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The John Muir Center for Environmental Studies

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The expansive 760,000-acre Yosemite National Park consists of meadows, forests, and mountains that presently awe over three million visitors annually. Yosemite Valley became the second national park in 1890 after an intense nationwide conflict that most tourists neglect to acknowledge when scaling the glacial-smoothened sides of Half Dome or navigating woodlands of sugar pines and giant sequoias. John Muir, a foremost figure in the early conservation movement, spearheaded the proposal and eventually succeeded against the powerful tourism and timber industries. Muir felt impassioned to save Yosemite from degradation by humans because he shared an affinity with the “blessed dell, woods, gardens, streams, birds, squirrels, lizards and a thousand other” inhabitants in the valley. Although Hetch Hetchy is recognized by historians as Muir’s most famous battle, the fight for Yosemite was the first significant dilemma he encountered.

Muir’s experiences as a sheepherder in the Sierra in the summer of 1869 formed the foundation of his cause for preserving Yosemite in the late 1880s. As he resided in the valley for an extended period from 1868 to 1874 and visited numerous times over the next decades, he witnessed the evolution of capitalistic exploitation of the valley: the maniacal tourism industry that seemed to replicate exponentially over the valley floor, the harvesting of sequoias, pines, and redwoods that survived everything except man over hundreds of years, and the cattle and sheep that consumed every blade and bush in their destructive path. It was the latter of these evils that pushed Muir to preserve Yosemite by transferring management of this special place from state to federal guardianship. This study explores Muir’s thinking on Yosemite by assessing the articles that he published as well as his unpublished private journals and correspondence.

Muir’s trip to Yosemite with Robert Underwood Johnson in June 1888 instigated his battle to protect Yosemite, which culminated in success with passage of the Vandever Bill in 1890 that created Yosemite National Park. The valley was previously protected under the Yosemite Grant from 1864 to 1890 as a reserve. A Board of Commissioners managed the small state park that was only fifteen miles in length and one

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Muir Event on University of the Pacific Campus

California's new quarter, featuring naturalist John Muir, Yosemite's Half Dome and a soaring condor is now being minted as part of a 10-year, 50-state quarters program conducted by the U.S. Mint. On February 9, 2005, University of the Pacific's John Muir Center, in conjunction with the Holt-Atherton Department of Special Collections held a Muir Coin celebration with coin designer Garrett Burke and his family on campus. The festivities began with a most interesting presentation by the Burkes as they described how they came up with the quarter design. The presentation was followed by a reception complete with cakes decorated to look like the new quarter. Entertainment was provided by a 10-member Dixieland-style band directed by John Muir's grandson, Ross Hanna.

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CLAN CURRIE SOCIETY CELEBRATES "THE LIFE AND LEGACY OF JOHN MUIR" ON ELLIS ISLAND

Clan Currie's Annual Tartan Day Celebration this year focused on the Scots-born "father of America's national parks". The Society has produced a new exhibit in honor of John Muir. In partnership with the National Park Service, Clan Currie, along with Scottish and American dignitaries had opening ceremonies on April 1, 2005 for the new Tartan Day exhibit, the first to be produced completely by the Clan Currie Society. Hilary Buchanan Boller, a historian with the American Enterprise Institute in Washington, served as principal researcher and author. The Clan Currie Society also formed an advisory panel including participation from the John Muir National Historic Site in Martinez, CA, the John Muir Birthplace Trust in Dunbar, Scotland, the Sierra Club in San Francisco, CA and the John Muir Trust in Edinburgh, Scotland. The exhibit is free to all visitors of the Ellis Island Immigration Museum and will run into May.

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JOHN MUIR'S BIRTHDAY CELEBRATION
ALSO CELEBRATES EARTH DAY

After a three-year hiatus, Earth Day is returning to Contra Costa County with an added attraction: the celebration of the 167th birthday anniversary of John Muir. The free event will be staged by the John Muir Association in Partnership with John Muir National Historic Site from 11 a.m. to 5 p.m. on Saturday, April 23 at Muir's picturesque estate, a unit of the National Park Service (4202 Alhambra Avenue just off Highway 4) in Martinez, CA. The Muir home will be open to visitors. More than 35 groups dedicated to conservation will participate in the festivities under the theme "Celebrate the man who celebrated the earth."

"Were it not for John Muir's passion for the natural wonders of his adopted country, it is likely many of them would not be here for us to enjoy," said Mary O'Hara-Zimmerman, chair of the celebration. "Generations owe a debt of gratitude to John Muir and others like him whenever they visit Yosemite, hike through the Sierra Nevada, or visit a national park. He's inspired every-day kind of people to take on monumental efforts for the sake of preservation, conservation and education."

Earth Day visitors will be treated to music, a barbecue and other food while learning how to care for the earth from a variety of exhibits and demonstrations. Topics include conservation efforts, solar energy, alternative forms of transportation, recycling, and composting. Those attending the celebration will also have an opportunity to obtain the new California quarter depicting a likeness of Muir. Garrett Burke, who designed the coin, will be present to discuss his concept for the design. "It's hard to say if the quarter will translate into more visits, but it's certainly translating into a higher profile and interest in Muir," said David Blackburn, chief of interpretation at the Muir site. "It still surprises me when people come in here and say, 'Who is this John Muir?' We're all hoping it serves as a catalyst for people as they put that quarter into a parking meter or a pinball machine or laundry machine."

