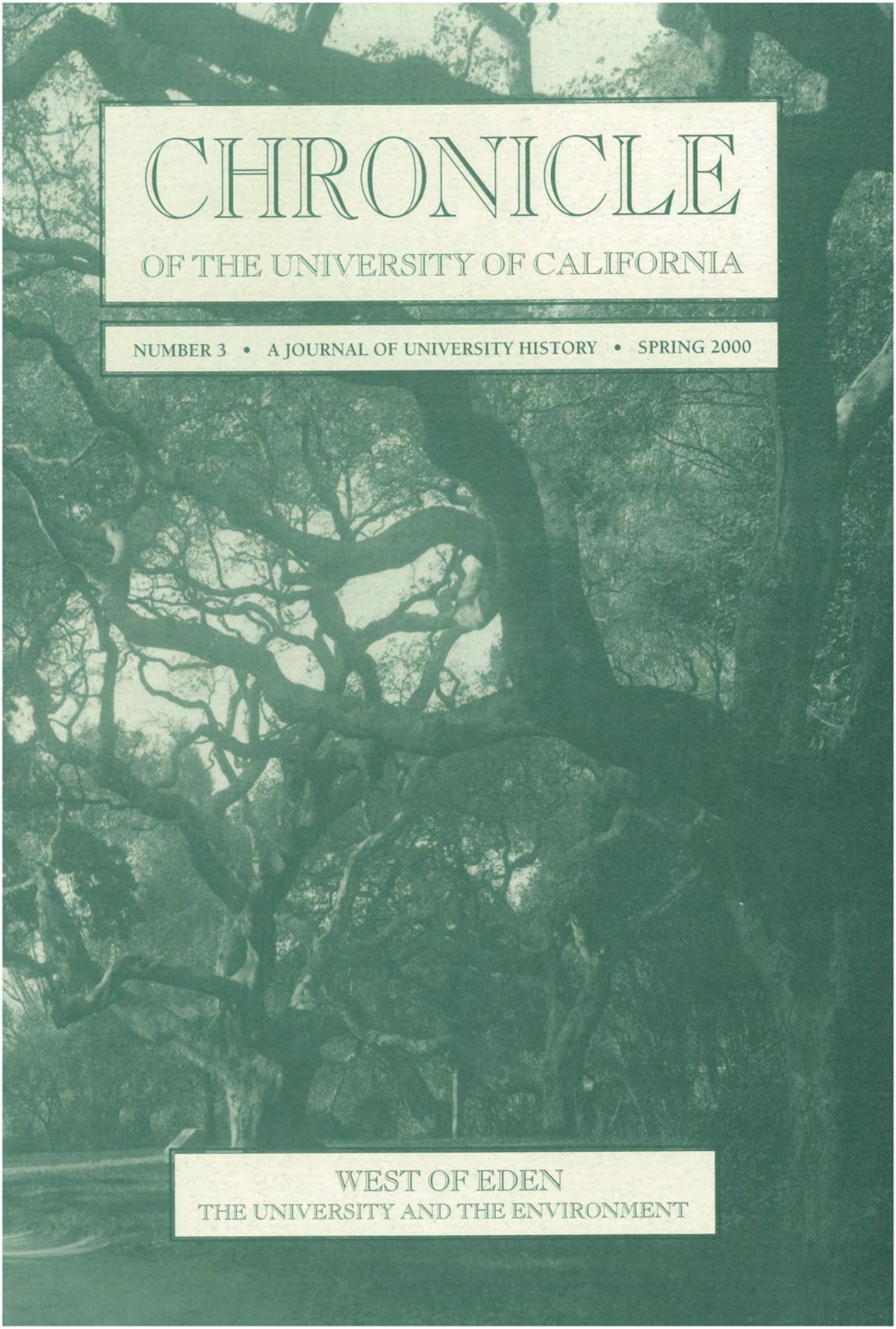

CHRONICLE

OF THE UNIVERSITY OF CALIFORNIA

NUMBER 3 • A JOURNAL OF UNIVERSITY HISTORY • SPRING 2000

WEST OF EDEN

THE UNIVERSITY AND THE ENVIRONMENT

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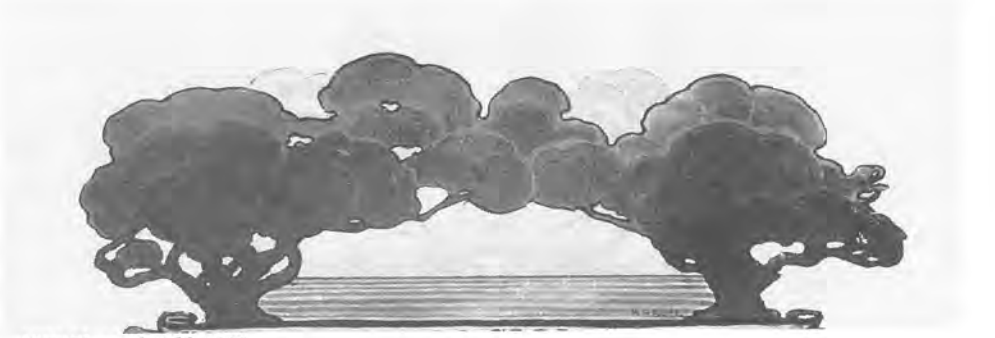

1903 Blue and Gold, 1902.

The *Chronicle of the University of California* is published semiannually with the goal of presenting work on the history of the university to a scholarly and interested public. While the *Chronicle* welcomes unsolicited submissions, their acceptance is at the discretion of the editorial board. For further information or a copy of the *Chronicle*'s style sheet, please address:

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Cover: Oaks on the Berkeley Campus, 1920. *University Archives (UARC PIC 2:49)*.

CHRONICLE
OF THE UNIVERSITY OF CALIFORNIA

Spring 2000

WEST OF EDEN

Edited by Carroll Brentano

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PART TWO
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Ecological Design
By Sim Van der Ryn and Stuart Cowan

Under the Berkeley Oaks: Stories by Students of the University of California
Selected and Edited by the Editorial Staff of the *University of California Magazine*

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"The Marvelous Mountain," from *University of California Chronicle*, 23:2 (April 1921), frontispiece.

In their April 1921 issue, the editors of our predecessor *Chronicle* "take pleasure in presenting, through the courtesy of the artist, a reproduction of this striking etching of Mount Rainier, from Paradise Valley, the work of Mr. Roi Partridge. As the etching was made directly from nature upon the plate, the mountain is seen reversed. Attention may be called to the striking 'line technique' of the picture: the dark sky behind the gleaming snow is made with lines, and the consciously decorative line is used throughout the etching."

UNIVERSITY OF CALIFORNIA

CHRONICLE

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APRIL 1921

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A WORD TO OUR READERS

IN 1898 BERNARD MOSES, the university's first professor of history, established the *University Chronicle*, later known as the *University of California Chronicle*. He saw that "there were and would be public addresses at the University and documents relating to the affairs of the institution that ought to be preserved and made readily available," as he wrote in his unpublished autobiography. That *Chronicle*, appearing quarterly between 1898 and 1933, provided its readers with intelligent and entertaining accounts of contemporary events in the university's social, academic, and administrative life. Moreover, the *Chronicle* no doubt assisted in creating and fostering an identity, crucial not only for the campus community but also in mediating the university's dealings with the public.

Today, our institutional identity might appear to be firmly established, but institutional memory is ebbing. Every year thousands of new students (along with faculty members and staff) enter the university's campuses with little knowledge of the institution beyond its admissions requirements and perhaps its reputation for radicalism in the 1960s. And every year almost as many students leave knowing little more about their alma mater than when they entered. While institutional identity will and must evolve, it should maintain a self-consciousness of its direction by acknowledging its past. Without memory there is no identity; without identity the university is left as a mere collection of disparate buildings and people.

It is with this in mind that we, the Editorial Board, have revived the *University of California Chronicle*, in spirit if not in content. The new *Chronicle*, in contrast to the earlier publication, has an historical perspective. We are able to consider the current events of our predecessors in the context of ongoing changes within the university. Embracing this opportunity, the new *Chronicle*, at least initially, is organized around single themes that present an inherently longitudinal view of the university's development. The first issue considered institutional responses to natural disasters and calamities. The second was on women at the university. Future issues will focus on how the university has changed on the eve of the twenty-first century from its nineteenth century roots, campus conflict, and the university's relationship to institutions around the world.

In this same vein we now, with great pleasure, offer to our readers this current issue, *West of Eden: The University and the Environment.*

The Editorial Board

WEST OF EDEN

THE UNIVERSITY AND THE ENVIRONMENT

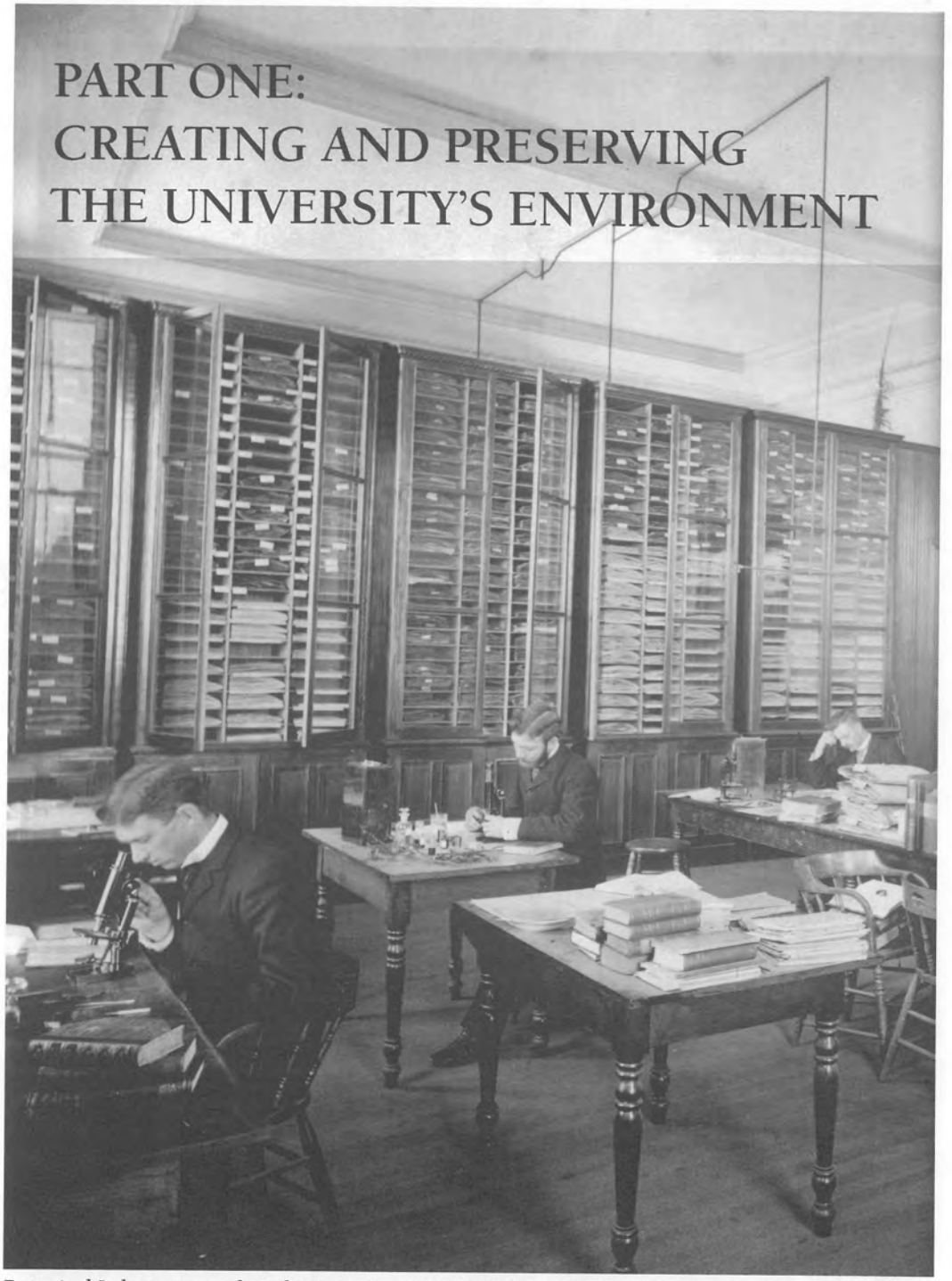
THE UNIVERSITY OF CALIFORNIA has rich and complex connections to the study, understanding and preservation—as well as the exploitation—of the natural environment. In this issue of the *Chronicle* our goal is to begin to explore some of these connections from the formal (university programs addressing environmental concerns) to the informal (individuals associated with the university who have had a major effect on environmental policies and issues). In the future we may explore other fields of interest and of a controversial nature, such as mining, agriculture, forestry, and water and energy conservation.

The genesis of the theme for this issue came when we realized that a considerable number of the early leaders of the American conservation movement were associated with the University of California. These included faculty who formed friendships with John Muir, helped found the Sierra Club and the Save-the-Redwoods League, and climbed (and left no less then ten names on) Sierra Nevada peaks, as well as California alumni of the early days: Franklin Lane, Horace Albright, and Stephen Mather who promoted natural resource policy, the Forest Service, and the U.S.National Park Service. These associations are discussed in this issue.

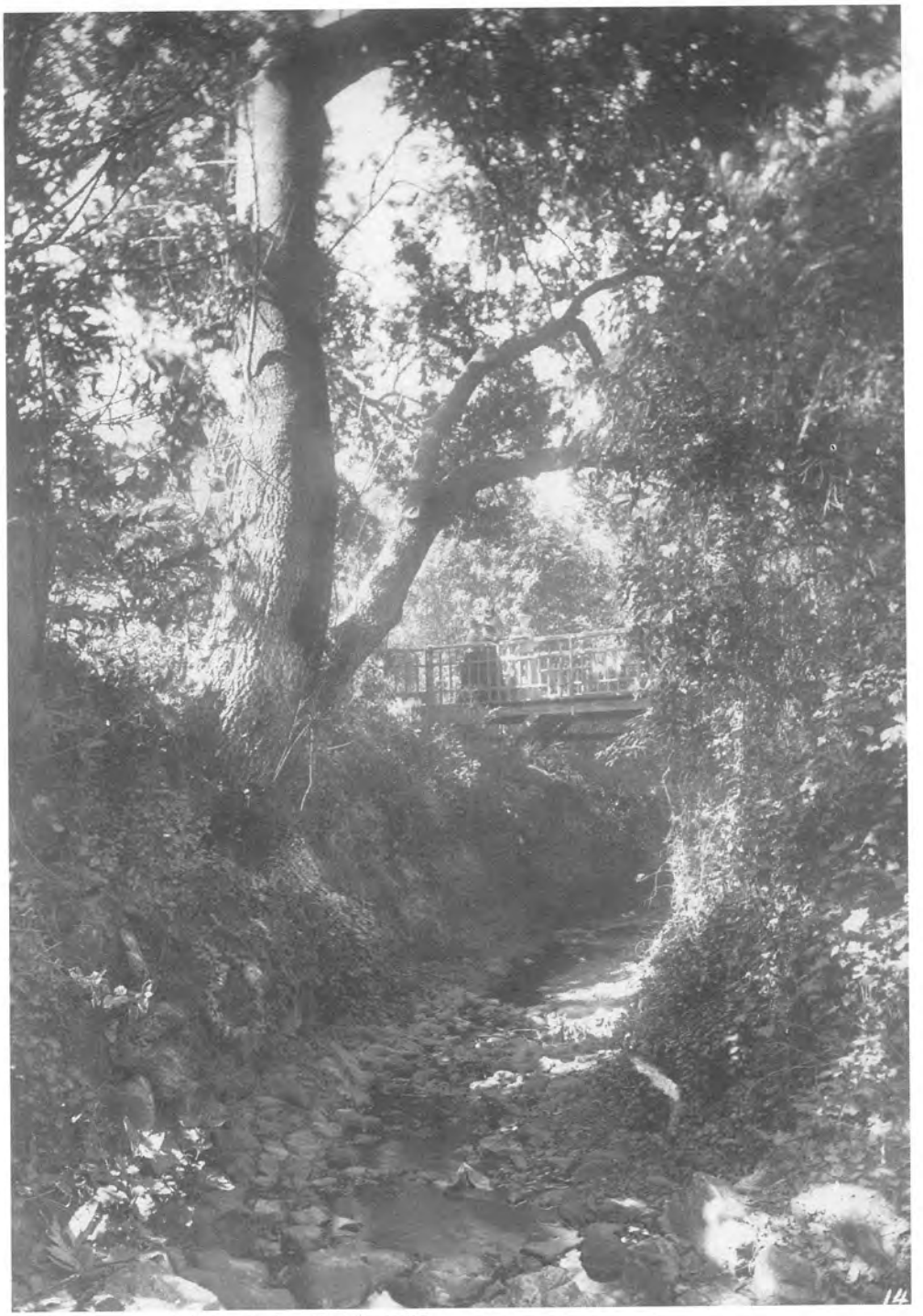
The story of the University of California's concern with the environment continued through the twentieth century and expanded beyond the Berkeley campus. Other articles cover the creation of the university's Natural Reserve System, the UC Santa Cruz organic farming programs, the university's Cooperative Extension role in helping farm families, and the historic effort to save the San Francisco Bay by three university wives.

We also touch on topics about the natural—and the artificially altered—settings of the university campuses: changing attitudes toward Berkeley's Strawberry Creek—which went from water resource, to open sewer, to environmental amenity—and the nearly forgotten 1905 controversy about building the "Big C" on Berkeley's Charter Hill, a dispute which foreshadowed later local battles over land use and scenic vistas. The century ends with environmental issues at the as-yet-unbuilt tenth campus at Merced. The University of California will probably always be "West of Eden" but will never give up trying to fulfill its promise.

PART ONE: CREATING AND PRESERVING THE UNIVERSITY'S ENVIRONMENT



Botanical Laboratory and Herbarium, South Hall, Berkeley, 1893. *Photograph by O.V. Lange. University Archives (UARC PIC 500:19).*



Bridge over creek (now Sather Gate), 1895.
University Archives (UARC PIC 2:151).

