for making Yosemite Valley into a federally protected park and his ideas about Yosemite certainly echoed his thoughts about Central Park. The creation of a park in the Sierra Nevada in 1864 was not a response to economic crisis, as Germic implies, but civil war. Amazingly, the Civil War does not figure into Germic's analysis except as a reason to explain Olmsted's moving to California. Ultimately, it is too much to suggest that Olmsted was as responsible for Yosemite as he was for Central Park, and Germic errs in making him the focus of this portion of the book.

Probably the weakest section of *American Green* deals with Yellowstone. Here Germic gets simple facts wrong; for instance, he locates Yellowstone in Montana when in fact it was primarily in Wyoming Territory, and he frequently betrays a limited knowledge and confusion about native peoples and relevant American Indian policies. More significant, Germic's propensity to attach a particular economic crisis to the creation of Yellowstone National Park in 1872 is strained beyond reason. Jay Cooke actively promoted the creation of the national park for several years, he did expect that a park would increase

ridership on his Northern Pacific Railroad, and overbuilding on the Northern Pacific did help precipitate the economic crash of 1873. However, the park could not have been established in response to a crisis that had not yet occurred. These errors deserve mention, but Germic's book is still worthy of a great deal of attention. It is too intelligent, and its reasoning too powerful, to be dismissed by a few contradictions. Indeed, this is an important addition to the study of parks and their creation that merits a wide audience.

Mark Spence
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Nixon and the Environment. By J. Brooks Flippen (Albuquerque:University of New Mexico Press, 2000)

J. Brooks Flippen wants to set the record straight regarding Richard Nixon's tenure in the White House. Many presidential scholars have focused on the foreign-policy aspects of the Nixon presidency—especially Vietnam, China, and the Soviet Union. Others have focused on the internal dynamics and policy choices that led to the sinking of that administration under the weight of Watergate. Flippen wants us to remember Nixon's environmental legacy as well, since this aspect of Nixon's record, in Flippen's view, deserves much more credit than it has been given to date.

This book is meticulously researched and documented. It is surprisingly well written and readable, given the level of detail presented. Flippen gives a thorough account of the politics of environmental policy making from the early months of 1969 through Nixon's resignation in August of 1974. By that time, we had in place—in large part because of Nixon, Flippen argues—the cornerstones of our present-day environmental program, the National Environmental Policy Act (NEPA). We also had in place the Council on Environmental Quality and the Environmental Protection Agency. And we had, as well, major pieces of environmental legislation on the books, dealing with not only clean air and water, but endangered species, pesticides, ocean dumping, coastal-zone management, and marine mammals. Indeed, the breadth of environmental legislation passed under Nixon's watch was matched only by the "rapidity with which *Congress* passed it" (p. 227; emphasis supplied). And there's the rub—a rub which Flippen himself documents and readily admits. Much of this legislation came at the instigation of Congress, especially from Democratic senators (like Edmund Muskie and Henry Jackson) who were more truly committed to environmental reform.

When Nixon assumed office at the height of the environmental movement of the 1960s, the country was being pulled in many different directions. It was an era of movements, each one of which was clamoring to have its grievances

addressed, from the war in Vietnam to civil rights. The economy was beginning to falter. An energy crisis loomed on the horizon. In the midst of all this, it seems Nixon initially seized on the issue of environmental protection because, as Flippen himself admits repeatedly, it was politically expedient to do so. Here was one set of problems, at least, that the Nixon administration could address, and address quickly. Nixon could play the environmental card, curry favor among environmentally oriented voters, and beat the green Democrats in the Senate to the punch in one fell swoop. He seemed to think, as well, that this particular card would be an easy one to play—but it was not, in the end. The environmentalists were never satisfied, and constantly criticized Nixon's environmental programs as not going far enough. Big business and industry generated such a backlash of resistance that Nixon ultimately chose to move to the right in all areas of domestic policy making usually associated with liberals: welfare, education, social programs, and, of course, the environment. Ironically, Nixon eventually tried to weaken many of the environmental programs he had helped to create—again, for reasons of political expediency.