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MOUNTAIN DAYS

Mountain Days, the outdoor musical epic about the lives and loves of the great naturalist, John Muir, is going to play again this summer: Aug 3-7, 2005 at the Muir Amphitheatre in Martinez. There are new windscreens, fencing, box office, concessions building, picnic tables and a great show. At the amphitheatre, the Willow Theatre is also presenting an Independence Day weekend celebration featuring the companion piece to Muir, Sacagawea - symphonic suite and a production of The Sound of Music. It all starts July 1st and runs thru Aug 7. For more information, call (925) 798-1300 or visit www.willowstheatre.org.
One “Minute Mystery:” Investigating John Muir’s Temperature Notation

By Michael Wurtz
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Archivists, like detectives, often find themselves unexpectedly on the trail of a mystery. Recently, a researcher called to ask about an unusual temperature-notation symbol in an essay called “Alaska,” from John Muir’s Nature Writings (published by The Library of America, 1997). In this essay, Muir describes the climate of Alaska generally and the temperature specifically. He writes,

“July was the brightest month of the summer with fourteen days of sunshine, six of them in uninterrupted succession, with a temperature of about 60° Fahl; maximum at 12 M., 70°.

“The average 7 A.M. temperature for June was 54° 33'; 12 M., 57° 13'. The average 7 A.M. temperature for July was 55°93'; 12 M., 61° 75'. The average 7 A.M. temperature for August was 54° 20'; 12 M., 61° 83'. The average 7 A.M. temperature for September was 52° 23' 12 M., 56° 21'.

“The highest temperature observed here during the summer was 76°.

The question was this: what unit of measurement was John Muir representing with the small tick mark he used after certain numbers? It looks much like a minute symbol, but temperature isn’t usually recorded in minutes.

So, I set off in search of some answers.

Rounding Up the Usual Suspects

The obvious starting place for my search was to look at the original publication to see whether the book publisher might have inaccurately transcribed the passage. I checked John Muir: A Reading Bibliography by William and Maymie Kimes. I found that the passage in question first appeared in print in San Francisco’s Daily Evening Bulletin on November 8, 1879, in an article written from Fort Wrangel entitled “Alaska Climate. Some Popular Errors Corrected – A Good Country to Live In. An Alaska Summer Day – Glorious Sunsets. Bright and Cloudy Weather – Rainfall – Temperature – Alaska Winters.”

The original article clearly showed those same tick marks, ruling out the possibility that they came from the book publisher. So, might the newspaper have introduced this notation? Did newspapers from that time typically record temperature to fractions of a degree? A quick check of the Stockton newspapers from that same era, and my recollections of other newspapers contemporary to Muir’s time, revealed that temperature information was generally not included – let alone fractions thereof. Therefore, we can probably conclude that the paper published the notation as Muir wrote it.

So, I went to Muir’s notes and journals to seek clues as to how he measured or recorded temperature information on that trip, but I found no information about these observations. In fact, I found it quite odd that there appear to be no references to temperature observations in his journals and notebooks from Alaska. But hold that thought.

Confronted with these dead ends, I decided it was time for some educated guesswork.

Hunches and Speculations

It never hurts to take a step back and question your basic assumptions at times like these. Might Muir have been indicating something other than fractions of temperature with his tick marks – maybe a different type of climatic observation, such as humidity? I gave some thought to this possibility, but soon realized that humidity “averages” would be unlikely to vary as much as the numbers Muir recorded (which range from 13° to 93°) in the coastal areas where Muir spent most of his time.

Back to temperature, then. Reminded that the temperature values were averages, I wondered whether the averaging process might explain the fractional portions of the numbers. Might Muir have recorded daily temperatures as whole numbers, but expressed the monthly averages with fractional remainders? I discussed this idea with Ron Wurtz, a physicist at Lawrence Livermore National Laboratory (who also happens to be my brother). After doing some calculations, he pointed out that Muir’s average temperature for September, 52° 23', couldn’t be the result of averaging whole numbers: “If you sum only whole numbers and divide by 30, you will never get a fractional remainder of 21. And, for the 31-day months, there is no way to get 75 or 20 [the fractional portion of the averages for July and August, respectively] from whole numbers. So, his thermometer must have been precise to fractions of a degree.”

If the numbers preceding the tick marks were fractions, what fractional portion of a degree did they represent? Could they be read as minutes – that is, smaller increments of 1/60th of a degree – much as degrees of longitude and latitude are divided by 60 minutes? Well, no, since some of the recorded numbers are higher than 60. Therefore, these numbers cannot be considered minutes in the traditional sense, but we will continue to call them minutes for lack of a better term.

The next obvious question is: did Muir’s “minutes” represent increments of 1/100th of a degree? Hundredths of a degree would be a logical size for smaller increments, and the fact that the highest recorded minute measurement is 93° fits with this theory. Of course, if this interpretation is correct, it seems a little odd that Muir wouldn’t have used decimal notation instead (for example, writing 55.93° instead of 55° 93'), as it seems simpler and more practical. Might he have actually used decimal notation, but a typesetter at the newspaper opted for tick marks instead? Or might he have been predisposed to think in terms of minutes instead of decimals by the measurement system he was using?

How did he measure temperature, anyway? Time for more research…

Real-World Clues

Having decided that the “1/100th of a degree” explanation was the most likely one for Muir’s minutes, I needed to consider whether a real-world scenario could support this explanation. What sort of instrument could Muir have carried into the wilds of Alaska to measure such accurate temperatures? My brother Ron suggested that “if the minute marks were 1 mm apart, then for 100 degrees, Muir would have needed a mercury thermometer 10 meters long. It’s possible his thermometer was one of those coiled ones, but it would have had to be about 4 inches in
diameter with 30 turns.” However, I realized that Muir probably wouldn’t have used a glass thermometer, since so much of his work was in rugged terrain where such an instrument would need special handling.

Needing further clues, I investigated Muir’s writings in greater depth and came across the following passage in *Story of My Boyhood*:

“Of my inventions was a large thermometer made of an iron rod, about three feet long and five eighths of an inch in diameter, that had formed part of a wagon-box. The expansion and contraction of this rod was multiplied by a series of levers made of strips of hoop iron. The pressure of the rod against the levers was kept constant by a small counterweight, so that the slightest change in the length of the rod was instantly shown on a dial about three feet wide multiplied about thirty-two thousand times.”