STRAWBERRY CREEK I

THE MAKING OF AN URBAN STREAM, 1860–1960

Robert Charbonneau

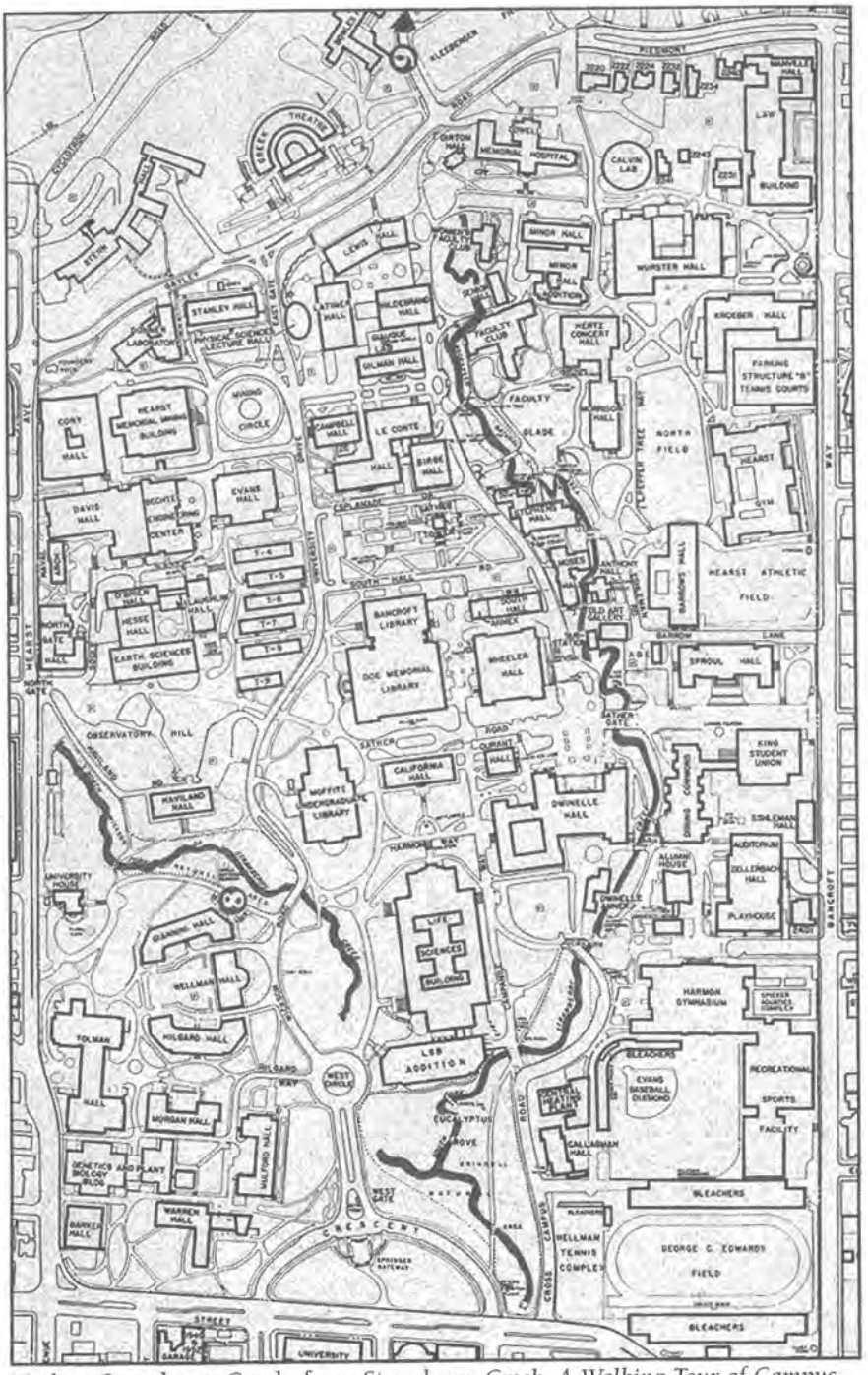
THE HISTORY OF STRAWBERRY CREEK is integrally linked to the founding of the Berkeley campus site and the subsequent development of the campus and its upper Strawberry Canyon watershed drainage area. Since its inception, the campus has taken a thoroughly utilitarian approach to dealing with the creek—first exploiting it as the primary water supply upstream and sewage disposal downstream, and soon thereafter attempting to get it under control in the name of progress. For over a hundred years as the campus grew, the creek was seen as an obstacle and hazard to overcome, and yet, oddly juxtaposed to this pragmatic view were romantic undercurrents that focused solely on Strawberry Creek's scenic amenities. Until recently, there were no indications that the creek was appreciated or even considered in an ecological or environmental context.

Strawberry Creek is a classic case of the environmental impacts of urbanization and human modification of the landscape. It serves to illustrate the vicious cycle of trying to re-engineer natural systems, only to find these efforts prove both counterproductive and destructive and inevitably lead to increasingly complex and expensive engineering solutions that must continue in perpetuity at the expense of ecological integrity. The creek's history is filled with such ironies, none more poignant than the harnessing of the creek for its own demise during the construction of the stadium in the 1920s.

The story begins with the native Huchiun peoples, who in stark contrast to the pioneers that followed, lived as an integral part of nature, rather than as conquerors destined to transform their surroundings into "civilization." What was for these peoples a small, natural, coastal stream would be transformed into an artificially engineered urban creek. Finally, until the campus changed its ambivalent attitude, Strawberry Creek would remain just another neglected and degraded urban stream.

Prior to the arrival in the Bay Area of the Spanish explorers and other pioneers in the late 1700s, native peoples of the Huchiun-Ohlone group occupied the Strawberry Creek watershed for several millennia. Living in harmony with the creek, they maintained some temporary habitation sites in lower Strawberry Canyon. The only remaining signs of their long presence are middens (refuse deposits) along the creek on the central campus. These upland sites are related to the massive shellmounds located along the former Berkeley bay shore (Spenger's parking lot off University Avenue at Third Street), which date back three to four thousand years. The Huchiun probably used the area of Strawberry Creek for fishing, hunting, and terrestrial food gathering before returning to the village sites at the shellmounds.[1] The Huchiun also actively managed the landscape by controlled burning of grasslands and underbrush to facilitate acorn gathering and the growth of seed-bearing annuals.

The campus and hill area appeared as an open oak woodland and grassland filled with perennial bunch grasses and herbaceous flowering plants. Tree cover was generally limited to the narrow creek corridors, with strips of riparian vegetation lining the channels from the hills down through the alluvial flatlands to the bay. Salmon and trout spawned in the larger perennial reaches of the streams. Legend has it that the Strawberry Creek got its name from the abundant native vines once found along its canyon banks.



Modern Strawberry Creek, from *Strawberry Creek, A Walking Tour of Campus Natural History* (University of California at Berkeley, 1990).

In March 1772, a Spanish expedition led by Lieutenant Don Pedro Fages and Father Juan Crespí stopped for the night along the banks of Strawberry Creek—a commemorative plaque is located just upstream of Oxford Street—and there Father Crespí described the beauty of the Golden Gate vista. Spanish explorers named the East Bay "Contra Costa," "opposite coast." In the early 1800s, the peaceful Huchiun peoples having been moved in the

1790s to Mission Dolores, the East Bay was partitioned into land grants by the last Spanish and first Mexican governor of California. The boundaries of these tracts were often delineated by streams because they were the most obvious landscape features. The Rancho San Antonio tract, for instance, was deeded to Don Luís María Peralta in 1820 and encompassed the present cities of Albany, Berkeley, Emeryville, Alameda, Oakland, Piedmont, and San Leandro. Peralta introduced cattle into the area, which became vast open pastureland. In 1842, Peralta divided the rancho among his four sons, and gave his son José Domingo the northernmost area, now consisting of Berkeley and Albany.

The gold rush of 1849 opened the East Bay to widespread settlement. Disappointed miners returned from the Mother Lode in the early 1850s to squat and begin farming on Peralta's lands. José Domingo Peralta resisted the first squatters but could not maintain control over his desirable land. In 1853, Peralta sold off most of his land, and the next year Orrin Simmons, a Yankee sea captain turned farmer, acquired squatter's rights to 160 acres of land south of Strawberry Creek (between the creek and the Clark Kerr Campus and roughly east of College Avenue). In 1857 he obtained full title and purchased two more tracts of land to the north, giving him ownership of 700 acres, including the future site of the upper campus and the sites where the Greek Theatre and stadium are now located.

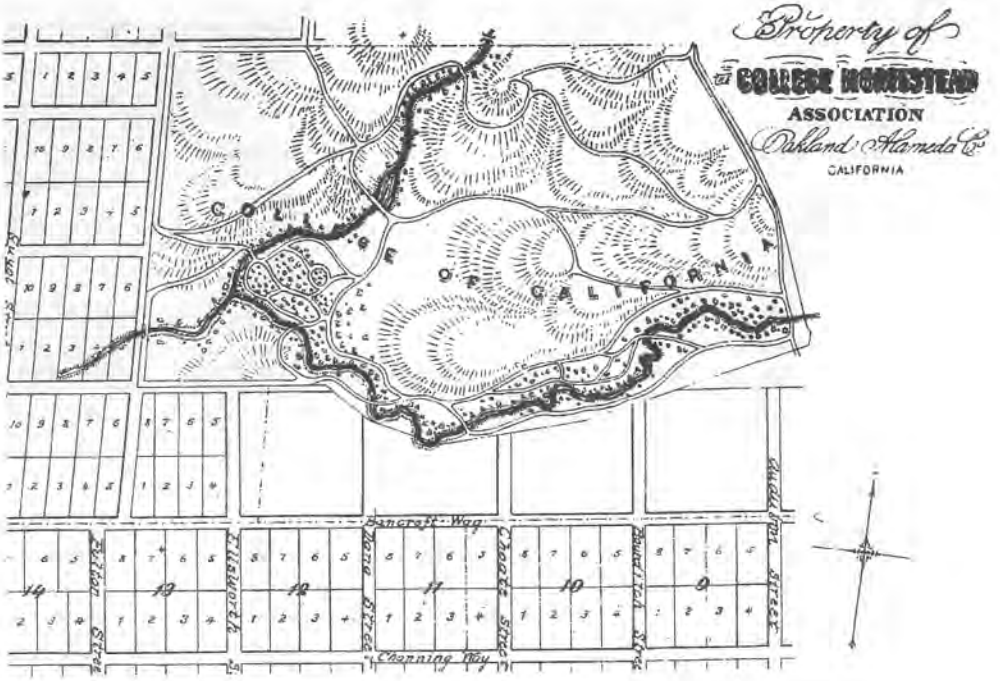
Up until this time, the creek likely remained relatively undisturbed except for stream bank erosion and sedimentation resulting from cattle grazing in and below Strawberry Canyon. Squatters had transformed the campus area landscape into pastureland and later into open fields of grain. An 1885 article reminisces about the campus site and creek prior to development:

> There were no roads through that portion now known as the University grounds, only cattle-paths to guide one through the profusion of poison oak and other tangled vines, that twined themselves about numberless oak trees. Our fair University site formed a part of a most desirable cattle range, and the romantic walks by the winding creek served a very practical purpose indeed. And the creek, although its course has not been changed, is altered in other respects. There were no bridges over it, only planks thrown loosely across, and the water-bed could not be reached except where boys or cattle had made paths down its steep, slippery and brush-covered banks.[2]

Strawberry Creek and its watershed were soon to be changed forever, as the trustees of the College of California searched for a new campus site in 1856-57. One of the essential site selection criteria was the availability of a reliable potable water supply. The trustees had initially rejected the Berkeley site in 1856 because Strawberry Creek was believed insufficient to supply campus water needs, but they reconsidered the following year at Simmons' urging. Simmons was a friend of influential Professor Henry Durant, who became the university's first president in 1870; Simmons would later make a handsome profit on the sale of his ranchland to the college. So during 1857 the small creek and its canyon watershed were more closely scrutinized as a potential water supply.

> The quantity of water in Strawberry Creek was noted through the dry season. The springs in the hills were explored. Examination was made to ascertain whether there were other sources of water supply available in the hills. It was never intended to do so foolish a thing as to locate a College, in this State of long, rainless summers, on any site, without an abundance of pure, flowing water. During the year it was satisfactorily ascertained that a

> copious supply could be obtained, back in the higher hills. When this fact was finally settled, the opinion of the Trustees and friends of the college seemed to gravitate towards this spot as the permanent site of the College . . . The site, as contemplated at that time, consisted of one hundred and forty acres. It was to include both banks of Strawberry Creek, and their fine bordering of oaks, sycamores, bay-trees, and a plentiful growth of evergreen shrubbery.[3]



College Homestead Association Tract, 1866, project for College of California.

In 1858, the trustees voted unanimously to adopt Berkeley as the campus site and subsequently purchased five tracts of land immediately west of Simmons's ranch. However, problems soon arose concerning water rights to Strawberry Creek and its canyon springs above the campus property. This led to the 1864 incorporation of the College Homestead Association, which subdivided 128 southside lots (160 acres) for subsequent sale in order to raise funds to purchase Simmons's lower canyon ranchland, thereby securing water rights to the creek.[4]

The College Water Company was incorporated in 1867 to develop waterworks to supply water to the campus and homestead tract. A brick reservoir was built in the hills (at the foot of what is now Panoramic Way above the stadium). It was supplied by a wooden flume in lower Strawberry Canyon that collected water from various canyon springs, located in the hills around the present Lawrence Berkeley National Laboratory. In addition, water was piped from the college-owned Heywood Springs, located about a half mile north-northeast of the campus, in the vicinity of what is now Fire Station #7 on Shasta Road. Wrought iron and galvanized pipes distributed the water to the campus and homestead tract. The college also secured additional water rights to Wildcat Creek (on the east side of the hills in what is now Tilden Park) to ensure an adequate water supply:

> The foundation was indeed laid for securing such a water supply as had from the beginning been considered the only thing wanting to make the College site very nearly perfect for its purpose. With all its other fine advantages, as before remarked, it would never have been chosen as the location of a great institution of learning by the Board of Trustees without a more copious and reliable water-supply than that furnished by Strawberry Creek alone. They would have felt that they never could have excused themselves to the generations of coming time for placing such an institution as a college where there was not a copious flow of pure, fresh water. . . . But when this last source of supply was assured, the College site was judged to be possessed of every advantage as the permanent location of the College and the College town. Plans could now be made for improvement of grounds and building lots without fear of drought or scarcity of water.[5]

The harnessing of Strawberry Creek's stream flow was begun in earnest. As soon as the initial waterworks were substantially completed in August 1867, the college hosted a public celebratory "rural picnic" on the grounds to inaugurate its new water supply system:

> When the water was first turned from the reservoir into the pipes, and went up in spray over a hundred and fifty feet pressure, at various points on the homestead tract and College site, playing jets fifty or seventy-five feet in the air, it was a sight novel and animating enough. It was a demonstration that waterworks thus begun could be carried to any desired extent. The water could be conducted down wherever it was wanted, all over the plain, and to Oakland itself if it should appear that it could be done to advantage. It would first be for the use of the College, on its own grounds, not only for domestic purposes, but for irrigation, for security against fire, for fountains, and ornamentation generally, and then for the supply of the public at a fair rate.[6]

However, this rosy outlook proved to be overly optimistic. The thirst for water of the growing campus and environs continued to outstrip the limited supply, especially during the dry season. The campus reservoir ran dry several times in 1877 and additional small dams were eventually built in Strawberry Canyon in 1897 and again in 1904. A new 300,000-gallon water tank was built in the canyon in 1898 where Witter Field above the stadium is today, but complaints about the inadequacy of the campus water supply system persisted until a high pressure water main was finally completed along Piedmont Avenue in 1926.

While much of the water was being drained out of the creek, it was simultaneously being replaced by wastewater. The first reports of problems with sewage contamination date back to 1877. A city sanitary sewer system was not even contemplated until 1883, and not actually built on campus until the 1890s.[7] The mainline trunk sewer through the middle of campus was not completed until 1906.[8] Strawberry Creek served as an open sewer for decades until this infrastructure was completed. In 1877:

> At present unless something is done to improve the drainage from some private homes and boarding houses, the health of the neighborhood will be seriously impaired . . . let him take a twilight stroll along the windings of Strawberry Creek and from afar, will be scent that Berkeley's balmy zephyrs are freighted with the doubtful odor of essences extraneous. Just as we were

> taking refuge from the scented air at Bachman's, a freshman was giving a gentleman directions to the University buildings. Said he, "Stranger, go up this creek as long as you can hold your breath, and turn left."[9]

Serious sewage problems persisted until at least 1895, but not without criticism directed at both the adverse aesthetic impacts and threat to public health, the *Berkeleyan* commented:

> In moderately civilized communities, it is conceded that the use of an open water-course as a sewer is detrimental to the public health and destructive of natural beauty. Yet here at the seat of the highest learning offered by the State, where civilization may be considered as having one of its most advanced positions, we have the above shocking state of affairs. Leaving out of consideration the unsightly appearance of sewer-begrimed water, and filthily discolored banks, the effect upon the health of those living near its borders, as well as of the students and faculty working in laboratories at its very brink, should raise public opinion to the extent that it would be impossible for anyone to make use of Strawberry Creek as an easy means of removing sewage. The University of California should be the first to cease, and should use its every endeavor towards keeping Strawberry Creek what it naturally is, one of nature's means of preserving the beauty of the grounds through which it flows.[10]

Three forks of Strawberry Creek meandered through the central campus until the early 1880s. The meager middle fork joined the South Fork just north of Campanile Way near the corner of the Life Sciences Building Annex. It then ran northeasterly under the Valley Life Sciences Building, and split into two tiny branches with headwaters between California Hall and Durant Hall near Campanile Way, and on the north side of the central glade east of Haviland Hall around the base of Observatory Hill. In 1882, the middle fork was summarily filled in and graded to create a dry level area for a cinder running track. This relatively flat, open portion of the central campus was considered the most suitable place for the large track (now occupied by the Life Sciences Building Annex).[11] The Eucalyptus

The creek near Oxford Street, 1893.
University Archives (UARC PIC 200:2).

Grove was then planted to shelter the track from the strong prevailing westerly winds off the bay.

As additional ranchland was cleared in the canyon in the late 1800s, storm water runoff and sedimentation also increased. As a natural equilibrium response to greater winter flows and sediment loading, the creek channel tended to both widen and incise (deepen) to accommodate the heavier load. The first of many rock check dams was installed in 1882 in an attempt to stop the streambed incision which inevitably led to stream bank undercutting and subsequent collapse. The dams would serve as "grade control structures," preventing the streambed from deepening in the vicinity of the dams and raising the upstream bed profile:

> Workmen of the grounds have been engaged in improving the creekbed, and making provisions for winter freshets. A few years ago the frightful gully in the creek did not exist. Prof. Le Conte explains this sudden eating away as a result of the clearing off the country, and thereby increasing the erosive power of the winter rains. Five dams have been constructed in order to prevent any further cutting away, and it is hoped that in the future no further damage is done.[12]

Of course, this was a vain hope as additional development in the watershed increased the winter storm water runoff into the creek from impervious surfaces such as roads and buildings. Only one month after these first check dams were installed, it was noted that "trees near the experimental grounds (Main Branch upstream of Oxford Street) are falling into the creek. The earth was washed away by the water, causing some lofty tumbling."[13] The first shots had thus been fired in the never-ending battle to control the natural erosive forces of Strawberry Creek, an engineering struggle that continues to this day. The Civilian Conservation Corps built additional check dams in Strawberry Canyon in 1934, and more were added there in 1941. Eventually, about sixty check dams would be installed along the central campus to prevent streambed downcutting and bank erosion.