Flippen acknowledges and even documents this. But if previous scholarly work neglected this aspect of the Nixon legacy, it appears that Flippen gives Nixon too much credit—and where such credit cannot be supported by the facts, Flippen softens the conclusion a reader might reach. Regarding Nixon's reversal to the right, for example, Flippen seems to suggest that this somehow strengthened the opposition's ability to pursue additional environmental programs—and to protect the ones already in place, a line of argument applied later (and with much more supporting evidence) to President Ronald Reagan and the environment. Flippen can be forgiven for overstating his case at times however, because the book as a whole, carefully researched and documented as it is, speaks for itself. In addition, and more important, this book can be praised for what it accomplishes beyond establishing the Nixon administration's environmental legacy. *Nixon and the Environment* paints a powerful picture of national politics and policy making—with the president at the center of it all—during the tumultuous years of the late 1960s and early 1970s. Nixon had many significant issues to deal with, of which the environment was only one—and in Nixon's view, ultimately, not even one of much significance. Flippen captures the essence of the Nixon administration, as it was pulled and pushed in many different and competing directions. In this light, what is amazing is that Nixon was able to devote *any* time to environmental issues, much less to significantly participate in the shaping of the major environmental programs we have in place today. Thus *Nixon* is appropriate and compelling reading for undergraduate and graduate students alike, and for courses dealing with American politics at the national level, public policy courses (especially those focusing on the environment), and courses on the American presidency.

Leah L. Wilds
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The Ecological Indian: Myth and History. By Shepard Krech III (New York: W.W. Norton, 1999)

Myth and history are intertwined, and where they intersect you will almost always find politics. Such is the case with Shepard Krech's *The Ecological Indian*, which has received both great praise and intense criticism since its publication in 1999. The book sets several decades of scholarship and debate concerning the relationship of American Indian peoples to the environment against the recent and very popular image of American Indians as the nation's environmental conscience. In his introduction Krech traces the origins of the "ecological Indian" from the romanticism of Lahontan and Rousseau through *The Leatherstocking Tales* of Cooper to the iconic "crying Indian" of the 1970s public-service announcements. All of these images are variations on the noble-savage stereotype which the dominant society has used as a self-critique. These images are not real and they are not native. Krech states that his major purpose is to "determine the extent to which Indians were ecologists and conservationists (as is commonly understood today)" (p. 212). In essence, he seeks to measure historical truth against mythic stereotype. With the question posed in this way, the answer can only be no. While Krech rightly points out that it is dehumanizing to expect Indian peoples to behave according to a non-Indian stereotype, it is exactly this tension which frames the book and opens his work to misrepresentation.

On one level *The Ecological Indian* provides a very good and accessible synthesis of American Indian environmental history since the 1960s. Seven topical chapters examine a range of hotly debated issues including the Pleistocene extinctions of megafauna, Hohokam irrigation, precontact native populations and the impact of epidemic disease, American Indian uses of fire, and native relationships with three critical game species: bison, deer, and beaver. These chapters are deeply researched, well written, and amply footnoted. The book will appeal to a wide range of readers interested in American Indian history as well as in current environmental issues.

Unfortunately the book cannot escape the limitation of its interpretive framework, and the chapter on beaver illustrates these problems. The central question of the chapter involves the origins of family hunting territories among the Crees. These areas essentially became the exclusive property of Cree families and functioned to limit the beaver take. Modern Cree people and some scholars argue that they were aboriginal in origin and reflected the Cree's respect for nonhuman life as well as an intimate understanding of nature. Krech is more skeptical. Cree belief systems emphasized maintaining proper spiritual relationships with game species and included the concept that animals taken in the proper way would be reincarnated. Thus, native cosmology was not necessarily a check on overhunting. Citing the lack of historical evidence for the territories before the 1830s, Krech largely credits the near extinction of the

beaver and subsequent initiatives by Hudson's Bay Company traders for the creation of the family hunting territories as a conservation measure. Moreover, he contends, this postcontact system has been adopted by modern Cree people as a critical part of their identity as native people. This may well be true, but if Indian peoples were not environmentalists, ecologists, or conservationists "as is commonly understood today," neither were the leaders of the Hudson's Bay Company. This fact tends to get lost in the shuffle. At the same time they encouraged Cree conservation, company leaders also pursued a policy of creating a "fur desert" in what is today Idaho. In the 1820s the company's Snake River Brigades were ordered to exterminate all fur-bearing mammals in the hope of forestalling the advance of American free trappers toward Oregon. Politically motivated readers can, and have, read this chapter as evidence that conservation ideals arose only from non-Indian sources and were a product of the free-market system. While this is not what Krech intended, by the end of this chapter the reader may wonder whether his target is still an unrealistic stereotype or the modern Indian peoples who have adopted the image as part of their identity.