This combined thermometer, hygrometer, barometer, and pyrometer appears in *The Story Of My Boyhood And Youth*. This too seems a bit too delicate to carry up a glacier, but it shows Muir’s ability to make instruments that are quite precise and perhaps puzzling to anyone but Muir.

With a device that big, he certainly could have measured 100ths of a degree, since his thermometer would indicate a motion of eight inches per degree of Fahrenheit. Of course, a device so large would probably need a pack of dogs to haul it around, so he probably had a much smaller version, but one that was not too small or inaccurate to record 1/100ths of a degree.

**Evidence and Explanations**

Does this explanation - a lever-based iron thermometer measuring hundredths of degrees in minutes - solve our mystery? Well, the compass-like layout of such a thermometer would certainly encourage Muir to think of divisions of degrees as being minutes, since a compass measures longitude and latitude in degrees, minutes, and seconds. My investigations into temperature measurement never turned up any other indications of fractional measurement using anything but a decimal point and tenths or hundredths of a degree. But perhaps, as the researcher who posed the question to me suggested, these unusual notations simply confirm Muir’s independent nature.

I had all but given up trying to understand what exactly this notation was until I found in a notebook where Muir had designated “two and half miles” with “2°5 miles.” Perhaps due to his European ancestry, he recorded decimals with a degree-like sign — and the newspaper decided to add the “minutes” for lack of understanding Muir’s meaning.

**Serendipity Reveals an Answer**

Like most written history, much of the mystery was solved long after I completed this article. In a typical serendipitous moment, I found a reference to “Climate of South Eastern Alaska” in *The Guide and Index to the Microform Edition of the John Muir Papers*. Sure enough, I found Muir’s draft article to the *Daily Evening Bulletin* (reel 38 frame 06439 or folder 36). Muir had not included “minute” marks in his draft. But he may have confused the editor with his first couple of temperature notation written, “54° .33” and “55° .93” using the degree symbol above the decimal point. Fortunately, there was a recent note included with the hardcopy suggesting that this draft came from one of his Alaska notebooks.

I looked up the notebook (“#24” microfilm reel 25 frame 01773 or folder 9) and there were six pages of meteorological observations from May 17 to Oct 4, 1879! At the end of each month is an average for the morning reading and midday reading — no degree or minute marks, just whole numbers for each recording.

Muir did not use minute marks. The newspaper HAD to have put the minute mark in. As the reading service researcher suggested when I told him of the latest find, “How many people must have read this particular essay, both at the time of its original publication and then down through the years? Didn’t anyone else wonder at the odd notation? I mean, what we are dealing with here is a hundred-year-old typo.”

There is still the questionable math. After looking at the original notes we found that Muir actually recorded only 30 days in August, therefore the recorded averages also work.

Since the researcher was on a schedule and I had only started my search, he and I agreed that for his reading he could say, “minutes.” Humbly, almost four months later I realize that I have ended up perpetuating the “minute” mystery, before I solved it through further research in the John Muir Papers.

The confusion of the tick marks on Muir’s temperature readings probably started here, when he placed both his degree and decimal mark in the same space. This is his draft work that he must have sent to the newspaper for publication.
Muir’s life in the decade prior to the Yosemite conflict countermanded from mountainheer to childrearing. Muir’s daily routine in the early 1880s was characterized by domesticity rather than rambling botanical excursions. He married in 1880 and settled into family life with his wife, Louie Wanda Strentzel. By 1885 he was fathering two young daughters, Annie Wanda and Helen Muir, on the rolling Martinez, California ranch. Muir successfully managed the family’s profitable fruit crops despite his outward appearance as an unsophisticated farmer with his long, unkempt beard and socially awkward mannerisms. Although Muir’s health regressed during this time, possibly due to his absence from wild places, settling into civilized society instead of granite boulders and pine groves exposed Muir to new political ideas. Muir gained political awareness as he read books in the sizeable Strentzel family library and controversial articles published in Bay Area newspapers. Muir examined political theories including nonsocialist alternatives to the free market and the ideas of political reformers such as Henry George and John Ruskin, but he rarely picked up ideas from these political models and individuals. As his political consciousness emerged, he realized that nature could not be adequately protected by the current economic system as private interests and profits would ultimately prevail in most cases, especially since industries such as the railroad tended to “buy” legislation in their favor. Devastation was occurring in many of his beloved mountains and forests, including Mount Shasta, Mount Rainier, and the Yosemite Valley, for which protective legislation was stalled or ignored, as in the case of Yosemite.

Yosemite received some protection from private exploitation under the Yosemite Grant of 1864, but the Reserve was small and mismanaged. The Yosemite Grant was enacted for the same reasons Muir wanted federal protection of Yosemite almost thirty years later: preservation for protection of scenic values and the pleasure of the people as a whole. Private exploitation in the valley was threatening its trees, taking away scenic landscape that was supposed to be enjoyed by everyone. Passed in June of 1864, the Grant designated the valley as a natural preserve estimated to be fifteen miles in length and one mile in width. The Grant consisted of two parts, protecting the valley as well as the Mariposa Big Tree Grove “upon the express conditions that the premises shall be held for public use... and shall be inalienable for all time.” Rules and regulations were established for the government of the Yosemite Reserve, which was controlled by a Board of Commissioners that was appointed by the state government. Landscape architect Frederick Olmsted served as the functional head of the board in its early years, drawing up a comprehensive management plan for California’s first state park. Only the Commission could approve residence or privilege to transact business in the valley, but it experienced difficulty in eradicating already existing hotels, cabins, and private claims on the valley floor. The Commission controlled the valley for the next few decades, albeit in very poor manner, as evident by the degradation inside and outside the Yosemite Reserve that was apparent by the late 1880s.