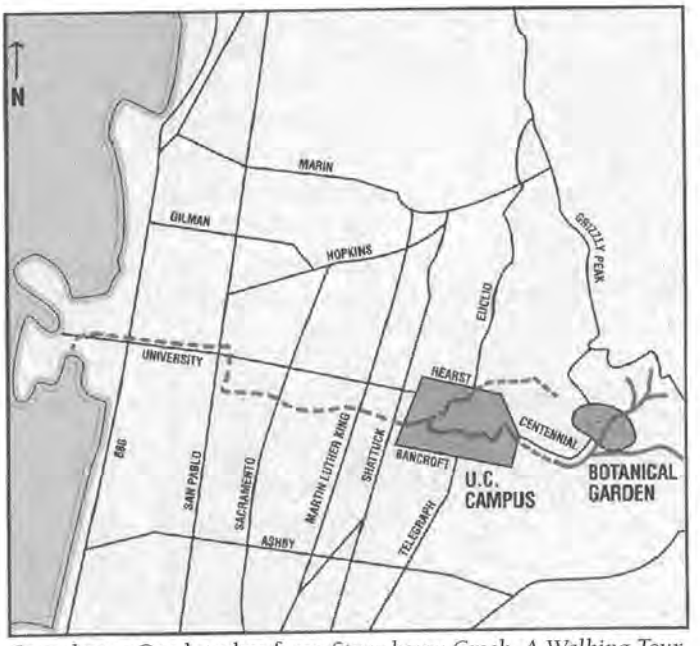
The battle escalated as check dams proved insufficient to stem the channel erosion, and it soon became necessary to armor the streambanks with riprap in the early 1900s to prevent bank erosion and collapse. "In anticipation of heavy rainfall this winter, the creek just west of the heating plant [South Fork behind the old art gallery building] is being solidly embanked with broken rock and concrete." The *Daily Californian* reported in 1904: "Last winter the creek was badly washed out at this sharp turn and proper embanking has become necessary to save adjoining land."[14]

However, these efforts also proved futile, as erosion continued to worsen because

The creek, 1896.
University Archives (UARC PIC 200:45).

of higher storm flows caused by continuing development in the watershed. This situation led to a drastic engineering solution in 1907 as concrete "hardbed" was poured into the stream-bed and onto the banks, as reported in the *Daily Californian*:

> Work is steadily going on lining the bottom and sides of Strawberry Creek with concrete, in order to protect the trees on the banks. Already six of these concrete linings are completed, but work will continue until the rains. This cementing of the creek is being done all the way from the Gymnasium to the Agricultural College Farm [South Fork from around Sather Gate downstream to Oxford Street] wherever necessary to protect trees.[15]



Strawberry Creek today, from *Strawberry Creek, A Walking Tour of Campus Natural History,* ed. R. Charbonneau et al. (University of California at Berkeley, 1990).

Eventually many rock and concrete retaining walls were built along the stream banks to protect adjacent buildings, facilities, trees, and landscaping. The channelization and confinement of the creek became necessary as the campus grew and development encroached upon the meandering creek channels. Ironically, this channel constriction only increased the scouring effects of the storm flows, and exacerbated both erosion and flooding problems. The construction of Stephens Union in 1923 right on the banks of the South Fork actually required the stream course to be realigned towards the south in order to fit in the imposing building. In a pattern that would be continually repeated, the creek retaliated within two years as "heavy rains raised the water in Strawberry Creek to such an extent that a portion of the protecting wall was washed out at the east entrance to Stephens Union. The grading and winding of the stream was impaired."[16]

The first culvert was installed in the creek in 1883 on the west side of campus underneath Oxford Street to improve transportation in the city and possibly for public safety reasons:

> A culvert has been put in Strawberry Creek between Berkeley High School and the University grounds. Soon the street will be open for horses and wagons. This is a great convenience, as it much shortens the distance to be traveled by teams between the upper and lower parts of Berkeley, and in some cases does away with the necessity of wagons crossing the railroad track, which has in times past been a source of destruction of life and property.[17]

By 1897, the Oxford Street culvert had been extended to jog south underneath Allston Way to the west of Shattuck Avenue, where the creek then reappeared. Cement box culverts were installed along Strawberry Creek throughout its entire length westward during the

1880s, 1890s, and early 1900s. This continued through the 1930s when the Works Progress Administration (WPA) finished culverting most of the last open reaches. Nearly the entire length of Strawberry Creek down through Berkeley to the bay was eventually laid underground.

Straightening and realignment of the creek channel began in 1887, resulting in what should have been an early lesson in stream geomorphology, on the adverse effects of straightening meandering stream channels:

> One of the secretaries thought to change its meandering disposition by straightening out a loop or two in its devious course, but the wayward stream resented this by burrowing a narrow channel for itself some twenty feet deep where teams had been wont to cross but a few years before. In punishment for this, it was dammed at the lower part of the grounds, and it is now dutifully filling with sediment the canon that it eroded.[18]

Of course, instead of respecting the creek's natural tendencies, more engineering solutions were forced upon it. The "channel in back of the gym" (the South Fork downstream of Sather Gate) was straightened in 1904, and a few years later, in 1907, major channel alteration was done along the main branch upstream of the Oxford Street culvert. This reach was deepened in an attempt to increase its storm flow capacity in order to avoid flooding the downtown commercial district:

> In hope of coping with floodwaters through the campus during the winter rains, a force of men has been set at work deepening Strawberry Creek five feet, from Oxford St. eastward. The clogging of the mouth of the underground subway under Center St. last winter, threatening business property, has caused the deepening of the creek bed this summer in the hope that future trouble of this sort may be averted.[19]

Interestingly, this culvert entrance still poses a similar problem: when high winter flows prevent campus grounds personnel from clearing the "grizzly" (metal trash rack set across the channel), it clogs with brush and debris, causing the streamflow to divert out of the channel and across the north bank, eroding it and threatening surrounding redwood trees. Campus architects and engineers continue to work on redesigning solutions to this problem.

Two major alterations to the creek occurred in the 1920s when culverts were installed for the construction of Memorial Stadium (1923) and West Circle (1928). Ironically, culverting of the north fork channel beneath the West Circle was a direct result of John Galen Howard's "Phoebe Apperson Hearst Architectural Plan" (1908) for the campus buildings and grounds. Howard, appointed both professor of architecture and campus architect, extensively modified Bénard's original grandiose Beaux Arts plan for the campus and aligned the "University axis" with the Golden Gate, connecting the Hearst Mining Circle with the West Circle, but also slicing across the North Fork at two points (the circle and just upstream at the footbridge below the Wickson Bridge).

In a glaring example of insensitivity towards the campus landscape, not much thought was given, or it was decided against, moving the West Circle east or west along the axis a hundred feet or so to avoid superimposing it upon the meandering North Fork. There did not appear to be any protest or controversy when the West Gate and Circle part of the plan was finally implemented. It was routinely reported in August 1928: "as part of the Phoebe Apperson Hearst plan of campus beautification, improvement will start when cement workers begin the construction of a culvert and a road across the North Fork of Strawberry Creek."[20]

So a significant reach of the North Fork was lost beneath the traffic circle, the only segment ever culverted on the central campus (besides the south fork entrance onto the eastern edge of campus).

A small meander in the South Fork was redirected around Stephens Union in 1923, and in 1934 several pools were created along the South Fork's "brand new rock-lined course . . . by building rubble retaining walls and channels. Some of these pools are three feet deep and twenty-five feet in length."[21] No other significant alteration of the creek on the central campus occurred until the 1960s, when major flood control storm drainage "improvements" were made. A concrete high-flow bypass structure was installed in the South Fork to cut off a tight meander behind the old art gallery building, and further downstream a 300-foot reach of the South Fork from Sather Gate to the Dwinelle Annex was widened to at least ten feet. In conjunction with this, a reinforced concrete retaining wall was also built along the south bank near the Golden Bear Student Center.[22]

Original site of Memorial Stadium, circa 1914. *University Archives (UARC PIC 10D:30).*

The construction of the football stadium at the mouth of Strawberry Canyon in 1923 proved to be the most significant alteration of the South Fork. Several sites were considered for the stadium, but "the facts that the Canyon land is largely University property and that a structure could be erected there for a price within the amount subscribed to the Stadium fund were very prominent in the selection."[23] Other than objections from nearby Panoramic Hill residents, there did not appear to be any debate over the fate of the creek or orchard which were then located on the site. In fact, its severe environmental impact seemed only an afterthought. "When the California Memorial Stadium site was chosen it became evident that the waters of the stream had to be carried underneath the structure."[24] Despite this, the stadium had the enthusiastic support of the entire campus community and the alumni association.

Legal objections to the stadium were raised in April 1922 under the public trust doctrine. Ironically, it was argued that the university had condemned part of the lower canyon in 1876 for use as the campus water supply, and that it could not "devote the land to an entirely inconsistent purpose, such as the football stadium."[25] However, no lawsuit was ever filed, and work was scheduled to begin by the fall of 1922. The creek would be placed into a concrete box culvert beneath the stadium. The "Little Inch" culvert originally began just upstream of the stadium, at what is now Witter Field, and emptied out onto the central campus next to the Women's Faculty Club. Two small stream reaches remained open, between the present swimming pool, and the culvert's entrance, and in the vicinity of the parking lot above Kleeberger Field. But both of these short reaches were eventually put underground in the 1930s to allow additional campus development.

In another cruel twist of fate, the creek was harnessed as a water supply for hydraulic sluicing of the lower flanks of Charter Hill, later known as "Tightwad Hill," to make way for the stadium bowl. The creek was forced to become the agent of its own destruction:

> First concrete was poured in the construction of a large sewer which is to carry Strawberry Creek under the field. Two dams are to be built in the canyon to pond water used in the hydraulic process. Water will be pumped into an upper dam and forced against the hill on the east side of the creek to remove the earth. An estimated 280,000 yards of dirt will be removed from the hill. Water and dirt will be stopped at the lower end of the canyon and allowed to settle. The water will be pumped back into the upper dam and used again.[26]

Construction of Memorial Stadium, the hydraulic monitor.
University Archives (UARC PIC 10D:45e).

Hydraulic monitors (water cannons) used in placer mining were employed to blast the hill away and send it downstream into the creek and eventually the bay. The sluicing operations caused massive siltation, and surely had devastatingly lethal impacts on any living creatures that still inhabited the creek. The muddy eyesore created a general public outcry as evidenced by the following two letters to the editor of the *Daily Californian* in 1923:

> Why are we allowing our Strawberry Creek to be ruined? Here we have Strawberry Creek winding on its way across the campus, but we are letting it be turned into an ugly stream with the esthetic appeal of a river of cold coffee, with canned cream and the dregs and grounds of a few thousand coffee pots in it. We all want the Stadium, and want it quickly, but do we want it at the expense of our campus beauty? It will take a long time before our creek will be clear and sparkling again. When it does regain its clearness, it will be flowing over that deposit of red clay washed down from the hydraulic excavations for the Stadium. All the rocks will be buried in the sediment, and the creek will glide on, minus its beauty. Couldn't there be another outlet for the water and dirt from the Stadium excavation? Can't something be done before our creek is completely ruined?[27]

The second letter agrees:

> In my opinion, Strawberry Creek can no longer be numbered among the beauties of the campus. It is now only a trickle of dirty water in the bottom of a decidedly unpicturesque mud channel. About two weeks ago an article in The Californian mentioned the creek as "the most important factor in determining the location" of the University. Evidently, it was quite different in those days when the site for the campus was chosen because of it. In old volumes of the Blue and Gold I have seen pictures of Strawberry Creek and have read delightful descriptions beneath them. I am sorry to say that I see no resemblance between either the scenes or the descriptions and the creek as I have seen it during my first month on the campus. Of course I realize that the excavations at the Stadium are necessary, but I cannot admit the necessity of spoiling the beauty of the campus. There must be some way to avoid having the whole hillside washed into the creek. Why not install some filtering contrivance near the bridge at the end of College Avenue? Surely something should be done.[28]

Thus the stadium construction had acute short-term effects on the South Fork, in addition to the critical permanent loss of the creek channel from the lower canyon downstream to the central campus. The stadium may also have been a turning point in the deterioration of overall relations between the university and the community. The urbanization of the campus and canyon watershed and resulting deleterious impacts on the creek are summed up well in this 1923 editorial in the *Daily Californian* entitled "Wheels of Progress."

> Once, in the days that are no more, there was a silver-watered brook that went its way unfettered from the Hills to the Bay. Its source was in the fingers of water that slipped down the tangled ravines into a winding canyon; its course was contentedly brisk in its upper reaches, peacefully unhurried below. Two or three modest bridges, rustic or of rough-finished timber, spanned it at intervals. Philosophers found in the stream food for quiet reflection, amorous couples the qualities of a discreet chaperone, and connoisseurs of leisure a valid excuse for doing nothing. Nor was it idle—it posed for artists and satisfied man's very real need for the companionship of running water.

> Now, in the days that are, there is a ditch of viscous liquid. The water no longer steals down ravines—it rushes down deep-furrowed gullies. Well up in the hills the burn had been blocked by a concrete swimming pool; when it emerges the brook that was finds but brief respite before it plunges into the grip of some three hundred yards of rigid, dungeon-like tunnel under a stadium. Then the creek must fight its way through a choking, inert conglomerate of yellow clay and detritus before it again subjects itself to the repression of a second tunnel, substituted for the plank bridge of old. Continuing, it squirms past one building after another, thrown out of its former bed here, allowed to remain all but throttled there. Repelled by the unyielding angularity of the Union, it dives under a cinder track, suffers the intrusion of gas pipes, water pipes, steam pipes, all specie of pipes, until, finally crushed by the ponderous majesty of Sather Gate and the crass vulgarity of Harmon gymnasium viewed from the rear, Strawberry Creek wearily wanders to the edge of campus, where it hopelessly resigns itself to the inevitable and is promptly snapped into the gaping maw of the Berkeley sewer.[29]

This bleak description stands in stark contrast to this romantic portrayal from twenty years earlier:

> North-Fork is a stream of perpetual shade—a veritable tangle of wild rose and blackberry, of laurel and creek willow, with here and there a sentinel oak. Brush aside a web of creepers, and your reward is a wealth of fern, scarlet columbine, and thimble-berry blossom. Where North Fork leaves the grounds is the spot where, one hot summer, Mexican Jose turnt the creek upside down in search of gold. There is gold along this creek, it is true, but it is the gold of beauty. . . . Strawberry Canyon is the most frequented tramp in Berkeley, perhaps because one may stroll along the upper creek bed and lose sight of all that reminds him of a town—forget, for a little while, streets, and houses, and gardens . . . and books. Running between the walls of the hill, over a tumbled bed of boulders, and through regular tunnels of oak and laurel and willow, and tangled disorder of creeper and fern, Strawberry Creek has an untamed beauty and waywardness that pleases as no garden or park-land can.[30]

The creek near Center Street, Postcard, circa 1900. *University Archives (UARC PIC 2:144a).*

Eventually, the creek fought back. As the Strawberry Canyon watershed urbanized, the resulting higher-peak winter storm flows caused not only erosion problems, but also

posed a greater risk of flooding to campus buildings and the commercial districts both north and west of campus. Increasingly complex and expensive engineering alterations were made to the creek and the associated storm drain system in attempts to alleviate the flooding problem, first noted in 1904:

> The creek was roaring full along its entire length and the force of the water did much damage to the banks. Many drifting logs were carried down to Oxford Street, where the creek flows into an underground culvert, and did much damage. The North Branch overflowed its banks, the water coming down Euclid Avenue in a torrent swept across the street and down into the channel of the creek.[31]

City officials blamed university grounds personnel for placing logs and other materials in the creek channel as riprap to armor the banks, subsequently these were washed downstream and blocking the culvert inlet, and causing flooding and erosion damage.[32] This directly led to the deepening of the main branch channel upstream of the Oxford Street culvert in 1907.

The culverting of the South Fork beneath the stadium in 1923 resulted in much faster conveyance of storm water onto the campus. The flows now ran through a smooth straight concrete culvert, instead of winding down a rough naturally meandering channel. The following is an account of a winter storm in 1925:

> The soil of our campus took leave of us through Strawberry Creek—or rather what used to be Strawberry Creek. Twas only Thursday that the "deluge" tore away the rocks from one side of the creek and turned it into a huge river. . . . Pessimistic students were predicting the transfer of our Alma Mater to Mount Tamalpais for protection against old Dame Nature. Imaginative frosh hoped heartily for a second Noah's Ark. Said one, "No more shall it be called Strawberry Creek, even though that does sound luscious and lovely—our creek has graduated and may now be called 'U.C. River.'" And then, the "fixers" arrived and waded around in their big rubber boots, replacing huge rocks until our big river became just Strawberry Creek again.[33]

Flooding problems would only worsen in the future. A 1940 winter storm flooded the Northside district due to an obstructed culvert. The same storm caused extensive damage and landslides in Strawberry Canyon, and flooded both Gilman Hall and Stephens Union, ultimately causing $50,000 in damages to campus facilities, mainly in the canyon. The university responded in the usual fashion in the fall of 1940 by building culverts, "grizzly" trash racks, check dams, and "all necessary reinforcements" in the lower canyon area.[34]

In 1951, a larger "Big Inch" creek bypass culvert was built starting in the canyon just above the Strawberry Canyon pools, following Rimway around the stadium, and emptying out next to the Faculty Club on campus. The "Big Inch" was built at a cost of $225,000 due to the possibility of structural failure of the original "Little Inch" culvert. Cracks were discovered in the old culvert caused by displacement along the Hayward fault zone.[35] The failure of the culvert under the stadium would later combine with the failure of an adjacent sanitary sewer line to cause serious sewage contamination of the creek during football games.

From the 1940s through the 1960s, the Radiation Laboratory (now Lawrence Berkeley National Laboratory, LBNL) was extensively developed on the steep hills north of Straw-

berry Canyon. The upper reaches of the North Fork and numerous seasonal tributaries were culverted and incorporated into the laboratory's storm drain system. Radiation Lab buildings and roadways created large volumes of storm water runoff which was conveyed rapidly downhill into both the North and South Forks, resulting in significantly larger peak flows and higher flood stages downstream. The lag time (interval between peak precipitation and peak runoff in the creek) was reduced from about two hours for rainwater to run off the hills, down to just fifteen minutes. Storms that were easily handled by the creek in the past now posed a potential threat of severe erosion and flooding.

It did not take long for these threats to become reality. In April 1958, rains caused $70,000 of damage to canyon roads and storm drain systems: International House was flooded and landslides blocked parts of the Radiation Lab and fire trails in the canyon. Only four years later in October 1962, fifteen inches of rain fell over four days, one of the heaviest storms ever recorded in the San Francisco Bay area. The "Big Inch" bypass culvert was clogged with debris, causing the torrential South Fork to flow into the Strawberry Canyon pool complex, down Centennial Drive and right through Cowell Hospital and International House. Mudflows closed roads and filled the pools. Damage to campus buildings and grounds was estimated at over $200,000. In 1964, the university spent $519,000 on extensive storm drain and creek "improvements" to alleviate flooding problems.[36]

In 1966, the university extended the "Big Inch" bypass culvert further upstream to an earthen retention dam built in Strawberry Canyon, at the entrance to the lower fire trail, across from the poultry area. The "Big Inch" culvert now travels 4,300 feet to its outlet at the Faculty Club. The dam and retention basin would store flood waters during winter storms and regulate flow into the culvert by means of a hydraulically operated gate, thereby preventing recurrence of the extensive flooding damage that occurred in 1962. Also, in 1966, a high flow bypass was built into the city's storm drain system on the North Fork to relieve the flooding threat caused by increased runoff from Lawrence Radiation Laboratory in the hills above Northside. These storm drain improvements were done at a cost of $145,000 shared by the city and university.[37]

The culverting, re-engineering of the upper reaches of the creek into an artificial storm drain and flood control system, and numerous channel alterations of the open lower reaches were all completed in 1966. Not coincidentally, urbanization of the creek's watershed was also essentially complete, although there would be continuing incremental development in the canyon over the next thirty years.