Yet Krech is not a racist or anti-Indian. On the contrary he is part of a generation of scholars who came of age in the 1960s and 1970s who sought to present American Indians and other colonized peoples as real people and active agents in their own histories. Real people make mistakes. They do not have the benefit of hindsight. Real people use the land and, in the process, transform it. No human society has ever tread so lightly that it had no impact on the earth. It is not these conclusions, but their comparison with an unrealistic stereotype, which opens the door to attacks from all sides of the political spectrum and reveals the ever-present tension between myth and history.

Gregory E. Smoak
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American Indians and National Parks. By Robert H. Keller and Michael F. Turek (Tucson: University of Arizona Press, 1998)

As the American concept of national parks evolved in the late nineteenth and early twentieth centuries, the ideas put forward by park advocates invariably excluded any presence of indigenous people. Spectacular scenery, particularly in the West, offered Americans a chance to experience unspoiled nature, and because such lands remained part of the public domain, proponents were able to preserve some of that monumental scenery intact as national parks. But their ideas of pristine nature had no room for the Native Americans who lived in and near parks and traditionally had hunted and gathered food within

their boundaries. *American Indians and National Parks* is the first scholarly work to explore the conflicts between this country's indigenous people and the national parks and their protectors, most often the National Park Service.

The story of dispossessing American Indians of lands located within national parks boundaries began in 1851, when the Mariposa Battalion brutally expelled the Ahwahneechee from Yosemite Valley. Following the conquest, politicians formally established Yosemite National Park in 1864, disregarding native claims and subsequent petitions for redress, while relying on park rangers to evict the remaining villages. This first national park, Robert Keller and Michael Turek point out, "provided the worst possible scenario for Indian/white relations" (p. 20).

While restricting Indian use at Yellowstone was less brutal, the story of the removal of the Blackfeet from the Glacier region revealed another example of callous indifference toward Indian rights. In 1895 naturalist George Bird Grinnell helped broker the sale of Blackfeet lands to the federal government for $1.5 million; shortly afterward he emerged as the leading promoter for the area's inclusion in Glacier National Park. In 1910 President William Howard Taft signed legislation to create the new reserve, and with it Blackfeet hunting and gathering rights were terminated. Members of the tribe found occasional employment at the park as "some good-type Indians" to greet tourists arriving on the Great Northern Railway and to provide authentic entertainment.

Variations of such themes appear in all of the episodes discussed in the volume; these include Utes and Navajos at Mesa Verde, Paiutes (as well as the Mormons) at Pipe Springs National Monument, northwestern tribes at Olympic National Park, the Havasupai at Grand Canyon, Navajos at numerous sites in Arizona and New Mexico, and the Seminoles at the Everglades. Analysis of these encounters leads Keller and Turek to portray the relationship between parks and Indians as proceeding through four phases. Initially, the federal government appropriated Indian land unilaterally, as happened at Yosemite, Glacier, and Mesa Verde. That practice ended with the establishment of the National Park Service in 1916. In the second phase, such taking no longer occurred, but the Park Service neglected tribal cultures, treaties, and needs, as was the case at Escalante, Pipe Springs, and Olympic National Park. Indian resistance and aggressive pursuit of tribal interests were characteristics of the third phase. And since 1965, the final period, the Park Service has taken on a commitment to cross-cultural integrity and cooperation, a change that was initiated at Grand Canyon when the Havasupai protested park expansion and won. Finally, the Park Service adopted its Native American Relationships Management Policy in 1987 and made an official commitment to promote tribal cultures in national parks.

In recent years, the Park Service has improved its awareness and sensitivity; more Native American presence is evident in interpretive programs and related employment. But that progress has not dimmed the memories of

descendants of those removed in earlier times. On the Blackfeet Reservation, for example, George Kicking Woman and Vicky Santana remember that the land once belonged to their grandparents. "We lost everything up there, and some day we will get it back," George Kicking Woman promises (p. 235).

American Indians and National Parks portrays a relationship long ignored in the West's environmental and cultural history. It underscores the peculiar inability of whites to understand and respect Indian concepts of nature and their place in it.