Muir entertained the idea of enacting legislation to protect natural wonders in the late 1880s as he became aware of the ravaging effects of tourism, logging, and overgrazing in the West, although he managed a voyage to Alaska in 1881 before the birth of his first daughter, and in 1885 he took a brief excursion to Yellowstone. In 1888, after seven years of ranching and raising children, Muir decided to rejuvenate his soul on a trip to the Pacific Northwest with his friend and Alaska companion, Hall Young. Muir stopped at Mount Shasta on the way, a sizeable foe that attempted to take his life in 1875, and lamented at the clear-cutting of old growth forests by the industrial world he had abandoned some two decades earlier. Muir pondered protection of these threatened wilderness areas upon his return to Martinez and so decided to retrieve his pen and retire to his den to write on the environmental devastation occurring in the West.

As Muir dabbled in the ink bottle to gain public awareness of the problem, he found a worthy ally—or rather he found Muir. Robert Underwood Johnson, editor of the Century Magazine from 1873 to 1909, became interested in Muir in the 1880s for his literary genius and his popularity among American readers. A bespectacled man with a short salt-and-pepper beard below a slightly curved nose, Johnson feared that Muir had “abandoned literature altogether,” so he proceeded to meet with the solitary Scot in 1889 upon a rare visit to California in an effort to coax Muir to hasten his pen. According to historian Stephen Fox, their meeting had underlying motives as Johnson desired Muir to resume his writing career, and Muir wanted to enlist the support of the Century Magazine on behalf of California’s threatened wilderness. Johnson agreed to go camping with Muir in Yosemite, arriving at its forests and meadows on June 3, 1889.

For the second time, Yosemite provided the backdrop to dramatic change in Muir’s life. Muir and the younger Johnson employed pack mules and a cook for the trip, and thus the trip commenced from the hotels and roads of the valley floor and proceeded to the less-traveled high country in the north. Both observed the damage wrought by illegal timber cutting, ravenous domesticated sheep, and overcrowding on the bottom of the valley. Muir was still able to experience “real wilderness” in the isolated high country and transcendental thoughts through the interrelationships of stones, trees, and animals to one another and to the universal spirit. It was here in Yosemite where Muir could “wander from garden to garden among these bright flowers and crystals as if you were walking amongst stars.” As the small party trekked northward past the basin of Yosemite Creek, Muir described the scenery as “paved with bright domes and lakes that shine like larger crystals.” The awe-inspiring surroundings convinced Johnson to join Muir in better protection for the Tuolumne River watershed and the entire valley. It was this particular trip that pushed Muir to save Yosemite instead of other forests and mountains that he had visited in the past, although degradation by human hands and livestock was occurring throughout the West.

Johnson and Muir initially considered a campaign for an enlargement of the 1864 Grant, but Muir ultimately sought federal protection of Yosemite that only a Congressional bill could accomplish. Efforts to enlarge the original Grant began as early as March 1881, when the Commission unanimously adopted a resolution asking the federal government for an extension of the two parts of the Grant. However, no decisive action was taken to move the proposal forward, and so the issue remained ignored until Muir’s public campaign for federal protection of the valley in the late 1880s. In March of 1890, Muir wrote to Johnson, “As to the extension of the Grant, the
more we can get into it the better. It should at least comprehend all the basins of the streams that pour into the valley.” However, Muir’s proposal appears to have changed. Six weeks later, he hastened to convey to Johnson the problem of extending the Grant. Muir wrote that an extension of the Grant spelled inevitable disaster if Yosemite was left to the existing Commission. Powerful railroad, stage, and hotel companies wanted the Grant to “be extended under promise of reformation of the management, and let the present management be their own reformers.” Muir ardently rejected the premise that the Commission might reverse its own history of mismanagement and he concluded that the prolonged existence of the Commission that controlled the Reserve would ultimately perpetuate devastation in Yosemite.

Instead of an addition to the Grant, Muir eyed the recent Vandever Bill proposed by Congressman William Vandever of Los Angeles in March, 1890. The Vandever bill projected a slightly enlarged Yosemite Reserve of 288 square miles that included the main valley and nearby terrain. Muir still wanted all of Yosemite’s “fountains” and mountains included for protection since the granite hardpan provided no agricultural use, thus rendering Yosemite “not valuable for any other use than the use of beauty.”

It is implied in Muir’s letter to Johnson of April 20, 1890 that the bill stipulated federal protection of Yosemite because he pleaded Johnson to “Stand up for the Vandever bill, and on no account let the [Grant] extension be under state control.”

Surely federal protection pleased Muir, but he desired to enlarge the present Yosemite Reserve to include the majestic Mariposa sequoia grove and flower-filled Tuolumne meadows. Muir published articles in the Century Magazine and the San Francisco Daily Evening Bulletin to foster public support for the bill. Muir’s adversary, John P. Irish, the editor of an Oakland newspaper and secretary and treasurer of the Yosemite Board of Commissioners, denounced the bill along with his friends of reform. “You see the trick; to try to make votes by pretending to defend California’s sacred honor and reputation, which privately he is besmirching” said Johnson about Irish in correspondence with Muir. Both sides engaged in major publishing campaigns to recruit support for their cause.

In this campaign, Muir focused on all three of his major motivations for saving the valley for future generations: protection from tourism, logging, and overgrazing. Tourism was largely nonexistent in Yosemite until after 1857, although a few non-Indian people had described the valley since 1833 when Joseph R. Walker’s party of mountain men gazed down from somewhere along the north rim. The first documented description of the valley floor dates to 1851, when the infamous Mariposa Battalion under James D. Savage invaded the home of the Yosemite Miwoks under the pretext of depredations against whites. For the next three years, the Miwok under Chief Tenaya fought to retain their beloved “Ah-wah-nee” (place of a gaping mouth), but were hunted down and killed or driven out creating opportunities for whites to establish themselves in the valley. In 1855, Galen Clark, James Mason Hutchings, and artist Thomas Ayres organized what is considered to be the first tourist outing to the valley. Hutchings’ subsequent publications drew argonauts and visitors alike to Yosemite, and land was cleared for orchards and houses, the first house being built in 1856. Emblematic of the rapid change that transformed the valley from peaceful sanctuary to travel destination, that first house was quickly converted to a saloon for “that class of visitors who loved whiskey and gambling,” then into Black’s Hotel years later. The first hotel, Cedar Cottage, materialized in 1859, but vacancy was assured as visitors did not crowd Yosemite until the construction of the Union Pacific and Central Pacific railroads. Consequently, by the mid 1880s, thousands of visitors descended on the valley annually. The bottom of the valley was no longer the garden Muir envisaged, but Johnson reassured him in a March 1890 letter that “the Sierra flora is not yet beyond redemption, but much may be done by the movement you are making.”