The rise of the environmental movement and ecological awareness in the late 1960s and 1970s did not seem to translate into any campus action or improvement in the creek's condition. Perhaps the turbulent

Strawberry Creek, date unknown. *University Archives (UARC PIC 2:113).*

campus protests of that era preoccupied both students and faculty alike. With a decidedly resigned tone the general ills of urbanization are outlined in a 1973 article in the *Daily Californian*, "Strawberry Creek's Troubled Waters":

> For years Strawberry Creek has given campus passersby refreshing moments of tranquillity, but recently its natural beauty has been compromised by the demands of an urban environment. . . . Though Strawberry still has the serenity of long ago, it has undergone a sort of identity crisis. The cement banks and dams, the impure water and the excessive number of people are common complaints. . . . Though once a natural creek bed, Strawberry Creek is now part of an urban area. Planning needs have forced control of its path and flow. . . . Numerous storm sewers also empty into the stream, contributing dirty wash waters to the creek. . . . The natural absorbency and filtrating action of the soil on campus is prevented because of the acres of asphalt surrounding the stream. . . . Years ago, days of heavy rain would have been necessary to flood the creek. Today a few hours of moderately heavy rainfall can transform the placid creek into a turbulent storm sewer. . . . The winter flooding which intensifies bank decay causes further concern. . . . More stable materials, like cement, must often be used because the dirt will not hold. Another problem—one that most people have come to expect by now—is that of pollution.[38]

In 1981, city health department officials warned that the creek was polluted by sewage, urban runoff, and chemicals dumped into storm drains:

> Strawberry Creek is badly contaminated. . . . The creek may, at any moment, be filled with sewage or chemicals. . . . "Strawberry Creek is readily accessible–anything can go in it." . . . The stream is contaminated by dogs, the wash from streets and cars, and citizens who empty chemicals and sewage into the creek. . . . coliform bacteria has been found in the creek, indicative of sewage pollution. . . . The creek's contamination is the result of the attitude of people who use the stream. . . . It's treated as a sewer by people. [Campus Environmental Health and Safety] conducted a study of the contamination of Strawberry Creek several years ago and made an effort to clean up the creek. . . . In the past, EH&S has sampled the creek every couple of months in response to specific requests, but has never seemed to find the source of spills. . . . EH&S has no regular creek sampling planned. . . .advice to those who live, work, and study around the creek: "Look at it. Don't go in it."[39]

So Strawberry Creek lapsed into a steady state of benign neglect, until various forces serendipitously came together in 1987 to begin the restoration and revival of Berkeley's beloved and storied creek.

ENDNOTES

1 Personal communication from Professor Kent Lightfoot, Department of Anthropology, July 1999.

2 *Berkeleyan*, December 8, 1885, 64.

3 Samuel Hopkins Willey, *History of the College of California* (San Francisco: Samuel Carson & Co., 1887), 36-37.

4 Ibid., 106-107.

5 Ibid., 172.

6 Ibid., 199-200.

7 *Berkeleyan*, January 20, 1896, 1.

8 *Daily Californian*, June 28, 1906, 1.

9 *Berkeleyan*, September 29, 1877, 7.

10 *Berkeleyan*, September 23, 1895, 2.

11 *Berkeleyan*, February 1882, 12.

12 *Berkeleyan*, October 23, 1882, 13.

13 *Berkeleyan*, November 6, 1882, 12.

14 *Daily Californian*, October 11, 1904, 1.

15 *Daily Californian*, October 18, 1907, 2.

16 *Daily Californian*, February 13, 1925, 1.

17 *Berkeleyan*, April 23, 1883, 12.

18 *1887 Blue and Gold*, 13 (1886), 210.

19 *Daily Californian*, September 17, 1907, 3.

20 *Daily Californian*, August 27, 1928, 2.

21 *Daily Californian*, January 30, 1934, 2.

22 *Daily Californian*, February 28, 1964, 11.

23 *Daily Californian*, February 23, 1922, 1.

24 *Daily Californian*, August 31, 1923, 8.

25 *Daily Californian*, April 12, 1922, 1.

26 *Daily Californian*, January 15, 1923, 1.

27 *Daily Californian*, April 3, 1923, 2.

28 *Daily Californian*, October 4, 1923, 8.

29 *Daily Californian*, November 8, 1923, 6.

30 *1903 Blue & Gold*, 29 (1902), 3-4.

31 *Daily Californian*, March 11, 1904, 1.

32 *Daily Californian*, March 15, 1904, 1.

33 *Daily Californian*, February 16, 1925, 6.

34 *Daily Californian*, November 1, 1940, 4.

35 *Daily Californian*, March 1, 1951, 10.

36 *Daily Californian*, November 2, 1964, 10.

37 *Daily Californian*, October 31, 1966, 9.

38 *Daily Californian*, July 2, 1973, 6.

39 *Daily Californian*, November 2, 1981, 1.

Co-ed Canyon (Faculty Glade), 1904.
University Archives (UARC PIC 200:25).

STRAWBERRY CREEK II

RESTORING THE CREEK, 1987–1989
A PERSONAL PERSPECTIVE

Robert Charbonneau

This is a personal account of the urban stream restoration project on Strawberry Creek that I coordinated in the late 1980s. It summarizes the major activities and the key people responsible for the project's ultimate success, highlighted by the reintroduction of native fisheries in the creek following a century's absence. For a more technical discussion of the project, please refer to the scientific journal article on the subject.[1]

BY THE 1980S, STRAWBERRY CREEK HAD BECOME a typically neglected urban stream. Its troubled waters were polluted with street runoff, chemicals, and raw sewage. Many aquatic organisms and native plants had nearly disappeared from the creek and along its riparian corridor. Recurrent winter flood waters undercut stream banks; cement banks and dams, built to fight erosion, detracted from the creek's natural beauty. As the creek's ecological and aesthetic qualities continued to deteriorate slowly, the campus displayed a dismaying lack of knowledge or concern.

In May 1985, a concerned group of faculty representing the natural and environmental sciences complained in a memo to Professor Calvin Moore about the degraded condition of the creek. They stated that the creek was polluted, partly by campus discharges, and called for a comprehensive study of the entire watershed to identify all sources of pollution. The group offered the research assistance of students and faculty, and noted that "if we ignore the pollution in Strawberry Creek, the University may find itself in an embarrassing and costly situation. A great University should not have running sores on its land."[2]

Professor Moore recommended to the Campus Planning Office that an advisory committee be formed to deal with creek environmental quality issues. In September 1985, the Environmental Health and Safety Office (EH&S) followed up on the faculty memo, concluding that dogs were responsible for the high fecal bacteria counts in the creek, and that trace heavy metals were originating from street runoff. EH&S reviewed its own files and reported that a comprehensive sanitary survey to locate and reroute sewer lines draining from campus buildings into the creek was successfully completed in the early 1970s, leaving only storm drains to empty into the creek.[3] The administration's conclusion that unleashed dogs were responsible for bacterial contamination of the creek outraged even the most conservative natural sciences faculty and galvanized their support for the restoration of Strawberry Creek.

In fall 1985, EH&S committed to "examining some long-range solutions" to the polluted creek because of the potential "significant health hazard."[4] In March 1986 Luna Leopold, chair of the geology department, complained of the creek's condition to the campus Hazardous Waste Management Committee, stating that "in the last decade, all studies with which I am familiar have shown that the stream is polluted to the point that no insect life grows on the bed of the channel." Leopold recommended that EH&S perform water quality sampling and sanitary engineering investigations to identify specific point-sources of pollution on campus.[5] Finally, in

June 1986 the EH&S associate director reviewed Strawberry Creek files and recommended the development of a master plan and various sanitary engineering remedies.[6]

Around the same time, I packed my bags in Massachusetts and headed for Berkeley to work towards my master's degree in environmental planning in the College of Environmental Design. I had received my B.S. degree in environmental sciences with a concentration in water pollution biology from the University of Massachusetts at Amherst and since 1980 had gained valuable experience working on dozens of stream and lake water quality studies and projects.

Restoration Project Inception

Near the end of the fall 1986 semester, I went to the campus EH&S office to try to find gainful employment, because I had previously worked for EH&S at the University of Massachusetts. As my savings dwindled, I was motivated to accept the only student work-study position available in the industrial hygiene program. Over the next several months, I visited every campus laboratory and in the process got to know the campus buildings and grounds in excruciating detail.

Early in the spring 1987 semester, I spoke with EH&S Associate Director Ben Gonzales about potential topics for my master's professional report (an applied version of a thesis). Ben told me about several hazardous-materials-related options but mentioned as an afterthought, "Then there's always Strawberry Creek." So inadvertently I began a project that would consume much of my life over the next two and one-half years.

In March 1987, EH&S management applied for a $15,000 Business and Administrative Services (BAS) opportunity grant to work on Strawberry Creek. Ben Gonzales and Director Elaine Bild's unwavering administrative and political support would be essential throughout the project. Dan Boggan, the administrative vice chancellor, soon approved the BAS grant, although I had already commenced initial research on the project.

During the spring of 1987, I met several staff and faculty who would prove instrumental in the future success of the restoration project. No one would be more essential or supportive than Sonja Biorn-Hansen, the facilities department engineer who oversaw all underground utilities systems and associated deferred maintenance projects. Sonja would become a trusted colleague and formidable ally over the next few years. I also soon met Vince Resh, an enthusiastic entomology professor with a passion for the creek, who became my closest academic advisor and strongest faculty supporter.

Sanitary Engineering and Water Quality Studies, Spring 1987

I spent most of spring 1987 reviewing and compiling existing information and gaining an understanding of the creek and its canyon watershed area. The storm drain system map was quite outdated; because many parts of the campus utility infrastructure were over fifty years old, anything was possible in terms of how drainpipes had been connected and what eventually emptied into the creek. Over one hundred drainpipes were located on the banks of Strawberry Creek on the central campus. It would take over a year to determine where all these pipes originated. Both the storm drain and sanitary sewer system maps had to be completely updated and revised. Sometimes this would require crawling through large culverts with a flashlight and map, armed with a baseball bat to ward off unhappy rodents.

After much time-consuming and laborious sanitary engineering work, Sonja and I determined that there were multiple problems with both the storm and sanitary sewer systems due to their age and condition. Acting on a faculty complaint about sewage contamination from the stadium, we dye-tested the bathrooms and sampled the South Fork of Strawberry Creek before, during, and after football games. We found massive bacterial contamination in the creek during

half time and immediately after games, as stadium toilets were flushed thousands of times. A broken sewer line beneath the stadium was flowing into an adjacent broken storm drain line, sending raw sewage spewing out into the creek. Sonja soon undertook an extensive sewer system rehabilitation project to fix the stadium infrastructure damaged by movement along the Hayward fault zone.

We discovered several other sewer leaks, none more puzzling than one contaminating a storm drain coming from Harmon Gymnasium. We dye-tested all of the drains and bathrooms in the gym but uncovered no problems. Following the storm drain line up from the gym, we traced the source to the Bear's Lair pub bathrooms, which had been retrofitted into the student union building several years earlier. The plumber had incorrectly tied the pipes into a storm drain line coming down from the roof drains, instead of into the adjacent sanitary sewer line, allowing raw sewage to drain directly to the creek. This certainly validated Murphy's Law and reinforced the need to be thorough and vigilant in our investigations.

Evaluating the campus sewer system for breaks and cross-connections sometimes resulted in surreal experiences. We often used fluorescein, a non-toxic fluorescent green dye, for tracer and flow tests. On more than one occasion, the creek turned day-glo green as a result of our dye tests. One day, a facilities worker inadvertently added too much dye to a sewer manhole, not only turning the creek fluorescent green, but a significant portion of the bay as well. The coast guard was alerted and responded, but by then the plume had spread out over such a wide area that they were unable to find its source.

During the summer of 1987, I conducted comprehensive ambient water quality sampling of both the north and south forks, covering the headwaters in Strawberry and Blackberry Canyons as well as the upper and lower ends of the creek on the central campus. Ben Tamplin, director of the state's sanitation lab in Berkeley and a Cal alumnus, agreed to analyze all of the creek samples for a wide range of water quality parameters on a pro bono basis, saving a significant amount of money as well as assuring quality control on the analytical results. These cost savings allowed us to contract with a commercial environmental laboratory to sample and analyze all campus point-source discharges (effluent from continuously flowing drainpipes).

These ongoing sanitary engineering and water quality investigations continued to uncover problems. Over the next two years, various sewer leaks were repaired and discharges rerouted to the sanitary sewer. Today, the campus facilities department continues to fix sewer leaks as soon as they are discovered, and diverts minor drains to the sanitary sewer system whenever possible. We also worked with the facilities department to improve street sweeping and catch basin cleaning in an attempt to mitigate urban storm-runoff pollution. The water quality of the creek improved dramatically. Macroinvertebrate (aquatic insect) surveys, a widely used biological indicator of environmental quality, showed the creek improved from "poor" to "good" condition.

The Creek Committee

In October 1987, Sonja Biorn-Hansen and I made a presentation to Vice Chancellor Boggan and his BAS directors, discussing the results of the initial creek study and recommendations for restoration, with an emphasis on the value of the creek to the campus. Boggan enthusiastically received the presentation and committed his support for restoration of the creek. In November 1987, the vice chancellor officially established the Strawberry Creek Environmental Quality Committee, a chancellor's advisory group composed of faculty, staff, and students.

Joe McBride, chair of the Department of Forestry and a respected campus environmental advocate, was the first committee chair. Other faculty originally included Vince Resh (entomology) and Bob Twiss (landscape architecture). Campus staff included Sonja, EH&S personnel, the campus landscape architect, and me as the student representative. Soon after, the campus grounds

manager, a campus environmental planner, and a botanical garden staff member were added. Eventually, liaison representatives from the city of Berkeley (director of Parks and Recreation) and the Lawrence Berkeley Laboratory (EH&S director) joined the committee because both the city and the laboratory controlled portions of the upper watershed, mainly along the North Fork.

This committee proved invaluable in cutting through the red tape associated with these three bureaucracies and allowed work to proceed relatively unhindered by political obstacles and squabbles. Sonja served a pivotal project management role while providing engineering expertise and access to deferred maintenance funding. The committee agreed upon an ambitious set of goals: enhance the teaching and research value of the creek; restore ecological integrity of the creek to the greatest extent possible; provide innovative examples of urban creek restoration techniques through demonstration projects; and preserve and enhance the creek as both a campus and city amenity.

By fall 1987, I had essentially completed the initial water quality study. However, in order to formulate a truly comprehensive creek management plan, the scope expanded into broader areas of watershed management, urban stream restoration, and environmental education. I finished the first draft of the Strawberry Creek Management Plan by January 1988. After graduating in the fall of 1988, I became a full-time EH&S staff member, responsible for implementing my plan.

Cribwall, 1988. *Courtesy of Vincent Resh.*

Erosion Control

In 1988, restoration activities began and continued in earnest for almost two years. Many stream banks and structures along the creek were near collapse from lack of maintenance and relentless erosion. Sedimentation threatened the health of the creek's biota and habitat. In the spring of 1988, Philip Williams and Associates, a local hydrology firm, analyzed erosion and bank stabilization options, prioritizing and recommending sites along the creek for repair and stabilization of stream banks, check dams, retaining walls, and utility overcrossings. Over the next

year, we used a combination of private contractors and the California Conservation Corps to do erosion control work on campus and in Strawberry Canyon.

Plantings in cribwall. *Courtesy of Vincent Resh.*

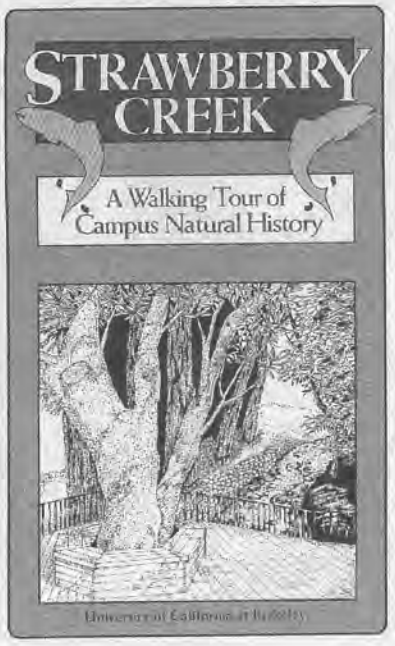
During the summer of 1988, we worked on a major project opposite Stephens Hall, where the creek was eroding a high vertical creek bank, collapsing the lawn and undercutting the bridge supports. Instead of installing a conventional concrete retaining wall, we decided to try a biotechnical approach—a redwood cribwall. The cribwall combined native vegetation and redwood logs, forming an integrated structure more durable, cost-effective, and environmentally compatible than a concrete wall.

The designing engineer specified redwood logs at least twelve inches in diameter. We specified this minimum size in our bid specifications to Bay Area lumber companies, envisioning telephone-pole size logs. When the over-sized big rig from the Santa Cruz mountains rumbled onto campus with our load of logs, we were shocked. The logs were a foot thick at the top and some were nearly three feet at the base! Luckily, our contractor was able to conceal the large ends by burying them about 15 feet into the bank as tieback logs. The cribwall was backfilled with soil to provide strength, weight, and a place for plants to grow. Later planted with a wide variety of native vegetation by faculty and student volunteers, today the cribwall appears quite natural and aesthetically pleasing. Due to extensive plant roots, this bank will remain stable after the cribwall logs rot out.

Further downstream, adjacent to the 1935 Student Glade just east of Sather Gate, we modified the inlet to a high-flow bypass structure, restoring a natural stream channel meander that had been cut off and left dry since the bypass was constructed in the 1960s.

Environmental Education

Environmental education was a major focus of the restoration project; raising awareness of the creek and changing campus attitudes would be crucial to our long-term success. Our target audiences included students, staff, Northside residents, and the general public. I gave many guest lectures on the creek to classes in landscape architecture, biology, planning, forestry, environmental



1990 booklet.

science, and conservation resource studies. I also gave presentations at professional meetings and conferences and to campus administrative departments. Vince and I led numerous walking tours of the creek and canyon watershed for classes, conferences, and docent and staff groups. We also created the booklet "Strawberry Creek—A Walking Tour of Campus Natural History," which was extremely popular with over 10,000 copies distributed. We are currently completely revising it, and EH&S hopes to print 10,000 copies of the second edition this spring.