The volume is thoroughly researched. Keller and Turek, like many scholars writing about national parks, found the vast resources of the National Archives crucial to their work. In addition, they read widely in the secondary literature and also conducted 235 interviews, 100 of them with Native Americans.

While the authors have surveyed the complex relationship between Indians and the parks, they seem uncertain about the essential themes that hold their story together. They raise an important list of questions in the preface (based on *Resident People and National Parks* by Steven Brechen and Patrick West), yet they never quite develop these critical ideas into a strong theme that might provide a needed sense of unity to their narrative. Consequently the book is more a collection of related episodes than it is a thoroughly historical and critical study. In all, it is well written, and students of the West, Native Americans, and the national parks will find it valuable. Readers will also want to consult two more recent works on the topic, Mark David Spence's *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (1999) and Philip Burnham's *Indian Country, God's Country: Native Americans and National Parks* (2000).

George M. Lubick
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American Sportsmen and the Origins of Conservation, 3rd ed., rev. By John F. Reiger (Corvallis: Oregon State University Press, 2001)

For nearly three decades, John Reiger's important 1975 study has compelled historians and the public to rethink their understanding of the origins of "conservation." In his short and sometimes combative book, Reiger argued that historians like Samuel Hays had exaggerated the role of engineers and Progressive Era experts, while others like Roderick Nash had paid too much attention to the transcendentalist and romantic embrace of wilderness. Instead, Reiger pointed out that a self-conscious group of upper-class sportsmen, dedicated to hunting and angling according to a gentlemanly code, had become increasingly vocal and organized regarding the need for the state to step in and

protect nature from destructive and unregulated use, and in so doing had influenced others such as Gifford Pinchot. More to the point, Gifford Pinchot was one of them. Led by George Bird Grinnell, the long-time editor of *Forest and Stream*, these hunters and anglers were interested in more than using the state to preserve their sport; Reiger argued persuasively that it was out of their personal engagement with nature through hunting and angling that sportsmen developed an appreciation for the need to protect not only individual species, but also their habitats. For these sportsmen, recreation and science were not mutually exclusive categories, as many of them engaged in the pursuit of natural history, for which their recreational activity provided them with specimens. At the same time, *American Sportsmen and the Origins of Conservation* took contemporary environmentalists and animal lovers to task for assuming that sportsmen could not have given rise to such a conservation ethic. Reiger's introduction, explained, in ways that anticipated recent works by William Cronon and Jennifer Price, that many of us have become so "removed from contact with the natural world"—"believing that water comes from the tap and sirloin from the supermarket," that we may "well be incapable of understanding why earlier Americans found it pleasurable to hunt their own food; nor will [we] comprehend how hunting nurtures a love for the quarry and its environment" (1986 edition, p. 12).

Yet not all who hunted developed such a sense of responsibility; *American Sportsmen* emphasized that it was a cadre of elites who took old aristocratic values regarding sport and game and applied them in a more democratic fashion to influence policy. It was they who developed a love of nature through their absorption of the code of the sportsman. The new and expanded third edition makes this process more visible and satisfying. The reader will benefit from three kinds of changes. The first can be found in a new opening chapter that develops the historic relationship between social class and sport. Opening with quotations from William Elliott and John Quincy Adams that attest to the association in the popular mind between game laws and aristocracy, the chapter provides evidence of the longstanding grievance among many elites that a democratic society was destructive of nature and sport. The author leads us through a discussion of George Perkins Marsh's 1857 report on artificial propagation of fish (which anticipated many of the themes of his more widely known *Man and Nature*); Reiger believes attention to this work is necessary because of the generic democratic hostility to game laws. He notes that this complaint was registered by elites across the country, and his discussion of the South Carolinian planter William Elliott's lament that his overseers killed the game on his plantation during his extended stays in Charleston is effective in making the point. Readers will also benefit from a new epilogue that treats the relationship between the Aldo Leopold of *A Sand County Almanac* and the Aldo Leopold who was an avid hunter. Reiger finds portions of Leopold's classic environmentalist text that reveal the lessons he had learned as a sportsman, and supplements these stories with testimony from Leopold's daughter;

his former hunting and fishing partner, Robert McCabe; and Leopold's own letters, all reinforcing the point that his environmentalism flowed from his hunting.