Yosemite was in dire need of protection from logging activity as well. Muir recognized that logging led to soil erosion that in turn contributed to destructive floods. As forests in Maine, Michigan, and Wisconsin were quickly being felled by the axe, mills were rapidly multiplying “in the great timber belts of the West” where the “magnificent redwood belt of the coast” was fast disappearing. In Yosemite, evidence of illegal logging existed inside and outside the Reserve and thousands of additional acres were in jeopardy from man’s saws and axes. Muir had the difficult task of cogently conveying to Americans that the big trees of the valley were worth preserving simply because of their existence, not for their size or rarity. Americans at this time perceived the elimination of wilderness as a “necessary tragedy [for] civilization was the greater good,” so convincing the public was a formidable task that called for descriptive prose to incite conservationist sentiments in readers. Furthermore, “The love of nature among Californians [was] desperately moderate” and “consuming enthusiasm almost wholly unknown,” as Californians were “sleeping in apathy” explained a concerned Johnson. Asking Americans to reject their view of wilderness as a “loathsome obstacle to be conquered and destroyed” required a transformation of established attitudes.

Although Muir disdained tourism and logging, he felt that the ravages wrought by sheep on the valley were by far the most
Muir’s journals and papers suggest that destruction by domesticated sheep was the driving force in his fight for Yosemite. He was disgusted by the consequences of domesticated sheep in the Sierra as the livestock trampled and consumed all vegetation in sight, crushing lily and lupine meadows and eating everything in sight, even pines and firs when famished. Sheepherders themselves were equally destructive as they burned groves and meadows to “facilitate the movements of the flock” and perhaps increase and extend pastures. The fires of sheep men form more than 90 percent of all destructive fires that ravage the Sierra forests” wrote Muir in a post-Yosemite article, which possibly suggests that even more acreage was set ablaze during the Yosemite conflict. Every bush in their wake was stripped bare to the highest point their miserable mouths could reach. What maddened Muir was that these “hoofed locusts” devastated plants that Nature’s care had nourished and kept “safe by a thousand miracles.”

Perhaps the most devastating aspect of their foraging behavior is the method by which they extract their food from the earth. Indeed the eating behavior of wild sheep is similar if not the same, yet they foraged in smaller groups in contrast to the thousands of domestic sheep that flocked together in the Sierra during Muir’s day. Domestic sheep are “selective grazers,” preferring only the sweetest plant blades and leaves. Much like their mountain counterparts, tame sheep pull out entire plants that maximizes nutrient input, but leaves the ground devoid of important roots that anchor surface soil and prevent erosion. “The better the forage the more sheep eat,” and in Yosemite where the food was superior in quality and abundance, sheep likely devoured the countryside.

Muir witnessed the devastation caused by domestic sheep firsthand during his summer of discontent in 1869, when he worked under Pat Delaney herding sheep in the upper basin of the Tuolumne River and canyon with an experienced sheepherder named Billy. Muir may have looked down upon the sheep farming occupation from an early age, as sheepherders tended to be the more rural and poor of Scottish society and he had witnessed barren overgrazed hills prior to leaving Scotland in 1849. Muir may also have had preconceived notions of sheep farming because the sheep business suffered a depression as Scottish sheep could not compete with Australian and New Zealand wool and mutton imports, and thus graziers were reduced to squallid conditions as they could not pay the high rents.

In Yosemite, Muir learned firsthand that sheep were regularly herded “gradually higher through the successive forest belts” of the Sierra “as the snow melted, stopping a few weeks at the best places” for grazing sweet-pea vines, grasses and sedges. For months he trailed behind the massive flock, two-thousand strong, watching how “desperately does sheep business” degrades the environment. He also concluded from this experience that sheep were inferior in intelligence and grace to wild animals of any sort. In his memoir of the experience, My First Summer in the Sierra, chapter seven, entitled “A Strange Experience,” details an event where some “noble bears” infiltrated their camp and seized sheep for a moonlight meal. As Muir described the bears’ repeated visits to the corral, one may perceive that Muir is convinced of the intelligence of wild animals over domesticated ones. The bears make off with members of the flock “without being seen,” whereas the rest of the sheep trample and suffocate their own kind in panic. In chapter eight, “The Mono Trail,” Muir’s distaste for non-wild sheep grows more evident as he describes his efforts to herd the flock across a narrow stream one-inch in depth. They were so “unreasonably afraid of water” when their mountain counterparts thrived in Yosemite’s rainy and snowy environment, so “their dread of water,” particularly small streams in this context, was perversely odd if not downright irrational in Muir’s mind.

Muir’s adverse feelings toward tamed sheep are also evident in his rhetoric throughout My First Summer in the Sierra. As signified by his flowery descriptions and carefully selected diction, Muir observed sheep with pity for their unintelligence, physical inadequacy, and susceptibility to illness. He pitied the poor, inadequate nature of tame sheep in the first chapter of his book as he recalled the dust-choked flock sweating in the summer’s high heat as they “tried to stop in the shade of every tree they came to.” His diction stressed the helpless stupidity of the herd and their shortcoming as an engineered organism: “Poor, helpless, hungry sheep ... semi-manufactured, made less by God than man.” Domesticated sheep had been so thoroughly bred that the favorable traits of their mountain ancestors was no longer present. Muir also emphasized the flock’s constant fear from bears and wolves, which are predators of wild sheep as well, but these mountain sheep were more intellectually and physically apt at defending themselves. He told of their susceptibility to sickness throughout his memoir, an attribute he never designated to wild sheep. They seemed to be perpetually ill during the summer excursion, “coughing, groaning, looking wretched and pitiful” from nibbling azalea leaves or kalmia or alkali.