In 1989, we embarked on two major public education campaigns. The first was an idea we borrowed from an urban stream restoration group in Seattle. We designed a curb stencil that read "Dump No Waste—Drains to Creek" around a playful fish logo. To the best of my knowledge, we were the first in the Bay Area to spray-paint these stencils on curbs next to gutter storm drains and eventually on all campus drains. We also got permission from city public works to paint these stencils on storm drains in the Northside district. Similar curb stencils can now be seen in cities all over the country. In 1988, Sonja and I participated in the founding of a grassroots citizens group (Berkeley Citizens for Creek Restoration) that would later stencil drains located above each culverted creek in Berkeley with its own distinctive ecological symbol and the name of the creek.

The second major public education effort was a mass informational mailing to all Northside residents and businesses located within Strawberry Creek's North Fork watershed area. As part of this cooperative effort with the city, a cover letter was jointly signed by Vice Chancellor Boggan and the city manager informing people how to be environmentally friendly watershed residents. This may be one of the few times that both high-ranking university and city officials jointly endorsed a public letter.

Courtesy of Vincent Resh.

In March 1989, the committee collaborated with the city and Berkeley Citizens for Creek Restoration to sponsor Spring Creek Week, a weeklong series of events held around the campus and city. Activities included planting native vegetation along the creek, lectures, receptions, dance performances in Faculty Glade, walking tours, and environmental art installations around campus. The week ended with storytelling, a dance performance, and a community potluck at Strawberry Creek Park in West Berkeley, where the creek had been daylighted out of its culvert in the mid-1980s as the urban park's centerpiece.

Later in 1989, we assisted the university's Botanical Garden with the funding, design and layout of a creekside trail, a watershed overlook deck, and interpretive displays in the lower part of the garden. The garden later celebrated the completion of these projects with a Creek and Watershed symposium in 1990. The garden became the focal point for environmental education about the creek headwaters and its upper canyon watershed.

The author leading a creek walk. *Photograph by Allen Stross.*

Restoration of the Native Fish

Our restoration efforts culminated in May 1989, when we reintroduced native fish into the creek for the first time in over a century. Fisheries likely disappeared from the creek after the University of California relocated to Berkeley in 1873, diverted the creek in Strawberry Canyon for its water supply, and dumped raw sewage until the turn of the century when sewers were built. Obstacles such as check dams and culverts were installed beginning in the 1870s. These actions resulted in very low stream flows, poor water quality, habitat destruction, and barriers to fish migration, which all led to the disappearance of fish in the creek.

The initial 1987 creek study used bioassays with two sensitive aquatic organisms (fathead minnows and a crustacean) to study the feasibility of restocking fish. When these clinical observations indicated it was theoretically possible, restoring native fisheries became a priority and an important symbolic goal of the project.

Campus ichthyologists helped me to identify likely native fish species and their nearest present-day sources. The creek committee initially nominated trout, but then dismissed them as non-native and potentially risky in terms of suitable habitat and water quality conditions. We eventually decided to stock with three-spined sticklebacks, a small native, hardy fish able to live in disturbed habitats. As a bonus, the sticklebacks were interesting to study and observe from a teaching standpoint, and their prominent dorsal spikes made them such an attractive icon that the fish's image eventually found its way onto the cover of student orientation booklets and T-shirts.

With the cooperation of East Bay Regional Parks District biologists, we collected sticklebacks from Wildcat Creek, and released about a hundred into Strawberry Creek with accompanying publicity including local television and radio coverage. We were anxious for a few days, but the fish did well, and no mortality was observed. Interestingly, the sticklebacks have since been displaced by two species of native minnows (California roach and hitch) stocked later, which proved to be better adapted to living in the creek. The sticklebacks, flushed downstream during winter storms, are now abundant around the Berkeley Marina near where the creek enters the

San Francisco Bay. The minnows are still doing well and continue to spawn each summer. Early in 1991, snowy egrets were observed foraging for fish in the creek for the first time in memory. We are hopeful that over time other native animals will return to the creek and its recently bolstered ecosystem.

Parting Thoughts

An incredible amount of progress was made for Strawberry Creek in a relatively short time, more amazing given the bureaucratic nature of such a large institution as the university. This rapid progress was mainly due to the hard work and dedication of the many people directly involved in the project but would not have been possible without the political support that allowed us to do the work.

Strawberry Creek reflects the urban conditions of its watershed. Unfortunately, we are bound by the constraints that over a century of development has forced upon both the creek and us. The creek will always serve as the storm drain system for the watershed, and human carelessness and accidents will inevitably result in sporadic spills and releases into the creek. Extensive development in the watershed has permanently altered the creek's hydrology, creating "flashy" flow conditions. Channel alterations and obstacles, such as check dams, limit the creek's available habitat and create barriers to fish migration. Moreover, the environmental quality of this urban creek cannot be sustained without constant vigilance and regular maintenance.

Periodic re-education of campus staff and contractors is needed to maintain awareness about the creek and activities that can adversely impact it. However, we achieved the goals set forth at the start of the restoration, and the project is widely considered a success. The creek is certainly much healthier than it was. Our greatest accomplishment may be that attitudes towards the creek have changed, and awareness has been heightened. Now, when spills occur in the creek, campus officials receive multiple reports, in contrast to fifteen years ago when no one would have even noticed. I sincerely hope that many years from now I can revisit the creek and admire the descendants of the native fish we have reintroduced.

ENDNOTES

1 Robert Charbonneau and Vincent Resh, "Strawberry Creek on the University of California, Berkeley, campus: A case history of urban stream restoration," *Aquatic Conservation: Marine and Freshwater Ecosystems* 2 (1992), 293-307.

2 H.V. Daly, College of Natural Resources, memo to Calvin Moore, "Some preliminary information and thoughts on pollution in Strawberry Creek," May 2, 1985.

3 "Strawberry Creek Water Quality Issues," EH&S internal memo, September 12, 1985.

4 Don Erman, Associate Dean of College of Natural Resources, memo to EH&S Director, October 15, 1985.

5 Chairman Luna Leopold, Department of Geology and Geophysics, memo to EH&S Hazardous Waste Management Committee, March 19, 1986.

6 Ben Gonzales, EH&S Associate Director, memo to James Brown, Director, "Environmental Quality of Strawberry Creek," June 10, 1986.

THE CAMPUS CONSERVATORY

William Roberts

THE BEGINNINGS OF THE BOTANICAL GARDEN go back to the 1870s, with the appointment of Eugene W. Hilgard as professor of agriculture and agricultural chemistry. Hilgard called for the "continuation and expansion of the experimental cultures on the grounds assigned to the department on the university campus, and the establishment of a garden of economically important plants, both for experiment and for the instruction of classes by actual demonstration and exhibition of the growing plants."

Formal and permanent instruction in botany was not established until 1890, however, with the appointment of Edward L. Greene, who almost immediately began to plan for a garden of native trees, shrubs and herbaceous plants native to California, which would complement Hilgard's "Garden of Economic Plants."

Within a few years there were as many as 1,200 plants in the university's garden, which occupied the swale north of the site of Doe Library, but propagation facilities on the west side of the north branch of Strawberry Creek were limited to small wooden sheds which had become highly inadequate.

In 1893 the regents approved a motion to build a new plant house, later referred to as the Conservatory, designed by Lord and Burnham of Irvington, New York. The new building was to have an interior area of some 6,000 square feet, and the central portion, the Palm House, was forty-five feet square with a height of forty-two feet. Construction was completed in 1894 at a cost of $20,000, on a site just north of the Botanical Garden, the present location of the Haviland

South and east façades of the Conservatory in 1900, with Botanical Garden plantings in the foreground. *University Archives (UARC PIC 10C:3).*

Hall parking lot.

The four leading purposes of the new building were to support instruction in horticulture and botany; to provide for the introduction, multiplication, and trial of economic plants; to afford facilities for exact experimentation in plant growth and nutrition; and to serve as a laboratory for the study and experimentation in entomology and vegetable pathology.

Several factors contributed to the razing of the building in 1924. Building Haviland Hall necessitated road access; the Conservatory itself had proved inadequate and more extensive greenhouse facilities were built in the northwest corner of the campus; and the planned move of the Botanical Garden to Strawberry Canyon cut the connection between the Conservatory and the garden. Although never as much of a public showplace as its counterpart in Golden Gate Park, it was nevertheless a unique feature of a bygone era of campus history.

Interior of the Palm House, forty-two feet high. *University Archives (UARC PIC 10:14).*

View of the Conservatory from the south end of California Hall, 1917. *University Archives (UARC PIC 3:135).*

THE FARM AND GARDEN PROJECTS AT THE UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Martha Brown

Alan Chadwick's garden is a "garden of the mind" as much as it is of the soil, and like all genuinely inspired creations it has the power to stir us to new dreams, to a new vision of what man and nature can do, together.

—Page Smith

THE UNIVERSITY OF CALIFORNIA IS WELL KNOWN for its contributions to agriculture: the land grant universities are recognized worldwide for research in such fields as plant breeding, integrated pest management, and livestock care. Perhaps less well known is a project that started on the UC Santa Cruz campus in 1967, when legendary English gardener Alan Chadwick broke ground for a student garden.

In their own unique ways, the UC Santa Cruz Garden Project (now the Alan Chadwick Garden) and the UC Santa Cruz Farm have nurtured a different approach to horticulture and agriculture—an approach that emphasizes exacting soil and plant care, resource conservation, working with and respecting nature, and finding the ecological basis for sustainable food production. This was the first University of California effort to focus on sustainable agriculture, commercial organic production methods, and the social issues associated with developing a sustainable food system. Under the auspices of the Center for Agroecology and Sustainable Food Systems (formerly the Agroecology Program), both the Farm and the Garden continue to combine tradition and vision as students, staff and faculty search for environmentally and socially sound methods to produce and distribute crops.

English master gardener Alan Chadwick in the Student Garden Project (now the Alan Chadwick Garden), 1972. *Courtesy of UCSC Photography.*

This article presents a brief history of the Santa Cruz Garden, Farm, and Center for Agroecology and Sustainable Food Systems. Given the more than thirty years which this history covers, it is by no means a definitive effort, but is offered with the hope that readers—especially those unfamiliar with the Farm and the Garden—will gain some sense of the contributions these projects have made. One could argue that "only in Santa Cruz" could they have taken root and thrived, in a time and place that encouraged new ideas and

innovative approaches to learning.

UC Santa Cruz's garden was sown in an era of both political and physical turmoil. As bulldozers reshaped the Cowell Ranch meadows and forests for campus building sites, students sought "a sense of place" at the fledgling university. In 1966, a conversation between visiting professor of history Donald Nicholl and his office-trailer mate, philosophy professor Paul Lee, sparked the idea of creating a garden to offset students' feelings of displacement and disruption. "It was a time of obvious destruction," recalls Jim Nelson. "The Vietnam war was raging, the world seemed preoccupied with artificiality and contrivance—students were hungry for something new that would help foster change, love of the earth, positive things."[1] Developing a garden was seen as a way to bridge some of the gap between the natural and the artificial.

The idea found enthusiastic support from Chancellor Dean McHenry, who smoothed the way for an agricultural effort on the new campus. In one of those chance events that has now passed into legend, a Bavarian countess provided the link between the university and the gardener who would leave his indelible mark. Countess Freya von Moltke visited the campus in 1966 with her friend Oegain Rosenstock-Huessey, a mentor of UC Santa Cruz founding faculty member, Page Smith. The garden idea came up in conversation, and it was von Moltke who made the connection to Alan Chadwick. She had met Chadwick in South Africa, where he'd gone after World War II to start a theater company and to design a national display garden.[2]

Chadwick was reluctant to take on the task. "Alan was in his fifties, a failed Shakespearean actor—failed in the sense that he'd never met with any great success on the stage—and suffered a great deal from his back, which he injured during the war," recalled Page Smith in a 1992 interview. "He was looking for a place to live out his life in relative comfort. But Freya said to him, 'Alan, you must make a garden here. This is your mission.'"[3]

Persuaded by von Moltke, Chadwick arrived in Santa Cruz in the winter of 1967. It was an exciting time at the university system's newest campus. Competition for admission was fierce, as students sought to take part in an academic setting that encouraged experimentation and creativity. Anthony Mohr, a member of the "pioneer class," remembers that, "we created our own traditions, rhythms, and boundaries. We barred competition. There were no grades, no rank in class. . . . No athletic teams existed beyond informal groups. We governed by town meetings. . . . Fraternities were banned."[4] Against this backdrop, and accompanied by Chancellor McHenry and a group of students, Chadwick toured the new campus in search of a garden site.

The Garden

Alan Chadwick's choice for the enterprise crossed the line that distinguished the simply challenging from the truly daring: given the pick of the Cowell Ranch's gently sloping, grass- and flower-covered meadows, Chadwick instead staked out four acres on a steep, rocky, chaparral-covered hill between Stevenson and Merrill colleges. "At that time, the hillside was the heart of campus," says Orin Martin, who now manages the Alan Chadwick Garden. "Alan wanted to be in the center of things, and the Garden was the first thing people would see as they drove onto the upper section of the university."[5]

Chadwick set to work on the stony soil with a vengeance, using only the Bulldog spade and fork that Smith & Hawken would one day make popular. Author Robert Howard writes, "For the next two years, without taking a day off, this fifty-eight-year-old man worked from dawn to dusk every day of the week. Those who were there say he worked more heroically than they had ever seen anyone work before."[6] Drawn to the emerging garden and the tall,

lean Englishman, students pitched in to clear coyote brush and poison oak, and amend the paper-thin topsoil with tons of horse manure and other organic materials.

Under Chadwick's often-demanding direction, volunteers hauled limestone from the old Cowell Ranch quarry to build paths and retaining walls, and loosened the rock-hard soil with pickaxes before setting to work digging permanent garden beds. "Those who fell under his spell had generally to put up with a good deal. That so many were willing to do so is the best possible testimony to the power of what he had to teach which was inseparable from the way he taught it and person he was," wrote Page Smith.[7]

A student at work in raised beds of the Student Garden Project, 1971. *Photographer unknown.*

By 1969 the brushy hillside had been transformed. "From thin soil and poison oak had sprung an almost magical garden that ranged from hollyhocks and artemisias to exquisite vegetables and nectarines," says Robert Howard.[8] Chadwick had designed the site as a set of distinct "rooms" reached from a winding central path, with marbled limestone walls buttressing sloping garden beds designed to take full advantage of the sun. "Life appeared on that slope—the hummingbirds, the butterflies, and the birds were always there," says Paul Lee. Wave after wave of tulips, chrysanthemums, tithonia, cornflowers, zinnias, anemones, coreopsis, scabiosa, and other blossoms brightened the garden year-round. "It was a heady period," wrote long-time Garden supporter Louise Cain. "A kiosk supplied daily bunches of cut flowers to anyone passing by. Never have University offices and home dining tables in Santa Cruz been so blessed."[9]

Chadwick introduced a unique approach to gardening, which he called the "biodynamic/French intensive" method. Biodynamics was a movement initiated by Chadwick's former tutor, Austrian philosopher Rudolf Steiner, which according to Chadwick, "refers to total truth—the utmost connection of spirit, mind and body, with horticulture as just one of its facets."[10] "French intensive" reflects the practice of nineteenth-century French market gardeners, who planted their carefully amended and cultivated beds using an "intensive spacing," so that plants touched each other when mature. According to current Garden manager Orin Martin, the biodynamic/French intensive method "synthesized traditional horticulture practices and observations from the Greek, Chinese and Roman cultures on through 19th century French market gardeners—folk techniques with modern scientific validity."[11]

Students were taught how to "double dig" beds, using a spade and fork to loosen the soil to a depth of two spade blades. Chadwick noted that this approach to gardening was nothing new. In a 1974 interview, he explained, "What we call the French intensive method was something picked up by the ancient Greeks. They discovered that all plant life grew better on landslides than on the bountiful, fertile soils of the alluvial plains, where indeed plants grew well, but on landslides they found they grew infinitely better."[12] The double-digging

process mimics the effect of landslides, creating aerated, well drained soil conditions. The garden's carefully tended beds, enriched with compost, bone meal, leaf mold, and other amendments could produce up to four times the abundance of traditionally managed plots from the same space.

Chadwick didn't just strive for quantity. His upper-class upbringing in Edwardian English society had left him with exacting tastes and an appreciation for fine food that he passed on to his young charges. In an era when all supermarket lettuce was iceberg, all potatoes Russet, and apple choices were either red or green, the garden boasted heirloom varieties of vegetables, fruit, and flowers. This was more than two decades before "California cuisine" would make radicchio, purple beans, and fingerling potatoes standard fare on restaurant menus. "It's not much of a stretch to say that Chadwick and those who trained with him were responsible for the interest in distinctive fruit and vegetable varieties that we see today," says Martin.[13]

Rejecting anything synthetic, Chadwick also helped spur the organic gardening and farming movements, with their craftsman-like approach to soil building and plant care. He used organic inputs to enrich the rocky soil and deplored the use of chemical pesticides. He preached composting—"Life unto death and death unto life"—and emphasized the soil's fragility, warning that, "The skin of the Earth must be approached with great sensitivity . . . it is fragile and must be protected."[14]

The techniques worked wonders on the inhospitable hillside. In 1969, *Sunset Magazine* called Chadwick "one of the most successful organic gardeners the editors have ever met. Mr. Chadwick believes that a healthy plant is not likely to be eaten or overcome by pests and his intensive kind of culture is such that the plants do stay in great health." *Sunset*'s editors marveled at the transformation of marginal land into an abundant garden, reporting that, "At times during the peak of the flower season, the students cut and placed ten thousand blooms a day at the help-yourself kiosk on the main campus road. And last year the gardeners grew, picked and supplied the college cafeterias with 1¾ tons of tomatoes."[15]

Those who worked with him found Chadwick a short-fused amalgam of charm and fury. In a 1980 memoriam, Page Smith wrote,

> In an age of "collective leadership" Alan Chadwick was imperious as a King. In a day of carefully modulated and self-conscious "interpersonal relations," he stormed and raged not just at abstractions like laziness or indifference or inattention, but at the poor frail flesh of those who were the destined instruments of his terrible, unflinching will. And then suddenly, the consummate actor for whom all the world was a stage, he would be as sunny, as playful, as irresistible as the prince of a fairy tale.[16]

Despite his mercurial personality, Chadwick found willing listeners. "He was a renegade and a madman, which is probably why young people were so drawn to him," recalls Wendy Johnson, a former Chadwick apprentice.[17] With *Silent Spring*, published in 1962, as a backdrop and the first Earth Day on the horizon, Chadwick's emphasis on working with nature, rather than overpowering it, struck a chord. Some student volunteers began to spend more time in the garden than in the classroom, forming the core of an apprentice group that would eventually be the model for a more formal training program. Beth Benjamin, a freshman in 1967, recalls,

> Alan was simply the most fascinating human being on campus for me. Soon nothing else seemed to come into focus but his garden. I was unhappy

> and doing poorly in my classes, but in the garden I vibrated with the colors and the smells and the stories Alan told us about the plants and his travels and the new skills I was learning. By April I convinced my counselor that I wanted a leave of absence, and I could finally devote my full time to the world of plants. As an apprentice, I worked from dawn until dark and was filled with his dreams and our common task of bringing the garden into reality, breaking new ground and tending what we had already planted. He had flaming temper tantrums, told tales, gave us dinner parties, fed us from his own bread and ham and cheese, threw dirt clods at us and laughed as he hid behind the compost piles. He taught us the joy of work, the discipline to persevere in order to make a dream come true, even when we were hot and tired, and the deliciousness of resting and drinking tea after such monumental labors. . . . I think of Alan almost every day still, 30 years later, and smile with the memories and with gratitude for all he gave me.[18]

The Farm

The garden's success spurred interest in an expanded undertaking. In the spring of 1970, students approved the use of registration fees to help develop a campus farm, where Chadwick's techniques could be tested on a larger scale. Chancellor McHenry added support from his discretionary funds, and in the spring of 1971 the campus planning committee designated fourteen acres of rolling meadow near the west entrance to the campus for the new venture (the farm has since been expanded to twenty-five acres). Steve Kaffka, a former student and "lieutenant" of Chadwick's, was put in charge of the enterprise. Disagreements with university officials over the farm's design and management were in part responsible for Chadwick's leaving Santa Cruz in 1973, when he moved on to start new gardens in Marin County (at the Green Gulch Zen Center), Saratoga and Covelo, California, and New Market, Virginia.