A final change is more general. In the earlier editions, Reiger tended to provide the reader with names of prominent men grouped together by association, informing the reader that influential advocates of conservation such as Robert Barnwell Roosevelt, Teddy's uncle, were sportsmen and leaving it at that. In this expanded edition, the author has provided evidence that the participation of Roosevelt and others in hunting or membership in the Boone and Crockett Club was a meaningful experience. Some of the additions are brief, but they help flesh out the ways in which this subculture interpreted its own experience. For instance, Benjamin Harrison's secretary of the interior, John Noble, who proved to be particularly open to the lobbying efforts of Grinnell and other sportsmen, is now revealed not only to have been an associate member of the Boone and Crockett Club, but to have expressed that it was Harrison's love for sport that "explain[s] his success as a lawyer and a man" (p. 168). Similarly, geologist and Yellowstone advocate Arnold Hague is now shown to have "applauded the 'healthy manly sport' of hunting." For a book dedicated to arguing that these patrician hunters represented a subculture of their own, these emendations are highly beneficial.

And they are suggestive of the place that American sportsmen might hold in a broader cultural history of the late nineteenth century. While he has identified a group that can be defined by their social class and their recreational pursuits, Reiger has done very little to connect them to the broader social concerns of their class. Although recognizing that one of the more prominent members of the Boone and Crockett Club, Madison Grant, is best known for his eugenicist treatise on the dangers of further immigration from southern and eastern Europe (p. 285, n. 53), Reiger's description of this subculture is disconnected from the other concerns—about immigration, race competition, and urban poverty and corruption—that cultural elites shared at the end of the century. And this gets to the heart of his subject: Reiger portrays hunting as something that has the same meaning over time and place, and there is little recognition that it might have taken on all the greater importance because of the cultural anxieties of elites, including sportsmen. As Gail Bederman has noted, it is in these years that Theodore Roosevelt exalted the "strenuous life" and psychologists like G. Stanley Hall argued that even "civilized" men would benefit from getting in touch with their more primitive selves. But one can always ask for more. In this newly expanded form, *American Sportsmen* provides a better understanding of a male elite subculture than it ever did before, and it deserves to be read not only for its contribution to environmental history, but to cultural history as well.

Lawrence M. Lipin
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Riches for All: The California Gold Rush and the World. Edited by Ken Owens (Lincoln: University of Nebraska Press, 2002).

The 150th anniversary of the California Gold Rush has resulted in several excellent collections of essays, the most notable a four-volume series edited by Richard Orsi and published by the University of California Press, as well as in special issues of *California History*. That series remains the most comprehensive overview of this pivotal chapter in the history of the American West. As is the case with most collections, the fourteen essays in *Riches for All* vary in originality and usefulness, and there is no single unifying theme that weaves them together. Nevertheless, taken as a whole they are fresh, thoughtful, and perceptive.

The book opens with Owens's introduction, which summarizes the major events of the Gold Rush and assesses the most important scholarship on the subject. Owens also contributes two other solid essays, one on the Mormon impact on the Gold Rush and another that examines the history of Sacramento. He concludes that if no Mormon Battalion veterans, then no sawmill at Coloma, and thus no gold discovery there in January 1848 (p. 37). As for Sacramento, Owens points out that the city's many liabilities in the nineteenth century—heat, floods, and susceptibility to disease, to name but a few—meant that those who profited from the city's growth generally fled to more comfortable and healthier cities once they got a chance. That migration, in turn, produced a middle-class community lacking the wealthy benefactors and culture of San Francisco, but Sacramento remained true to the Gold Rush ideal of providing great economic opportunity to the mass of its citizens.

One theme uniting many of the essays is that the Gold Rush was a worldwide phenomenon. Malcolm Rohrbaugh points out that in the late 1840s and 1850s, Australia was as close to California as was the East Coast, at least by ship around Cape Horn, and Latin American countries much closer. Moreover, the Gold Rush cut across class lines, luring agricultural peasants from China and lawyers from Paris. The Gold Rush thus not only challenged class relations found in the eastern United States, it also made California the most cosmopolitan place in the world (p. 67). Jeremy Mouat argues that the California Gold Rush can best be seen as part of a half century of gold rushes in the English-speaking world that started with California and ended with the Klondike Gold Rush in 1898. The Fraser River rush to Canada in 1857, and the rushes to Australia and New Zealand during the same decade, all built on the California experience. They spread both the institutions that regulated mining and the technology of mining. Charlene Porsild looks at the last great gold rush to the Klondike and sees notable differences that distinguish it from earlier rushes. Even though there were many similarities, such as ethnic conflicts, family life and urbanization made the Klondike experience notably different from the previous rushes.