Muir’s articles in the San Francisco Daily Evening Bulletin and Scribner's Monthly also reinforce Muir’s serious aversion to domesticated sheep compared to their wild counterparts. Muir illustrated how the valley landscape was being “devoured by locusts” in his Bulletin article that detailed the specific damage caused by tame sheep as well as logging. In a different light, Muir’s article, “The Wild Sheep of the Sierra,” offers fresh perspective of the wild breed instead of the detriment of sheepherding described in the aforementioned publications. Muir held wild sheep in high esteem, praising them for their “keen sight and scent, immovable nerve, and strong limbs,” qualities that ranked them “highest among the animal mountainers of the Sierra.” The sheep herded through the Sierra annually were not silent respecters but boisterous denuders of nature. Muir acknowledged that the breeding wild sheep of long ago gave rise to present domestic varieties, but he ignored their ancestral relationship since their traits made their relationship unrecognizable in Muir’s mind. He even commented that domestic sheep seemed “outrageously foreign and out of place” in Yosemite’s nature gardens, “more so than bears among sheep.”

Muir admired the thick overcoat of wild sheep that still rivaled the best-known domestic breeds even though it was multi-tonal and rather coarse and spongy. His admiration of merino rams and Rocky Mountain wild sheep developed through decades of intently watching their habits. Muir only needed a summer’s worth of observation to formulate his negative conclusions about the domesticated kind.

It is pertinent to mention that Muir, at the time of the Yosemite conflict, had very divergent feelings between wild and domesticated animals that would not be reconciled until later in his life. A comparison between a sheep and a deer in My First Summer in the Sierra reveals his sentiments on the subject. “How graceful and perfect in every way” the wild deer appeared “as compared with the silly, dusty, touseld sheep!” With the notable exception of dogs, domestic animals lacked character, behaved unintelligently, and were far less agile than mountain creatures. Mountain animals daintily prodded through flowered
meadows and delicately weaved through pine and sequoia groves without crushing anything in their path. In an anthropomorphic way, wild animals appeared to possess deference for their natural environment. Muir appreciated all wild animals, never condemning carnivorous alligators or venomous rattlesnakes that were commonly regarded as dangerous and repulsive. 61 Although Muir's attitudes toward wild and tamed animals eventually converged to appreciation of both, he accepted sheep and cattle and pigs when in their corrals and pens, not in the lush meadows of Yosemite.

With sheep at the forefront of his mind, Muir used these major reasons to press Johnson and others for support with great alacrity. Amateur conservationists, California Senator George Hearst, and even the Southern Pacific Railroad moved behind the bill as all did not have an economic stake in the region and possibly felt that supporting Yosemite would increase public relations. The opposition consisted of private interests and some powerful figures and companies, but they all opposed the Vandever bill without good reason. "The combat thickens" exhales Johnson in a September 20th, 1890 letter to Muir, "John P. Irish being on the war-path." 59 Irish did not want the dissolution of his job as a Yosemite commissioner that would be assured by the Vandever Bill, and therefore his arguments were weakly based on private concern. Washburn and Company, which owned a road in the valley, would benefit from an extension of the existing Yosemite Grant by a profit of $20,000 or more by selling the rest of the road to the valley commission appointed to protect the Reserve. Support in opposition to the bill faded by mid-1890 as Muir amassed mounting support for the Yosemite cause.

As pleased as he was, Muir believed the Vandever Bill still was not satisfactorily comprehensive. Indeed it addressed Muir's desire for federal management of the Reserve, but it omitted "the cascades, the source of most of the streams" that enter the valley, and also the Hetch Hetchy Valley, the "Big Tuolumne Meadows" and the "Big Tree groves below the valley." 56 Muir urged for the inclusion of Lake Tenaya and the Tuolumne River watershed as well. 58 Johnson almost needed convincing to include these regions in the bill as suggested by Muir's emotional rhetoric in his letters. By September, the bill had been enlarged five times to include these regions that Muir initially proposed in his letter of March 1890 to Johnson: "the three groves of Big Trees, the Tuolumne Canion, Tuolumne Meadows, and the Hetch Hetchy Valley." 57 Now it needed passage through the House Committee on Public Lands, which was practically assured in a September 1890 letter Johnson received from Indiana Representative William Holman, a member of the Committee. Holman guaranteed that the Chairman of the Land Committee in the Senate would push it along as soon as it arrived from the House. 58

Consequently, the bill sailed through the House as well as the Senate, receiving Congressional approval on October 1, 1890. The Reserve became Yosemite National Park, the second such park ever created behind Yellowstone in 1872. The park spanned fifteen hundred square miles of canyons, fields, and waterfalls. Sheepherders and lumbermen were outlawed from the park, and although the bill did not keep some of these offenders away from the valley, it allowed for better protection of old growth forests and helped replenish new growth in devastated woodlands. 58 However, more opposition arose as local residents feared "the thought of losing some thousands of acres of taxable land," crying that any "alienation of land, beyond this, is of evil." 60 The bill prevented the employment of thousands in the future exploration of rich mineral deposits as well. 61 Conservationists and Californians were victorious in protecting the valley, yet simultaneously defeated in the economic realm. Private land still existed within park boundaries, "an ever-present source of trouble" for the government, as land owners took legal action to obtain compensation for their losses. 62 These problems seemed to propagate in the early 1900s.