Students monitor temperature and moisture conditions in the Farm's greenhouse, built as a senior thesis project by environmental studies students. *Date and photographer unknown.*

The UC Santa Cruz Farm attracted a fiercely dedicated group of volunteers—many of them former students who had left school to devote full-time effort to Chadwick and the garden, others who had been drawn to the project from outside the university. These self-proclaimed "home farmers" moved onto the farm site, erected tipis, built a rough-hewn "cookhouse," and began to plant windbreaks and fruit trees, lay irrigation pipe, and put in hand-worked vegetable beds.

Following Chadwick's lead, the home farmers rejected the idea of using mechanical implements to develop the farm. They tried plowing with draft horses, and directed by Brian Barhaugh, built a large barn using hand-hewn lumber and Amish-style joinery techniques that relied on wooden pegs rather than nails (the barn is still used for equipment storage). However, after a year, most of the home farmers moved to Arkansas to homestead their own land.

Under Kaffka's direction, the farm found a ready audience among students interested in pursuing projects ranging from alternative energy to soil ecology. Still a relatively young, experimental campus, UC Santa Cruz was open to nontraditional courses, student-developed classes, and independent studies. A group of students championed the idea of a Farm Center that would serve as a dining hall and teaching facility. Campus architect and lecturer, Chuck Kahrs, led a special class to work on the plans. Greg Smith, a young designer and builder, gave months of his labor both to the task of building and to teaching student volunteers who worked two summers with hammer and nails. The result was a beautiful, airy redwood building dedicated in 1976, which continues to serve as a focus of on-farm life.

1999 view of farm. *Photograph by Janet Ruyle.*

The energy crisis sparked other student projects. Physics professor Peter Scott offered a course in "Practical Physics," using the farm as a demonstration site. Students built wind generators, solar-operated food dryers, composting toilets, and a solar shower (since refurbished and still in use). Others enrolled in classes taught by Kaffka to learn the basics of organic soil management and food production.

Professor of environmental studies Stanley Cain and his wife Louise Cain, founder of the Friends of the UCSC Farm and Garden, at the dedication of the Louise Cain Gatehouse. The Gatehouse was built with funds and labor donated by the Friends to serve as a visitors center and classroom, 1984. *Courtesy of Joan Ward.*

Although student and volunteer energy and a small, paid staff helped maintain the farm and garden and push through projects such as the Farm Center, the sites needed a year-round, on-site work force if they were to develop and thrive. At the same time, students were interested in getting a more in-depth, hands-on experience than was available through a regular ten-week class. In 1975, thanks to the efforts of Louise Cain (wife of environmental studies professor Stanley Cain), a year-long course for students seeking intensive training in organic gardening and farming techniques ("Apprenticeship in Ecological Horticulture") was developed and offered through UC Santa Cruz's extension program. The apprenticeship provided a more formal educational opportunity and helped address the need for a committed group of on-site workers, but Chancellor McHenry's retirement in 1974 forced Farm and Garden supporters to face the challenge of finding continued funding and an administrative "home" for the projects. Fortunately, several distinguished environmental studies professors, including Stanley Cain and Kenneth Norris, stepped forward to champion the Garden and the Farm. In May of 1976 the faculty of College 8 (which included most of the environmental studies faculty) voted unanimously to undertake academic sponsorship as an adjunct to the college.

The facilities became part of an expanded natural history curriculum. Norris wrote:

> Natural history is the study of the natural world from a holistic viewpoint, the learning of her rules and processes. At the Farm and Garden, the care of the soil, the concern that natural systems be understood and guarded, and the oneness of people with the earth that supports them form the philosophical basis for their functioning. This is "applied natural history" in its finest sense. Our academic scope for natural history at Santa Cruz is thus immeasurably broadened by our new association with the Farm and Garden program.[19]

Student interest in the Farm and Garden grew as the new academic focus brought more opportunities at the sites. In 1978, environmental studies professor Ray Dasmann reported:

> The UCSC Farm and Garden have become an increasingly important field laboratory for the academic program in environmental studies during the past year.
>
> Starting in the winter quarter, 1978, the first course in ecodevelopment was based at the Farm Center as the most suitable facility for a course concerned with the application of appropriate technology and ecological prin-

> ciples to the problems of ecodevelopment. Not only does the Farm demonstrate the success of labor intensive, small scale food production, but it has also provided the locale for most of the appropriate technology applications that have been carried out at UCSC. . . . a student-directed course on The Natural History of the Farm and Garden attracted far more students than could be accepted. . . . In the spring the Farm and Garden provided a field facility for the student-directed course in Alternative Energy and Appropriate Technology. This succeeded, among many other accomplishments, in providing solar-heated hot water to the Farm Center, along with a composting toilet. Professor Norris's course in the Natural History of California is based at the Farm when not in the field, and [Stanley] Cain's spring course in Vascular Plants uses both the Farm and Garden regularly for practice in plant identification and structure. Perhaps more important than the formal courses are the independent studies based at the Farm and Garden [involving] everything from construction of a solar greenhouse to the natural history of the pocket gopher to a thesis on the "Evolution of the English Garden."[20]

In addition to burgeoning student interest, off-campus support for the Farm and Garden developed, thanks in part to the efforts of Louise Cain and other Friends of the UCSC Farm and Garden. Founded in 1971, the community-based Friends group served as a link to the area's many home gardeners and others interested in an organic approach to farming and gardening. In a letter to the Friends, College 8 Provost Bob Curry wrote,

> Over half of California's prime agricultural land is now in urban areas, primarily in backyards. I see the current research efforts and agricultural extension efforts in this State as being misdirected, and I believe that the Farm and Garden can fill an enormous need as a laboratory for learning to use our backyards wisely. Such an "appropriate agriculture extension" role is clearly a part of the University's responsibility to the citizens of California. The Friends of the Farm and Garden are an important part of this outreach effort.[21]

The Friends' lecture series and open houses at the Farm and Garden drew enthusiastic crowds. To raise funds for the facilities, Friends made and sold herb vinegars, put on auctions, wrote and produced the *News & Notes of the UCSC Farm and Garden Project,* and encouraged the university administration to continue support of the projects. The Friends built a Gatehouse at the Farm to serve as a meeting space and visitors center, bought a deer fence to protect the garden, and held plant sales, apple tastings, picnics, and teas that raised community awareness of the projects.

Thanks in part to the Friends' efforts, the Farm and Garden persevered through funding shortages in the late 1970s. Declining enrollment and tax cuts shrank the pool of student fees and discretionary funds that had long supported the projects, and campus fiscal support declined even as use of the sites grew. In 1978, Garden manager Orin Martin and Farm manager Jim Nelson maintained the Farm and the Garden almost single-handedly, "for the princely sum of $600 a month," recalls Martin.[22]

Fortunately, by 1979 the apprenticeship program was firmly established, bringing renewed energy in the form of a dedicated "learn-by-doing" work force. At the garden, staff and apprentices supplemented Chadwick's original efforts with new plantings of roses, cit-

Community members shop for organically grown produce and flowers at the Farm and Garden market cart, held twice a week at the base of campus, 1994. *Courtesy of Don Harris.*

rus and apple trees, perennial borders, and California natives. The farm grew to include tractor-cultivated row crops and orchards, as well as hand-worked garden beds, generating enough produce to support a small direct marketing and wholesale effort. Years before farmers markets were to become fixtures throughout the country, a "market cart," pulled by the

farm's donkey to the base of campus, offered fresh organically grown vegetables, fruit, and flowers for sale to campus and community.

Interest in the Farm and Garden spread as graduating students and apprentices took the message of organic farming and gardening into a larger arena. Articles in *Life*, the *Christian Science Monitor,* the *New York Times,* and the *Washington Post* generated national and international attention. Drawn by news of the successful, small-scale food-producing effort, visitors from around the world toured the projects. In 1978, *News & Notes* editor Louise Cain reported,

> Among recent visitors to the Farm were six African agricultural educators fostering small-scale agriculture to discourage the too rapid migration from tribal areas to the cities. Another day a tribal chief and traditional mayor from the island of Yap in the Caroline Islands arrived. They were interested in our vegetable gardening especially, since they saw comparable settings and situations to those in Yap.[23]

The Center for Agroecology and Sustainable Food Systems

The activities of the Farm and the Garden presaged what would become the movements to organic farming and sustainable agriculture, and made them relevant to a broader audience. By 1980, conventional agriculture's impacts on soil and groundwater, the development of pesticide-resistant "super pests," and a growing interest in organic farming, were widespread. In response, UC Santa Cruz's environmental studies board proposed a new program in "agroecology," the application of ecological principles to agricultural settings, with the farm and the garden as the program's campus headquarters.

Led by professor of agroecology Stephen Gliessman, the new program attracted enormous interest and substantial funding from sources such as California's Environmental License Plate Fund, the Columbia Foundation, and the Richard and Rhoda Goldman Fund. Professor Gliessman announced, "There is a tremendous need and opportunity to develop and promote agricultural practices that are environmentally sensible, economically feasible, and socially responsible."[24]

Environmental studies professor and the Agroecology Program's founding director Professor Stephen Gliessman (standing) helps ethnobotany students with plant identification at the agroecology laboratory, located on the Farm, 1998. *Courtesy of Jon Kersey.*

The Agroecology Program was the first University of California project to focus on what would come to be known as "sustainable" agricultural systems, and to pursue research on organic production techniques. In 1983, Alfred E. Heller funded UC Santa Cruz's first endowed chair, in agroecology, which Gliessman continues to

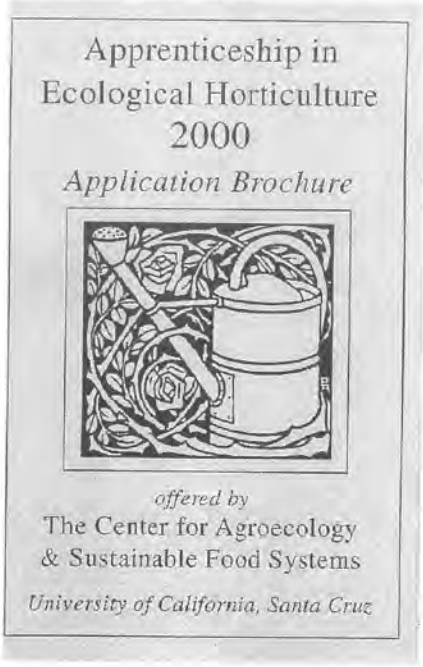
hold. In 1984, thanks in part to the efforts of grant writer Kay Thornley, the Agroecology Program received ongoing state funding. In 1993 the program's name was changed to The Center for Agroecology & Sustainable Food Systems, to reflect the center's dual interests in both the environmental and the social aspects of sustainable agriculture. In 1997 Carol Shennan was appointed director of the center.

Today the center's staff and affiliated faculty work with farmers in the region to develop more sustainable growing techniques, and encourage food security, gender equity, and workers' rights as part of a sustainable food system. The center's international work brings researchers, extension agents, and graduate students from around the world to learn about agroecology and sustainable farming.

The Farm and the Alan Chadwick Garden continue to attract four to five thousand visitors a year to see examples of organic soil management, alternative pest control measures, water conservation, and biodiversity on both home garden and commercial scales. Faculty and students use the sites for classes and research efforts, while center staff and apprentices maintain and develop the projects as flourishing demonstrations of what can be accomplished "working with, rather than overpowering nature." Thanks to the efforts of those that followed him, Chadwick's vision has evolved and found fertile ground at UC Santa Cruz.

Apprenticeship in Ecological Horticulture

The apprenticeship teaching style of Alan Chadwick, to do something and then put the student to work doing the same thing, became the model for the current Apprenticeship in Ecological Horticulture offered through the Center for Agroecology & Sustainable Food Systems. This full-time, six-month program serves an international group of thirty-five to forty participants with a broad range of backgrounds and interests, providing them with intensive training in the basic techniques needed to start their own organic farms or market gardens, run school and community garden projects, work in horticultural therapy, or teach in overseas development programs.



The apprenticeship blends hands-on learning with a more traditional scholastic approach of lectures and small-group discussions. Students spend approximately 200 hours in the classroom, in small group classes in the field, and on field trips designed to broaden their exposure to different aspects of sustainable agriculture. Topics range from soil science, botany, and entomology to more specific courses including compost production, irrigation, weed and pest management, tree crops, apiculture, farm equipment, seed saving, crop planning, and marketing strategies. Other classes cover such areas as community land trusts, rural development, and social issues in sustainable agriculture.

Apprentices apply their theoretical knowledge during more than 800 hours of hands-on work. As they manage the cropping cycle from seed planting to harvest, apprentices learn the nuts and bolts of gardening and farming. They build compost piles, prepare garden beds, evaluate soil fertility, set up irrigation systems, make sowing mixes, plant out and cultivate crops. They also learn how to recognize and manage disease and pest problems, make a cropping plan, choose appropriate equipment, care for fruit trees, and much more.

Since the Garden's founding, more than 800 apprentices have learned to cultivate plants in harmony with nature, without the need for chemical fertilizers and pesticides. This international group has spread small-scale, intensive organic techniques to countries around the world, in settings that range from South African townships to villages in rural Nepal to inner-city gardens in the United States. Orin Martin has said that these apprentices "leave our program with practical skills they can use for bettering a small piece of our world."

ENDNOTES

1 Ann Lindsey, *News & Notes of the UCSC Farm and Garden*, 76 (winter 1997).

2 "Freya von Moltke was the wife of Helmuth von Moltke, a leader of the resistance group known as the Krisau Circle (named after the family estate in Silesia) that planned the defeat of Hitler and the future of Germany after the Nazi reign of terror. Von Moltke was implicated in the Stauffenberger plot on Hitler's life; he was tried and sentenced to death. While in prison, he wrote a series of letters to his wife Freya, which were smuggled out by the prison chaplain. One of the last wishes he expressed to her was that she might start a garden somewhere as a symbol of life and vitality in the wake of so much destruction—a garden that would give young people hope and joy." Carolyn Reynolds-Ortiz, from an interview with Page Smith, in *News & Notes* 67 (fall 1995), 10.

3 "UCSC Farm & Garden: 25 Years and Beyond." Video produced and written by Carolyn Reynolds-Ortiz, 1992.

4 "UCSC's first years: an alumnus remembers," an interview with Anthony J. Mohr, in *Currents Online*, University of California, Santa Cruz, July 19, 1999.

5 Interview with Orin Martin, November 16, 1998.

6 Robert Howard, *What Makes the Crops Rejoice: An Introduction to Gardening* (Boston: Little, Brown, 1986).

7 Page Smith, *News & Notes* 16 (July 1980).

8 Howard, *What Makes the Crops Rejoice*.

9 Louise Cain, *News & Notes* 17 (September 1980).

10 "Garden Song: Alan Chadwick's Vision of Abundance." Video produced by Jim Mulligan and John de Graaf. Arthur Mokins Productions, Inc., 1980.

11 Orin Martin, *Santa Cruz Express*, April 25, 1985.

12 "Garden Song." Video by Jim Mulligan and John de Graaf.

13 Interview with Orin Martin, November 16, 1998.

14 Saying of Chadwick's, date and source unknown.

15 *Sunset Magazine*, March 1969.

16 Page Smith, *News & Notes* 16 (July 1980).

17 Quoted in Elizabeth Schneider, "Edibles from Eden: Northern California Gardens," *Gourmet* (June 1991).

18 Beth Benjamin, *News & Notes* 75 (summer 1997).

19 Ken Norris, letter to the environmental studies board (undated).

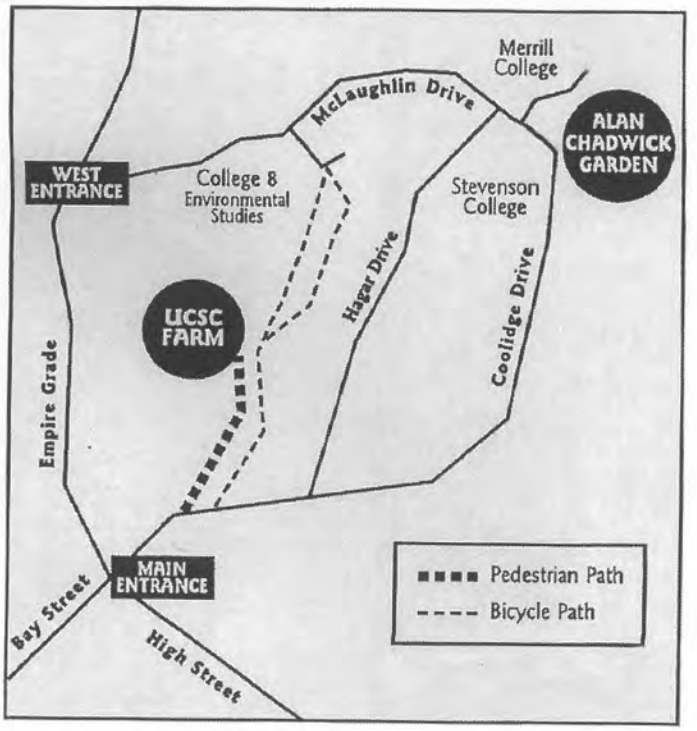
20 Ray Dasmann, *News & Notes* 6 (November 1978), edited by Louise Cain.