A second group of essays focuses on what might be termed the Gold Rush and "the others." Brian Roberts observes that for many miners the impact of the Gold Rush began long before they reached California. Those who came by sea learned about Latin America in the burgeoning towns of Chagres and Panama on either side of the Isthmus, and also in coastal cities such as Rio de Janeiro and Valparaiso. There, would-be miners first formed their views of Latin Americans as lazy, intemperate, and sexually charged exemplars of raw passion. And continuously repeated reversals of Victorian morality . . . seemed to place moral purity in the service of racism and pleasure enhancement (p. 86). Michael Gonzalez addresses the question of why Anglo-Americans developed such deep fears of Mexican Americans and concludes that Manifest Destiny was only one reason that Mexican culture became despised. On the other hand, there was also cultural persistence, as Sylvia Sun Minnick demonstrates in her essay on the Chinese in California. The devotion of Chinese miners to family, village, and community meant that they were never really far from home (p. 156). Minnick looks at Chinese associations and organizations that provided shelter, guidance, and welfare to their members. Similarly, Shirley Moore points out that black miners in California, while never more than one percent of the state's population, organized to fight against limitations on their rights—such as not being able to testify in court, segregation in the public schools, exclusion from the polls, and Jim Crow public conveyances.

Elizabeth Jameson and Susan Johnson look at the implications of a predominately male society. Jameson raises the important question of why such an anomalous society became so celebrated. Why were the values of male autonomy and independence exalted over those of family? Why did the masculine celebration of freedom transcend conventional moral responsibilities in the minds of the nation's mythmakers, even though the society it produced was inconsistent with the civilized values of the East? Johnson looks at what happened to Mexican, Latin American, and Chinese women as the number of white middle-class women increased in the southern mines of the gold country. As those women brought respectability to the mining camps, they attempted to eradicate the fandango and all traces of what they took to be the immorality of the Gold Rush. Johnson's essay is a skillfully blended treatment of race, class, and culture. Moral reform did not include integrating outcast women into the new society any more than it included integrating different cultures.

Finally, several essays provide insightful overviews of familiar topics. Albert Hurtado discusses the impact of the Gold Rush on Native Americans. He makes the wise observation that the long delay in establishing a government for California encouraged both the exploitation of Indians as a labor force and, in all too many cases, their outright extermination. Thus the reservation system established in the middle and late 1850s was too little, too late. Martin Ridge assesses disorder, crime, and punishment in gold-rush California, noting that, contrary to myth, California was not a lawless place, nor were violence and

disorder as common as some historians have assumed. He makes the astute point that much of the greatest violence, including lynching, took place *after* the formal legal system was established in the early 1850s—as competition for a declining supply of placer gold increased. Clark Spence, in an essay on the technology of mining in California from the 1880s to World War I, demonstrates that, by devising dredges that applied mass-production technology to surface mining, California contributed as much to international mining as it had to hydraulic mining half a century earlier. The evolution of mining technology continued in the twentieth century, so the technological legacy of the Gold Rush is much larger than most historians recognize.

Some readers will be disappointed that there are no essays on such important topics as the impact of mining on the environment, or on the early economy and agriculture of California. Nevertheless, used in conjunction with the Orsi volumes cited above, these are essays well worth reading. They are as enjoyable to read as they are instructive.