As for the sheep, no laws were present to prosecute trespassing sheepherders, so patrolmen had to devise their own clever punishment. Army cavalrymen were sent on horse trails that were created with respect to Yosemite's delicate flora and fauna to patrol the far borders of the park. Although soldiers spent far more time mapping out the vast territory than chasing sheepherders who knew the country well, they were able to deter trespassers from ever returning. 63 If trespassers were found within the park boundaries, patrolmen arrested the culprits and escorted them "across the most mountainous regions" to a desolate boundary point. 64 The offender would then be released, and his flock directed to another distant boundary location. By the time the herder found his sheep, the casualties would have amassed so greatly that punishment by the courts would have been less severe. Some sheepherders were able to avoid the army troops by hiring scouts to watch the trails and give warning when patrolman were seen. 65 As historian Alfred Runte has shown, the battle to preserve Yosemite from illegal logging and grazing would continue in the years after 1890 despite these inventive and harsh punishments. 66

The ultimate outcome of the Yosemite conflict was complementary in the sense that many problems were the consequence of a great victory for conservationists and the public alike. While protecting its peaks and pines, the bill and the national conflict itself made the remote valley a travel destination for hundreds of thousands of people in the first half of the twentieth century. The village of Mariposa and other surrounding Yosemite communities probably never conceived that millions of visitors would buy their local economies more so than any property tax, nor did they envisage in 1900 the relentless stream of cars that would plug their previously peaceful streets every day by the 1980s. The creation of Yosemite National Park through the Vandever Bill became a double-edged sword; people today still interpret the decision and its effects in negative and positive ways. 67

Notwithstanding the conflict that continues today, millions extend their gratitude to John Muir for his leading role in establishing and protecting a natural treasure to be enjoyed by everyone. Historians credit his ethical integrity, conviction, and literary brilliance as attributes that provided Muir the ability to almost single-handedly recruit public support and court the federal government for protection of Yosemite in 1890. Muir took decisive action after surveying on his numerous excursions the destruction wrought by tourism, logging, ultimately sheep grazing in the West. His observations of forestry practices in Maine, Michigan, Wisconsin, and the redwood belts of California presaged his thinking on the Sierra. He ultimately settled on Yosemite after a trip with Robert Underwood Johnson in June 1888. Had it not been for his sheepherding experience in that fateful summer of 1869, Muir may never have acted so fervently to protect the valley. In the end it was those "black sheep," the undesirable and detrimental "hoofed locusts" that Muir witnessed in the valley over the decades devastating the fields and highlands of his beloved wilderness, that motivated him to protect Yosemite.
I was located only a few miles away within park boundaries. In spite of ditches were initially prohibited from being constructed within the Pinchot Yosemite. Muir even offered water conduits and for other beneficial uses. the dam and reservoir would submerge the beautiful sister valley of proposal, Gifford early as Canongate 1901 intensified its push to dam the Tuolumne River to provide water and hydro power to its 400,000 city residents after 1884, under this act. Muir opposed his adversary and chief advocate of the proposal, Gifford Pinchot, and his utilitarian ideas of nature. Pinchot and dam supporters asserted that a reservoir would provide hundreds of thousands of bay residents with cheap power and better water, and would regulate flooding downstream and provide irrigation for crops. Muir roused public opposition, claiming that the dam and reservoir would submerge the beautiful sister valley of Yosemite. Muir even offered San Francisco a compromise in order to save Hetch Hetchy, suggesting Lake Eleanor as a resource which was located only a few miles away within park boundaries. In spite of Muir’s efforts, a permit was granted in 1908 by the federal government to dam Hetch Hetchy upon approval by Congress. The issue was heavily debated over the next five years. The damming of Hetch Hetchy appeared as a bill in late 1911, where it was voted and approved on December 6, 1913 by a senatorial margin of forty-three to twenty-five. Thus San Francisco was given permission to flood Hetch Hetchy Valley. The O’Shaughnessy Dam and Hetch Hetchy Reservoir were not completed until 1923, almost a decade after Muir’s death. For more information see Stephen Fox’s The American Conservation Movement: John Muir and his Legacy (Madison: University of Wisconsin Press, 1985).

ENDNOTES

3. San Francisco considered damming Hetch Hetchy Valley as early as 1901 with the passage of the Right of Way Act; however, the San Francisco Earthquake of 1906 and subsequent fire resulted in the doubling of their efforts to flood the valley. Canals and ditches were initially prohibited from being constructed within the boundaries of National Parks and Forests, but the Right of Way Act of 1901 permitted the federal government to grant rights of way for water conduits and for other beneficial uses. San Francisco intensified its push to dam the Tuolumne River to provide water and hydro power to its 400,000 city residents after 1906 under this act. Muir opposed his adversary and chief advocate of the proposal, Gifford Pinchot, and his utilitarian ideas of nature.
4. Fox, p. 75.
5. Fox, p. 86.
9. Johnston, pp. 56, 62, 65. Frederick Law Olmsted acted as the informal head of the Commission until 1866. He encouraged tourism for “the great body of its citizens” by recommending scenic access road and trails.
10. Fox, p. 86. Reverend Samuel Hall Young was a friend and occasional climbing partner of Muir who explored Alaskan glaciers with Muir on a missionary trip in 1879, which was Muir’s first voyage to Alaska. Young almost did not survive the trip after suffering a devastating fall that rendered him incapacitated on the 8,000 foot glacier. Muir managed to reset one of Hall’s dislocated shoulders and with no rope and the sun setting, Muir assisted his missionary friend down the glacier and all the way back to camp. For more information on their Alaska travels see Young’s book Alaska Days with John Muir (New York: Fleming H. Revell Co., 1915).
11. The rough lava and sage plains Muir observed in his Mount Shasta trip in 1874 were likely reduced to barren prairie by timber cutting at the time of his trip with Hall Young in 1888. A crude lumberman’s town had been established, which accelerated the rate of destruction of the Shasta firs and brushy valleys on the mountain. For more information see Muir’s early Shasta experiences in Linnie Marsh Wolfe’s John of the Mountains: The Unpublished Journals of John Muir (Madison: University of Wisconsin Press, 1938).
13. Fox, p. 87.
14. Fox, p. 98.