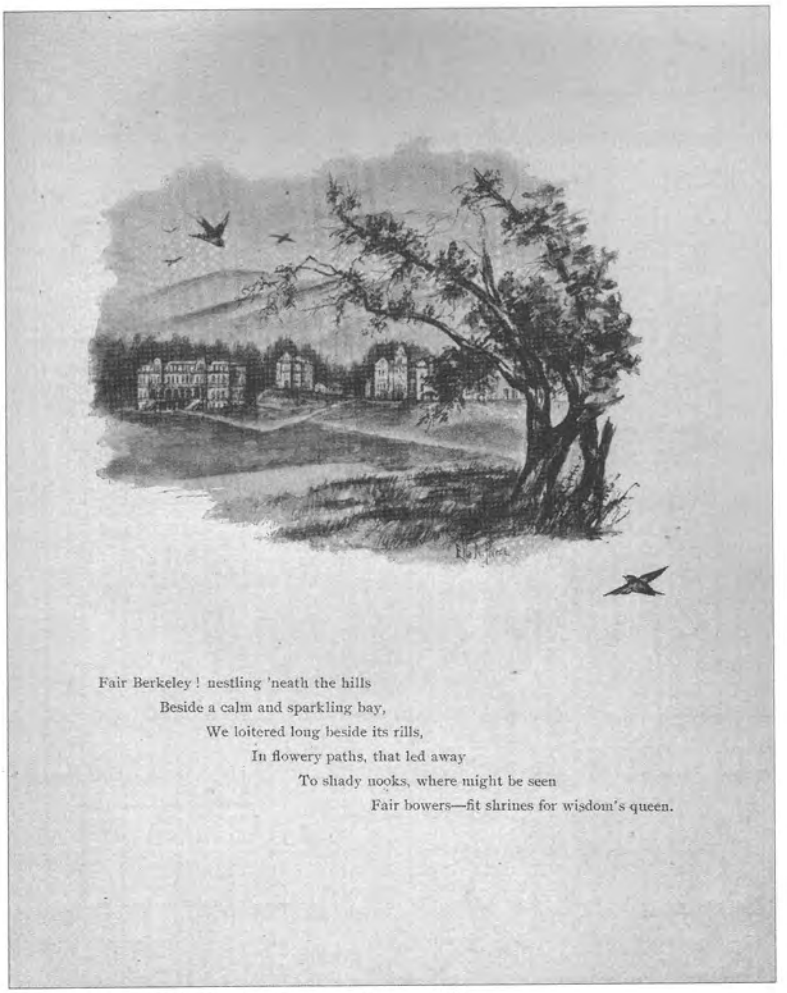
21 Bob Curry, *News & Notes* 12 (November 1979).

22 Interview with Orin Martin, November 16, 1998.

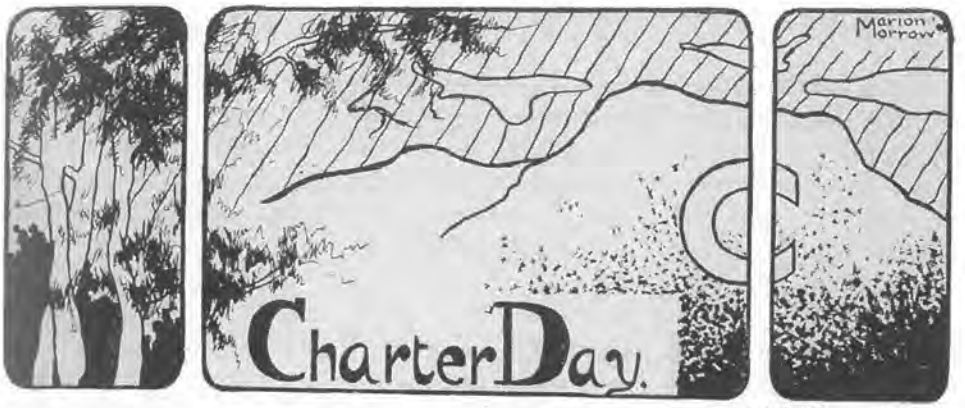
23 Louise Cain, *News & Notes* 1 (January 1978).

24 Tom O'Leary, *UCSC Review* 8:1 (October 1982).





Laura Pinney, *Within the Golden Gate*, 1893.



1906 Blue and Gold.

EARLY CONSERVATION SPIRIT IN BERKELEY AND THE BATTLE OVER THE "BIG C"

Steven Finacom

> *The University has taken sides, the faculty is alarmed, the townspeople have rushed to the defense of their beloved hills. The angel of peace has evidently made a false start.*
>
> —*Daily Californian*, March 16, 1905

THREATS TO CHERISHED VISTAS AND NATURAL LANDSCAPES can easily inflame debate in Berkeley, a community with an array of scenic attractions, bordered as it is on the east by a dramatic and steep range of partially undeveloped hills and canyons and on the west by San Francisco Bay and the Golden Gate.

In recent years residents have protested the placement of a large illuminated "Powerbar" sign atop downtown Berkeley's highest building where it competes with views of the Bay, bemoaned the removal of redwood trees in the hills, rallied both for and against altering the hillside woodland of the university's Blake Garden, and weighed in on the design character of the proposed new east span of the Bay Bridge, a development which will be highly visible from Berkeley.

This type of local controversy is not new. For example, in the 1930s the top of Berkeley's oldest skyscraper—the downtown Wells Fargo Bank building—carried a huge advertising display, and a visitor to Berkeley described community opposition to it as follows:

> One lone skyscraper sticks up like a sore thumb, increasing the similarity at night, when what is an untidy-looking scaffolding by day transforms itself into a flaming red sign. The decent and considerate skyline of the street is made to suffer, as well as the view from every house on the hills behind. An achievement not only in bad taste but in poor psychology, for many a Berkeley citizen rages against the insult to the city's beauty. [1]

But disputes over views and the natural landscape go back even further than the '30s, to 1905 at least. Early that year a short-lived but furious tempest erupted both within the campus and between town and gown over a student plan to create a permanent emblem of

college spirit on the hillside above the campus—the large concrete letter known today as the "Big C."

The disagreement was perhaps the first occasion that strong objections were raised on environmental grounds to a planned project on the university campus. The controversy gave evidence of the evolving conservation movement as well as articulating perspectives about open space and university development that resonate in the community to the present day. It foreshadowed the early 1920s battle over the siting of Memorial Stadium in the mouth of Strawberry Canyon and later disputes over the preservation of other cherished open spaces on campus and in the hills.

"The Poor Freshies Were a Negative Quantity"

The catalyst of the controversy lay in the nineteenth century. Class activities were a central part of undergraduate life. For the male students, this included spirited—and sometimes violent and destructive—competitions, rivalries, and fights between classes, particularly the freshmen and the sophomores. The males of those two classes often fought in a "rush," when they would battle until all members of the other side were tied up.

> Class tensions were often visible on the university's March 23 "birthday," Charter Day. The Charter-day [sic] exercises of the [eighteen] seventies, eighties, and early nineties were in the hands of the student body—or rather of part of the student body. Here is where the trouble came in. The Seniors, Juniors and Sophomores each had a representative among the speakers, but the poor Freshies were a negative quantity. [They tried] to make themselves known to the visitors on Charter Day. One year they moved a great wooden advertising elephant to the lower campus, and painted their numerals on the front; a second year they anticipated Stanford's feat by putting their class numerals on Goat [Yerba Buena] Island; another time in the middle of the exercises a great banner bearing the inscription, "OUR REPRESENTATIVE—FRESHMAN CLASS," rolled down from the ceiling.[2]

Later, the freshmen began a new practice of temporarily marking their numerals on the highly visible slope of the hill behind the campus. The sophomores responded with what became known as the Charter Hill "rush." The hill became an annual battleground with one class climbing to the high ground and daring the other to drive them off. In addition to physical injuries to participants, the university received a black eye from bad publicity about boisterous student behavior.

Faculty members—who had charge of student discipline in that era—vigorously tried to prevent the rush from taking place. By 1904 they were threatening to expel any rush participants. Professor Clarence L. Cory, head of the Faculty Student Affairs Committee, had arranged for armed men to patrol the hill and swept the slopes with an electric searchlight mounted on top of a campus building. (Half a century later the new electrical engineering building near the foot of Charter Hill was named in Cory's honor, but presumably not because of his early practical application of electrical technology to student discipline).

Professor Clarence Cory, from W.C. Jones, *Illustrated History of the University of California*, 1895.

"After long and heated argument bitter gibes and wrangle" the freshmen decided to call off the 1904 rush. Pouring rain also dampened enthusiasms. "Some few belligerents went up the hill, but most of the class abided by the decision."[3] The rush tradition had been interrupted but there was, as yet, no positive alternative to replace it.

"The Practice of Rushing Was Practically Dead"

The next year, 1905, freshman and sophomore leaders got together early to discuss Charter Day, and decided to turn what had been a bitter experience into a permanent and positive memorial. Associated Students of the University of California President William Dehm told the assembled freshmen that "the practice of rushing was practically dead, and asked that the men of the present classes should effectually [sic] bury the custom."[4] The classes agreed to cooperatively construct a permanent block "C" in concrete on Charter Hill as a symbol of the end of warfare.

The plan was to build the "C" quickly, in time for Charter Day. The proposal received official blessing from a presumably relieved President Wheeler (who vigorously preached the virtues of a unified "University family" and deplored violent and destructive class confrontations), as well as Professor Cory and university architect John Galen Howard.

Since students were already familiar with the tradition of Student Labor Day—celebrated with volunteer work on the campus grounds every four years on February 29, beginning in 1896—the same approach was adopted for construction of the "C." Men of the freshman and sophomore classes would labor together to build the "C," then descend to the campus proper to enjoy lunch prepared by the cooperative efforts of their female classmates. The men would pay for the building materials; the women would buy the food.

A remarkably short time after the idea was proposed, arrangements were largely complete. By March 9, the week before the scheduled construction, students were confident that their plan was sailing smoothly ahead and that they were united.

"A Blow to the Moral Rights of the People of California"

On Monday, March 13, however, dissension arose from a different quarter. Assistant Professor Albert Whitney let loose a rhetorical broadside in a letter to the *Daily Californian*, calling the project an example of "vulgarity and Philistinism." His principal objection was the prospect that the proposed "C" would deface the natural character of the Berkeley hills.[5]

Sounding much like an open space or environmental advocate of later years, Whitney wrote:

> All the hills about the bay are the common heritage of the people of California. It is our birthright to look upon them, to watch their passing shadows, to note their response to the fall showers and to follow their gradual changes from delicate green through the luxuriant color of spring into the russet hue of summer—that is, one of the privileges of being a Californian; to desecrate this scene by a symbol . . . entirely unsuited to the gentle beauty of the hills is a blow to the moral rights of the people of California.[6]

Assistant Professor Albert Whitney, from W.C. Jones, *Illustrated History of the University of California*, 1901.

In passionate prose Whitney continued by contrasting the rights of some 3,000 students with "a community of a hundred thousand people within easy sight of the hills to whom this desecration of nature is an affront and not for a day but for twenty years of days." He concluded with the warning, "Let three thousand young people for four years live in the contemplation of this kind of vulgarity and the state need not be surprised to find them painting 'Cs' upon El Capitan. And why not? Why is it worse? The Berkeley hills in their way are just as fine as the Yosemite."

Comparing the Berkeley hills to the grand valley of the Yosemite might seem rhetorical excess today, yet Whitney's argument was probably well founded in the sentiments of many Berkeley residents of the era.

In 1905 the Berkeley hills, although grazed by cattle and planted here and there with plantations of eucalyptus and conifers, were still in a largely undeveloped state, their natural contours and character clearly visible, their upper slopes free of streets, houses, transmission wires and towers, and other development. Few roads crossed them or even came close to the summit. They were not pristine, but neither had they been too dramatically altered.

Many Berkeley residents enjoyed their frequent hikes into the hills. Memorial Stadium was not yet planned and below the site of the proposed "C," Strawberry Creek flowed across the base of Charter Hill in a series of picturesque cascades and pools, creating a romantic natural area that was a principal entry point to the canyon and hills. Berkeleyans walked and picnicked in the hills, admired their views and birds and wildflowers, and cherished them as much as they valued their summer excursions to John Muir's "Range of Light," the High Sierra.

One professor, Cornelius Beach Bradley, who was also a founding member of the Sierra Club, had written in 1898 that hikes into the Berkeley hills were

> a source of unending pleasure to those who have come to know them. There is a large graduation too in their extent and in the effort they require; the quiet saunter up Strawberry Canon in the gloaming, the long afternoon ramble over the hills to Orindo Park [sic], the all day tramp by the Fish Ranch to Redwood Canon and Maraga Peak [sic], or more strenuous still, the cross country trip to Diablo.[7]

Strong local sentiment about keeping the hills in their natural state was also expressed in 1898 in a little publication, *A Berkeley Year*, produced by the Women's Auxiliary of the First Unitarian Church, a congregation which numbered many of Berkeley's conservation advocates among its fellowship and had just built a remarkable new sanctuary in the "shingle style" at the corner of Dana Street and Bancroft Way (the building is now the campus Dance Facility). A paean to the natural history and native delights of Berkeley, *A Berkeley Year* featured articles by several faculty members and included a poem by Adeline Knapp entitled "On Berkeley Hills," with a first stanza that read:

> The sun lies warm on Berkeley hills:
> The long, fair slopes bend softly down
> To fold in loving arms the town;
> The sun-kissed uplands rise and swell,
> And blue-eyed grass and pimpernel
> Dot the young meadow's velvet sheen.
> The air with spring-time music thrills,
> Sweet songs of birds in halls of green
> On Berkeley hills. [8]

The hills were also emphasized in the book's prose essays, including one by revered Professor Joseph LeConte—who had also been, with John Muir, a founder of the Sierra Club.

> Underlying all of [Berkeley's natural and human history] and forming the condition of their existence—without which there never would have been any Berkeley—are the Hills with their rounded and infinitely varied forms, their noble outlook over fertile plain and glistening Bay shut in beyond by glorious mountain ranges . . .
>
> As soon as the Hills raised their heads above the ocean, the sculpturing agencies of sun and air, of rain and rivers commenced their work of modeling them into forms of beauty. Slowly but steadily, unhasting [sic] yet unresting, the sculpturing has gone on from that time till now. The final results are the exquisitely modeled forms, so familiar, and yet so charming.[9]

Edward Payne reminiscing about Berkeley's "early days" (the mid-nineteenth century) wrote in another essay:

> The hills, eastward, held out as to-day their irresistible invitation to the stroller, but wore the grade of a more perfect solitude than now. One might wander there all day and be utterly alone except for the browsing kine, the bleating sheep, and the inquisitive ground squirrel. . . . Indeed, all Berkeley seemed much closer and more akin to nature than to the world of men. Alas! . . . that a city should have arisen here, driving back the line of nature's outposts, and covering her simplicities under a crust of civilized improvements![10]

Professor Edward L. Greene added:

> One cherishes such a mental picture . . . of those massive hills, with undulating slopes and rounded summits, all verdure-clad and flowery, almost from the beginning of the year till midsummer; then for succeeding weeks as beautiful with a kind of harvest-field yellow, this deepening into brown as autumn days draw near; and always varying in their beauty with every change in the everchanging sky; beautiful under cloud, and in sunshine; beautiful in the light of early morning, in the effulgence of noonday, and at the setting of the sun.[11]

Many individuals who deeply sympathized with these views lived near the campus where the Hillside Club movement was in full flower. They insisted upon streets that conformed to the natural contours of the land, the use of natural materials (such as the unpainted redwood shingles used on the Unitarian Church) in construction, and a reverence and respect for the natural landscape. Out of this turn-of-the-century epoch in Berkeley arose not only proponents of regional architecture like Bernard Maybeck but leaders of the early conservation movement and its seminal organizations. Many of the founders of the national conservation movement lived in or had connections to Berkeley, and found a large and sympathetic audience there. It was an era when one of John Muir's daughters attended the private Anna Head School in Berkeley, university benefactress Phoebe Hearst lent her support to save California's redwoods, and the Sierra Club was founded by a little group mainly composed of Berkeley and Stanford professors.

As the new century began, advocates of "living with nature" and protecting natural treasures were increasingly worried about what the future would bring for the natural landscapes they cherished, not only those in distant grand places such as Yosemite, but close to home. They read, presumably with displeasure, of increased growth that threatened the local landscape:

> Berkeley as Athens witnessed a population growth which emphasized a need for housing. Real estate agents were quick to sell and parcel land to those who sought to build their homes in the grassy hills and canyons north of the University. Environmentalists and guardians of taste feared for the natural beauty of those hills.[12]

As a harbinger of what was to come, Berkeley newspapers at the time of the 1905 controversy carried a realtor's advertisement for lots on Panoramic Hill, the residential district which now rises southeast of Memorial Stadium. The advertisement shows a sylvan tree-lined lane and proclaims that lots could be had for $150, and a whole acre of land for development for $500.[13]

While some development was welcomed—after all, many of the most ardent proponents of protecting nature had built their own homes on virgin ground on the lower slopes of the wild hills—citizens fought back against what they saw as the wrong sort of development. Undoubtedly many of them would have seen the construction of a large concrete letter on the hillside as a direct affront to the harmony they were seeking to promote, and had indeed successfully achieved, through much of the built-up hill district of Berkeley.

Worse yet, they would probably have to hike right past it, or stare at it from their windows. And, as later generations would continue to demonstrate, there are few things that enrage a Berkeley resident more than the idea that his or her view might be altered for the worse.

While these sentiments were most prevalent among permanent local residents and some faculty, at least a few students of the era were sympathetic to the spirit of preserving and enjoying natural landscapes. In the *Blue and Gold* yearbook for the 1903-04 academic year an article on student extracurricular life noted that male undergraduates tended to divide themselves among three types of "good fellowship." Some frequented Stiles Hall, the University YMCA which was a center of student activities with a high moral tone and purpose; some gravitated to "the life of the City" [San Francisco]; a third type, including many individuals from rural backgrounds, was addicted to "the sturdy vagobondage [sic] of the hills." In addition:

> There is a masculine purpose in the hills back of the campus. Scores of the students who come back every year are directly out of the wilderness, out of the brush and off of the rocks. What are paved streets to them. They must crunch gravel under their feet and trample the turf; only naked nature can satiate them—and there are the hills behind the campus. . . . There is the lyric and the epic of nature in tremendous, propitious competition. There can two woodsmen, exiled from the Sierras or the quainter hills off the great valleys, find mutual solace and camaradery [sic].[14]

In the same issue of the *Blue and Gold* one student published a poem expressing much the same sentiment.

I love you hills of Berkeley,
With scattered flower and oaken tree,—
And when the sad time comes to pass
When I must say adieu at last,
The days of yore I spent with thee
Will be again brought back to me
By memory.[15]

Just three years later, however, the yearbook carried a poem with a similar subject but a different outlook. This time a student writer saw the hills not as a natural haven where one could wander and enjoy nature, but as a backdrop for the growing university. In a virile, Kiplingesque meter the writer proclaimed:

Queen of the oaks and the poppies,
Queen of the strong and the fair,
Here, on the breast of the hill-side
Rear we the flag of the bear.
Out of the strong cometh sweetness,
Forth from the hills dawneth day,—
Fair—thou shalt lift us and guide us,
Strong—thou art 'stablished for aye![16]

In the end, it was this latter sentiment—that the hills should be a dramatic landscape, subject to alteration in the service of the university—that would apparently prevail among students in the 1905 controversy. The "flag of the bear," or the emblem of the Big "C,"would triumph over the slopes of "scattered flower and oaken tree."