Donald J. Pisani
University of Oklahoma

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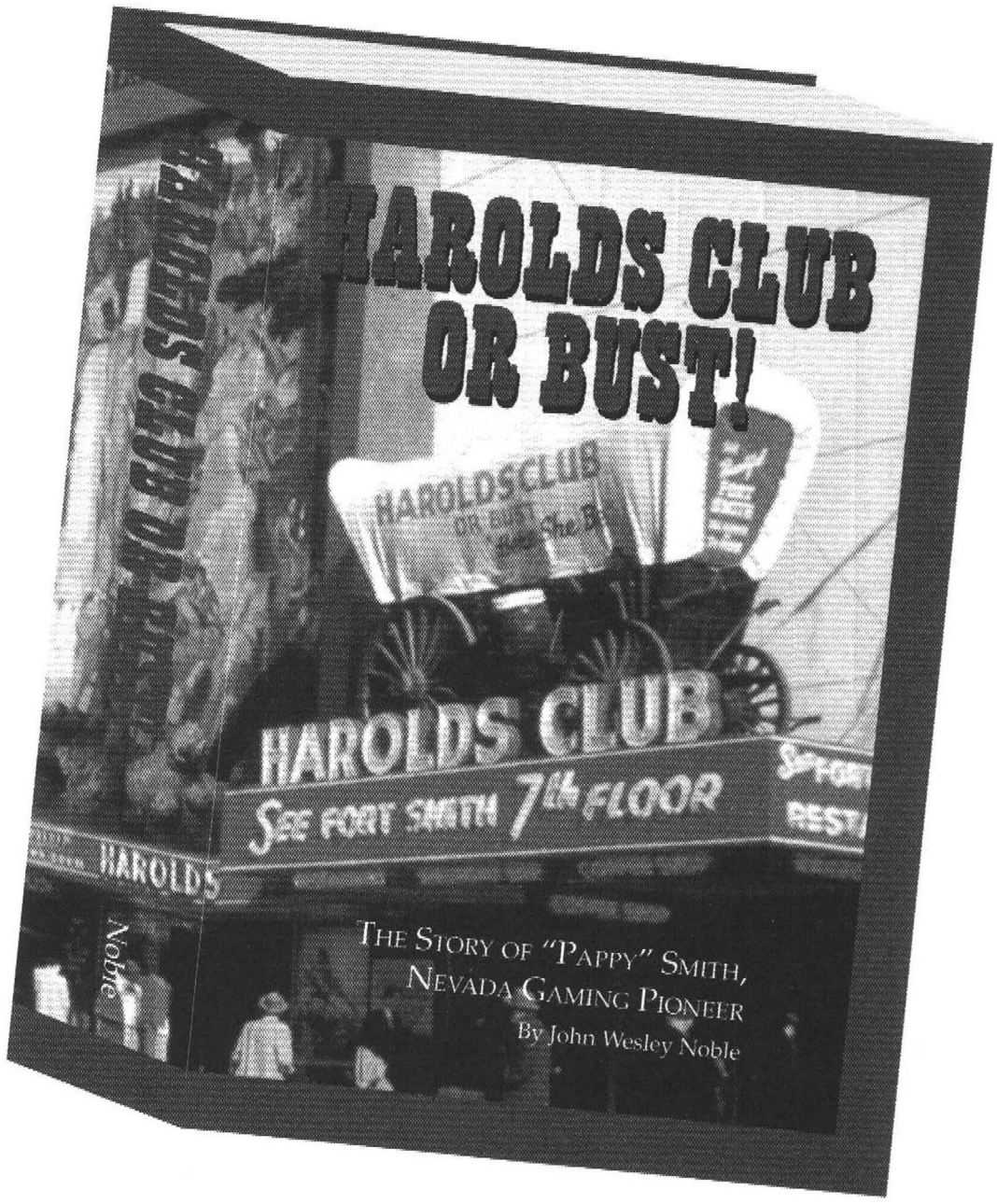

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Phone: Home _____ Business _____

New Membership _____ Renewal _____ Date_____

Mail this form and your check to: **Nevada Historical Society**
1650 N. Virginia St.
Reno, NV 89503

Host Museum Selection and Payment

_____ My check is enclosed for membership in the Nevada Division of Museums and History and one of the following host museums.

Please check one host museum, make checks payable to the selected host museum, and mail payment to the host museumís listed address—host museums receive membership dues directly. Members will receive a membership card in the mail from the designated host museum.
Host Museums (pick one):

____ **Nevada Historical Society**
1650 North Virginia Street
Reno NV 85903

____ **Nevada State Museum**
600 North Carson Street
Carson City, NV 89701

____ **Nevada State Railroad Museum**
2180 South Carson Street
Carson City, NV 89701
(Please contact this museum directly for membership, 775-687-6953.)