Sketch by John Muir. (Photo courtesy of the John Muir Papers, Holt-Atherton Special Collections, University of the Pacific Library. Copyright 1984 Muir-Hanna Trust)
24. The Mariposa Big Tree Grove was already protected under the Yosemite Grant of 1864, and Muir wanted to ensure that the grove would remain protected if the Reserve was expanded.
29. Clark, p. 10.
34. "Robert Underwood Johnson to John Muir," March 4, 1890, MP.
35. Nash, p. 76.
38. Muir, My First Summer in the Sierra, p. 54.
40. Geist, p. 269.
41. William Swagerty, personal communication, December 2, 2004
43. Muir, My First Summer in the Sierra, p.1.
44. Muir, My First Summer in the Sierra, p. 12.
45. Muir, My First Summer in the Sierra, p. 112.
46. Muir, My First Summer in the Sierra, pp. 3-4.
50. Muir, My First Summer in the Sierra, p. 113.
52. Muir, My First Summer in the Sierra, p. 148.
55. “Robert Underwood Johnson to John Muir," September 20, 1890, MP.
57. Fox, p. 105
60. Fox, p. 106.
64. Johnston, p. 201.
65. Russell, p. 158.
67. As long as sheep threatened the valley with invasion, the cavalry’s strong-arm tactics of separating sheep from shepherds coincided perfectly with preservationists’ overriding objectives. Preservationists applauded enthusiastically the army’s effective halt of vandalism by sheep, believing that this “brand of enforcement” was much more effective in protecting the valley than the lackadaisical and even destructive management practices of the Yosemite Park Commission. See Runte YEW, pp. 60-62.
68. Public comments on the planning of Yosemite Valley have been recorded since 1992. Positive effects of the creation of Yosemite National Park include the restoration, protection, and enhancement of the resources of Yosemite Valley, and the widespread opportunity for high-quality, resource-based visitor experiences. Opponents of the Yosemite plan today argue that business interests should be set aside to ensure the health of the Yosemite ecosystem. Public opposition has also voiced that the park adversely affects air quality and causes huge noise and pollution impacts. They also believe that the Commission created by the Vandenber Bill is not doing enough to protect the ecosystem of the park. For more information see the National Park Service’s “Summary of Public Comments and Responses,” http://www.nps.gov/yose/planning/mrplhtml/rtc3.html (11 December 2004).

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BOOK REVIEW

Breaking Through the Clouds by Richard Fleck
Reviewed by Terry Gifford

Readers of this Newsletter will be familiar with Richard Fleck’s work on Muir through his authoritative Introductions to two Muir volumes and the sensitive scholarly study Henry Thoreau and John Muir Among the Indians (Hamden: Archon Books, 1983). But most significant in relation to this collection of Fleck’s mountaineering essays, was Fleck’s attempt to reconstruct the mountaineering book that Muir had wanted to write and never got around to approaching. In editing Mountaineering Essays by John Muir (Salt Lake City: University of Utah Press, 1997) Fleck provided us with a starting point for considering Muir as a major writer in the field of mountaineering literature in the nineteenth century.

So now, having given up the heavy-duty part of a distinguished academic career, retiring from the Deanship of a college in Denver, Fleck comes to the fun end of publishing which allows him to write a book about his climbing trips throughout the American West, in Alaska, Japan, Ireland and on his local restorative peaks that actually enabled him to cope with the stresses of the academy. He’s still teaching, of course – the fun courses that are probably his most inspirational so far. If the academy were not so narrow in its concept of scholarship, more receptive to the rich and urgent movement of eco-criticism in literary studies and Fleck had published this kind of book early in his career, say, as a PhD in what is now called ‘narrative scholarship’, Fleck might well have developed as a significant American nature writer. The point is that, with this book he still might be recognised as such.

For this is simply wonderful writing in a genre where it is notoriously difficult to avoid monotony – that describing walking up steepish mountains when nothing much happens, and everything that is important happens. This is not Touching the Void, a climbing epic recently made into a film. This is about reading a mountain, researching not just its geology, but also its ancient meaning and uses for its indigenous people. It’s about reading and celebrating vegetation, habitats, weather and companions in observant and striking prose – ‘Our legs felt like pounded steel and our stomachs growled like wolves’. With his wide-spectrumed curiosity and his experiential reflectiveness on the personal and cultural meanings of these mountains, quite apart from the celebratory spirit in the observant writing, Fleck is a contemporary ‘John of the Mountains’ – right down to the little dog. Atop the Santa Barbara Divide his ‘stare into New Mexico space far and near’ refers to three species of flowers at his feet and the flat eastern plains. He then reflects in a mode that is pure Muir:

The sky defines western lands like no other region in America. Western clouds sometimes even replicate terraced landforms below, as though the land had urged the clouds to conformity. Nowhere else have I sensed planetary space stretching forever as I have here. The sky does feed the soul. We know we are part of the universe. It’s as though we stood on some fresh and new planet that was light-years away.

And, of course, because he is out there, things do happen. Three bighorn sheep – rams that come close, rearing up on their hind legs – herd Fleck and his companion off their territory. ‘We had come eyeball to eyeball with creatures that are much closer to the land than we are.’

For contemporary taste the occasional explicit ‘feeding of the soul’ and the whimsy of ‘as though the land had urged the clouds to conformity’ might jar with some readers. But the easy integration of interesting information, theories and the work of other writers into the magic of the personal experience more than compensates for this. Ever the alert scholar, Fleck ends his book with a hitherto unpublished prayer by Black Elk. It is the final gift in a book rich in insights for the reader that has clearly been relished in the writing. I look forward to the next book from this ‘new’ nature writer.

Terry Gifford, Director of the International Festival of Mountaineering Literature, University of Leeds, UK
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