____ **East Ely Railroad Depot**
1100 Avenue A
Ely, NV 89301

____ **Lost City Museum**
721 South Highway 169
Overton, NV 89040

____ **Nevada State Museum and Historical Society**
700 Twin Lakes Drive
Las Vegas, NV 89107

____ **Nevada State Railroad Museum, Boulder City**
600 Yucca Street, P.O. Box 62423
Boulder City, NV 89006-2423
(under development)

CALL FOR PAPERS

Biennial Conference on Nevada History
A Centennial Jubilee Event

"Out of the Past; Into the Future"

Nevada Historical Society
Reno, Nevada
May 25-26, 2004

All authors working on scholarly subjects related to the history of Nevada, the Great Basin and the West are invited to send a two-paragraph precise of your suggested paper to:

Peter Bandurraga, Director
Nevada Historical Society
1650 N. Virginia Street
Reno, NV 89503
775/688.1190
775/688-2917 fax
plbandur@clan.lib.nv.us

Submission deadline is February 28, 2004. As usual, all authors accepted for the conference program will be invited to submit their papers for publication in the *Nevada Historical Society Quarterly.*

NEVADA DEPARTMENT OF CULTURAL AFFAIRS
NEVADA DIVISION OF MUSEUMS AND HISTORY

THE NEVADA HISTORICAL SOCIETY

Presents a Centennial Jubilee Event

THE ANNUAL MID-WINTER GALA

Please join us

Friday, January 16, 2004 at 5:30PM

ONE HUNDRED YEARS OF HISTORY IN NEVADA: THE STORY OF THE NEVADA HISTORICAL SOCIETY

The 2004 Centennial Jubilee of the Nevada Historical Society:

May 31, 2004 marks the 100th anniversary of the founding of the Nevada Historical Society on the campus of the University of Nevada in Reno. To celebrate the remarkable occasion the Historical Society will host a year-long series of events. The following are some of the highlights. Mark you calendars and please join us in celebrating our Centennial Jubilee:

- January 16 — Annual Mid-Winter Gala: Opening of exhibition, *One Hundred Years of History in Nevada: The Story of the Nevada Historical Society*
- February 11 — "The History of the Nevada Historical Society," Peter Bandurraga, Director
- March 2 — Workshop: "Doing Your Family Genealogy," Michael Maher, Librarian, (9 to 11 a.m.)
- March 30 — Workshop: "Preserving Your Family's Treasures," Lee Brumbaugh, Shery Hayes-Zorn, Eric Moody, Curators, (9 to 11 a.m.)
- April (TBA) — "Collecting Antiques," Howard Rosenberg
- May 23 — Centennial Garden Party Extravaganza
- May 25-26 — Biennial Conference on Nevada History: "Out of the Past, Into the Future"
- June (TBA) — "Collecting Nevada Art," Jim McCormick
- July 15 — Opening Exhibition Reception: *Jeanne Elizabeth Wier and the Nevada Historical Society*
- July 17 — Family Fun Day, a free event to include children's activities, music by the Rubber Chicken String Band, book signing by local authors, ice cream and lemonade
- August (TBA) — *History Detectives* program series for kids
- Sept 18 — Centennial Jubilee Extravaganza Street Fair (in collaboration with the Washoe County Library System, also celebrating their centennial in 2004)
- Oct 5 — Workshop:"Doing Your Family Genealogy," Michael Maher, Librarian, (9 to 11 a.m.)
- Oct 26 — Workshop: "Preserving Your Family Treasures," Lee Brumbaugh, Shery Hayes-Zorn, Eric Moody, Curators, (9 to 11 a.m.)
- October 29 — Dinner of the Century
- Nov 24 — *Deck the Halls Wreath Extravaganza* Silent Auction Opens
- December 11 — *History for the Holidays*—a free event to include children's story hour, book signing by local authors, end of *Deck the Halls Wreath Extravaganza* silent auction, homemade cookies and punch

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The Nevada Historical Society is located at 1650 N. Virginia St., Reno, NV 89503.
For more information, please call 755 688-1190.
Galleries are open Monday – Saturday, 10:00 AM to 5:00 PM.
Research Library open Tuesday – Saturday, NOON to 4:00 PM.
Gallery admission: $3.00 for adults, $2.00 for seniors, and free for children under 18.

Nevada Historical Society Quarterly

Founded in 1904, the Nevada Historical Society seeks to advance the study of the heritage of Nevada. The Society publishes scholarly studies, indexes, guidebooks, bibliographies, and the *Nevada Historical Society Quarterly;* it collects manuscripts, rare books, artifacts, historical photographs and maps, and makes its collections available for research; it maintains a museum at its Reno facility; and it is engaged in the development and publication of educational materials for use in the public schools.