This photograph of the Berkeley campus from the *1889 Blue and Gold* (1888) shows the numerals of the class of '89 on the hillside above the campus. This may be a doctored photograph included as a joke by the class of '89 which was responsible for publishing that yearbook, but it does illustrate the late nineteenth century tradition of marking freshman class numerals on the hills each year, and the prominence such emblems had in an era before the hills were developed or extensively planted with trees.

"Forty Tons of Cement is Good"

As the project to build the "C" proceeded, student preparations may have inadvertently inflamed the fears of the opposition. Newspapers reported that there had been "elaborate calculations for the building of the 'C' so that it will present the best possible appearance, no matter from what point it is viewed,"[17] followed by statements that the "C" was being sized and designed to be visible not only from Berkeley—and, in particular, California Field, then the football stadium on campus—but from miles away at the Oakland Mole where the ferries came in, near the eastern terminus of today's Bay Bridge.

In those pre-Campanile days, this would have made the "C" by far the most prominent and distantly visible emblem of not only campus, but town. Today, the "C" is bordered on three sides by obscuring trees, but in 1905 the slope around it was largely grassland—literally the "breast of the hill-side" as the poet proclaimed—making the site highly visible from several angles.

The fear that the "C" would ultimately be viewed not as spirit symbol but as crass advertising was heightened by statements such as those of alumnus Frank Todd, a graduate of 1894, who argued that the "C" should be considered a monument like the great pyramids. Like them, he said:

> it will be an incongruous object in the landscape . . . they harmonize with nothing; but with mere brutal bigness they club the mind into giving them attention . . . so, in time, may the big "C". If properly constructed it should be a monumental work, stupendous and compelling. . . . Forty tons of cement is good. A hundred would be better . . . [to] base the big C on foundations that reach to the core of the world.[18]

Todd also pointed out that the "C" might be worth hundreds of thousands of dollars in advertising, drawing curious tourists to Berkeley and the campus. These were hardly sentiments to calm the skeptics!

"We May Set Up a Monument Which Will Disfigure Our Hills"

Among those who spoke in opposition to the project was Charles Keeler, spiritual father of the Hillside Club movement, a passionate advocate for the appreciation of natural beauty, and a central figure in Berkeley's cultural community. An introduction to a book about Keeler has this description:

> His house was the gathering place for California's great cultural lions. . . . The young poet and his good friend William Keith would often take a saunter through the Berkeley hills. . . . Keeler was to be found at every literary salon or social function . . . he was Berkeley's darling.[19]

Keeler's own essay in *A Berkeley Year* in 1898 had rhapsodized about "the great expanse of open hill slopes, green and tender during the months of winter rain, and soft brown when the summer sun has parched the grass and flowers . . . there is a quiet, almost sacred feeling about the place."[20] As the opposition to the "C" emerged, he suggested that the concrete already gathered for the project be put to use in constructing a bridge, fountain, or bench lower on the campus.

Assistant Professor of Latin Clifton Price told the *Daily Californian* that:

> the intrusion of signs of any sort on natural scenery is frowned upon the country over. A yellow "C" will harmonize neither with the green of winter nor the brown of summer . . . we owe much deference to the opinion of those who have resided long in this community and who feel almost a proprietary interest in the beautiful hills. All such, almost to a man, are opposed to the proposed "C."[21]

Price thought that the students should instead have a tug-of-war, presumably to simultaneously establish class supremacy and bind the undergraduates together in a harmless common endeavor. He even specified that the rope should be cut into two inch lengths to produce souvenirs.

Another suggested alternative to the "C" came from a somewhat surprising quarter in the same issue of the *Daily Californian*. Professor Charles Mills Gayley, chair of the English department, had impeccable credentials where student spirit was concerned and might have been expected to favor such a grand and positive gesture as a cooperatively constructed "C." Gayley was not only the author of campus songs, including "The Golden Bear," but also a faculty sponsor of the Order of the Golden Bear, the prestigious senior men's service society on campus. He was a popular and respected figure among students.

Gayley wrote to the *Daily Californian* worrying that "in our zeal to commemorate the era of good will we may set up a monument which shall disfigure our hills and be source of mortification to us." Perhaps hoping to mediate among the various opinions he suggested "a great C of acacia trees" or a C made of "that golden broom that bursts into blossom early in March? or something else; anything else, for that matter."[22]

"What Is the Use of Making So Much Ado About Nothing?"

Neither Gayley's appeal, nor the earlier broadside of his colleague, Whitney, seems to have had a pronounced effect. While giving over considerable space to opponents' concerns, the *Daily Cal's* editors called the objections "mock heroic" and editorialized:

> it is hard to believe that so little a thing can so effectively mar the classic beauty of Berkeley's hills. . . . The concrete "C" proposed will not be such a horrible blot on the landscape. What is the use of making so much ado about nothing?[23]

Some faculty and staff sympathized and were quoted in the *Daily Californian* two days before the proposed construction. Knight Dunlap, identified as an instructor in psychology, bluntly said that "I am moved to add my quota to the general production of weariness by inquiring what the fuss is all about." He added that "if the emblem should turn out as shocking bad as is foretold, the remedy will be simple . . . demolish it." Appointment Secretary May Cheney concurred, expressing the view that allowing the "C" to be built was an acceptable price to pay for peace in the long wars between classes. "It is better to have the 'C' than an interclass rush and even if it is a blot on the landscape, we may tear it down and thus be rid of an esthetic nuisance." Professor Edmond O'Neill of chemistry added that "if lugging two tons of cement up a hill satisfies the cravings of the freshman and sophomore for some sort of excitement let them do it under all circumstances."[24]

But other faculty swelled the chorus of opposition in the same issue of the newspaper. "A thing of this sort reminds one of the penciled names of individuals on the Washington monument," one said. "Let every entering class plant a tree or group of trees on Charter hill. This would be an ever-increasing memorial that would add rather than mar the beauty of the hill."

"The protests of the citizens of Berkeley ought to be at least considered," Assistant Professor Walter Morris Hart wrote, adding sarcastically that "the 'C' would serve no purpose but would mar the beauty of the hills. To the uninitiated it would suggest nothing but some patent medicine as Castoria, perhaps with the implication that freshmen cry for it."[25]

He was joined by Professor William Emerson Ritter of zoology who said, "The hill is worthy of some great building like an observatory and I think big 'C' will seem a very insignificant and tawdry attempt to show off the University emblem." But an instructor in chemistry said that while he might prefer an emblem of flowering shrubs, it might also be best to give in to popular trends. "It seems to be one of the ideas of modern times to utilize the hills near large cities for the purpose of putting signs on them and the scheme in question seems to follow out this idea."[26]

This sentiment would later be realized most extensively in the Bay Area in the "South San Francisco the Industrial City" sign that sweeps across an entire hillside south of San Bruno Mountain. Painted in 1923 and recreated in concrete five years later, the sign includes letters 60 feet high. Berkeley students occasionally paint one of the white concrete "C" letters and the adjacent "al" in "Industrial" blue or yellow around Big Game time, creating a prominent "C-A-L" on the Peninsula hillside that, for a time, is even more visible that Berkeley's single "C."

Some of the faculty protesters probably felt a direct personal stake in the controversy. Whitney and Price lived on Panoramic Hill, Whitney on Canyon Road on the southern flank of Strawberry Canyon. The "C" would exhibit itself on the slopes right across the canyon from their homes. Similarly, Professors Gayley and Hart lived in houses that faced the hills (Gayley at the southwest corner of Piedmont and Durant, Hart a few blocks south in the 2700 block of Haste Street) and perhaps their views would be affected as well. The "C" would thus not be just an abstract indignity, but a tangible daily affront.

It is hard to document whether opposition to the project extended to any large number of townspeople unaffiliated with the university. Understandably, faculty, students, and alumni make up almost all of those quoted in the *Daily Californian* although the views of a few individuals like Charles Keeler, who did not have a formal campus connection, were also reported. Unfortunately the *Berkeley Gazette* at the time tended to simply reprint *Daily Californian* stories in its campus news section and thus did not record any separate "town" perspective on the dispute.

The controversy excited considerable on-campus discussion and comment only two days before the proposed construction. Also in the March 16 issue the editorialists of the *Daily Californian* wrote with some chagrin:

> the University has taken sides, the faculty is alarmed, the townspeople have rushed to the defense of their beloved hills. The angel of peace has evidently made a false start.

"Our New Monument Is Not . . . the Eye-sore Which Some Predicted"

Nonetheless, the endeavor went forward. (It is somewhat remarkable, looking back from our own era of lengthy environmental impact reports, construction and funding reviews, approval processes, and public notice periods, how quickly something as prominent as the "C" was conceived and built. Less than a month would elapse from the first public information about the idea to the completion of construction.) The project was bolstered by Professor Frank Soulé who approved the engineering of the concrete construction and who "together with Professors Christy and [John Galen] Howard, has encouraged the [student] committee in their preparations."

Howard, as the university's supervising architect, presumably could have stopped the project by saying it would conflict with this or that planned campus development. Instead he lent crucial support to the project's proponents by stating that the placement of the "C" would not interfere with the construction plans of the "Greater University," then expected to eventually climb in triumphant terraces to the summit of the hills.

Interestingly, none of the newspaper articles on the controversy quote any direct comments on the Big "C" plans by President Wheeler. Although he was reported as having endorsed the idea in its early stages, his apparent absence from the subsequent public debate seems uncharacteristic. Perhaps he felt it would be prudent not to publicly weigh in on the controversy which pitted some faculty against students—or perhaps he just had no strong opinion, or may even have been out of town.

On the planned day of construction, Saturday, March 18, Man could no longer intercede, but Nature acted on her own behalf. Rain drizzled down over the 200 students who turned out to work on the project and only eight tons of material—primarily gravel—were successfully passed from man to man in a chain up the steep slope. Several tons of sand and cement remained at the bottom of the hill when the workers stopped for lunch. And the project was slightly marred when the freshmen and sophomores happily threw empty sacks at each other and the eye of one participant was injured.[27]

Work continued the following week and on Charter Day, March 23, the concrete construction was finally finished. The cheers of the participants high on the hill were audible to the assembled celebrants in the Greek Theatre below. The only problem—quickly corrected—was the fact that some freshmen, in contravention of the spirit of burying the "rush," had crept up the hill at night to lay out large paper numerals for their class, '08, on a nearby slope. Other freshmen quickly collected the offending display and burned it. Days later, a crew of freshmen painted the concrete "C" yellow to complete the official project. This was the first paint job of literally hundreds that the "C" would receive.

The Big "C" in the '30s surrounded by trees, decades after the controversy over its creation had died down, from Robert Sibley, *The Romance of the University of California*, 1928.

Once the dispute had run its course and the project was finished, community and campus critics were silent, or at least unreported in the newspapers. The *Daily Californian* hopefully noted:

> It is comforting . . . that our new monument is not, after all, the eyesore which some predicted. The only comment which has been heard since its completion is that it is too bad the "C" was not made larger so that it would show more plainly and be visible from a greater distance.[28]

The next year freshman and sophomore students trekked as a group to the "C" to refresh the paint "and forthwith the gigantic letter was revived and sparkled with the liquid color mid the green of Charter Hill."[29]

Over the years the memory of the controversy faded and the "C" became a fixture of the landscape. In 1912 students labored to build a trail to the "C." Later, university build-

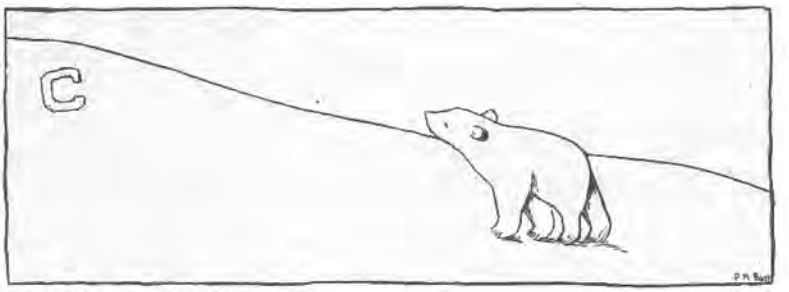
ings did climb the hills above it, although they were part of the Radiation Laboratory, not the Observatory and student residences that were still envisioned at the time of the letter's construction.

The era of emblazoning college letters and town advertising on hillsides swept across the country and passed, after leaving one other hill marker in Berkeley—an orange concrete "C.S.D." on the slopes above the former California School for the Deaf (now the university's Clark Kerr Campus). That second institutional emblem would become controversial in its own way in the 1960s and early 1970s when pranksters would paint part of the "C" in the "C.S.D." to make it appear that the letters spelled "L.S.D." The Deaf School administration was reportedly enraged when photographs of the letters were circulated as "proof that there's LSD in Berkeley."[30]

In time, the "C" became one of the central spirit symbols of the Berkeley campus and, in large part, fulfilled the sentiment expressed by a *Daily Californian* writer in 1905 during the controversy:

> Undergraduate sentiment is always illogical, and to one who is not in sympathy with it seems trivial and not worth while. Such a one cannot realize that to us the "C" will be an ever-visible inspiration, typical of love of the University which must inevitably force class antagonism into the background.[31]

So it proved to be. Today, the era of class rivalry is almost forgotten and students from various class years join together to guard the "C"—now approaching its centennial—against Stanford students who try to paint it red. And, from time to time, other miscreants attempt to paint the letter green—an unwitting homage, perhaps, to those early conservationists who campaigned to prevent the symbol from being built at all.



1906 Blue and Gold.

ENDNOTES

Most references to the controversy may be found in the *Daily Californian* for March 1905, and the *Blue and Gold* yearbooks of that era.

1 Hildegarde Hawthorne, *Romantic Cities of California* (New York: D. Appleton-Century Company, 1939), 262.

2 *1906 Blue and Gold* (1905), not paginated.

3 Ibid.

4 *Daily Californian*, March 6, 1905.

5 *Daily Californian*, March 13, 1905.

6 Ibid.

7 Adeline Knapp, ed., *A Berkeley Year* (Berkeley: Women's Auxiliary of the First Unitarian Church, 1898), 41-42.

8 Ibid., 55.

9 Ibid., 3-4.

10 Ibid., 19.

11 Ibid., 47.

12 Dmitri Shipounoff, introduction to Charles Keeler, *The Simple Home* (1904; reprint, Salt Lake City: Perigrine Smith, 1979).

13 *Berkeley Gazette*, March 1905.

14 *1905 Blue and Gold* (1904), not paginated.

15 "A Reverie," C.A. Finch, *1905 Blue and Gold* (1904).

16 "California," A.E. Anderson, *1908 Blue and Gold* (1907).

17 *Daily Californian*, March 14, 1905.

18 *Daily Californian*, March 15, 1905.

19 Dmitri Shipounoff.

20 Knapp, *A Berkeley Year*, 32-33.

21 *Daily Californian*, March 13, 1905.

22 Ibid.

23 *Daily Californian*, March 14, 1905.

24 *Daily Californian*, March 16, 1905.

25 Ibid.

26 Ibid.

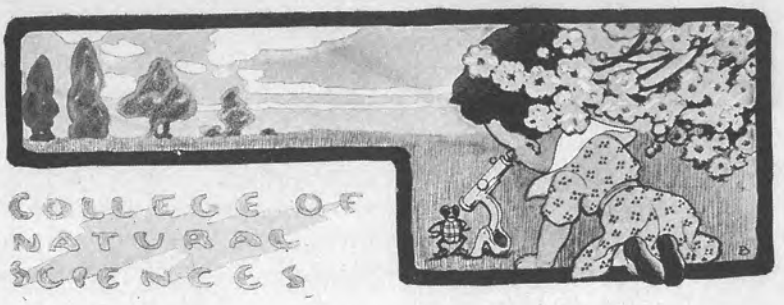
27 *Daily Californian*, March 20, 1905.

28 *Daily Californian*, March 27, 1905.

29 *1907 Blue and Gold* (1906).

30 Personal interview of author with John Stansfield, Berkeley Historical Society, August 7, 1999.

31 *Daily Californian*, March 20, 1905.



FREDERICK SLATE, B. S., DEAN OF THE COLLEGE OF NATURAL SCIENCES.

B. S., Brooklyn Polytechnic Institute, 1871.

Civil Engineer, Oregon & California Railroad, 1871–72.

Civil Engineer, North Pacific Coast Railroad, 1872–73.

Assistant and Instructor Chemical Department, California, 1874–77.

Superintendent Physical Laboratory, California, 1879–91.

Assistant Professor and Associate Professor of Physics, California, 1879–91.

Professor of Physics, California, 1891.

This is the third of the Liberal Culture Colleges.

In the old College of Letters the classical course was strictly prescribed. Later the need of a liberal course for those who did not care to pursue the study of Greek was felt, and branches were added to this old college to allow such a course. But while there were many who desired to study the science for their own sake and as a culture course, there was no way to do this except in the colleges of applied mechanics. This was felt to be a great hardship, so when the departments of the University were organized in 1893 the Faculty instituted the College of Natural Sciences.

The special feature of the curriculum of this College is the prominence given to the Natural Sciences as elements of culture, and the preparation afforded for a professional career in science.

Enrollment: Men, 80; Women, 98; Total, 178.

1903 Blue and Gold, 1902.

A PERSONAL VIEW OF MILDRED MATHIAS

A WOMAN FOR ALL SEASONS

Roger Samuelsen

FORMER UCLA CHANCELLOR CHARLES E. YOUNG once called Mildred E. Mathias a "woman for all seasons." A *UCLA Monthly* article in 1977 about Mildred was titled "A Peripatetic Botanist Who Can't Slow Down." A *Los Angeles Times* article in 1988 was titled "Botanist's 2nd Career: Pied Piper of the Jungle."

I first met Mildred in 1968 when she was named chairman of the universitywide advisory committee for the University of California Natural Land and Water Reserves System (now known as the Natural Reserve System). She led me on a hike in the Philip L. Boyd Deep Canyon Desert Research Center near Palm Desert. Ever the teacher, she identified every plant and animal within sight and, in the process, inspired me to devote the better part of my university career to the development of the Natural Reserve System. It was the first of many times I was left exhausted trying to match her energy and vigorous pace.

Mildred continued as chairman for twenty years, a remarkable record in itself since most faculty members find ways to get off committees after but one term. She resisted the terms "chair" or "chairwoman," often kidding that "chairman" was a perfectly acceptable word. In recognition of both her longevity and devotion to the cause, she was affectionately called the "mother" of the Natural Reserve System, even as the founder, the late Kenneth S. Norris, was affectionately known as the "father" of the System.

Mildred Mathias with David Saxon and Kenneth Norris, 1975. *Photograph by N. H. (Dan) Cheatham. University Archives (UARC PIC 13:4006).*

"The Natural Reserve System is an educational innovation born of necessity," Mildred would often say in addressing the board of regents or cultivating donors and supporters. "How can anyone begin to understand the dynamics of an ecosystem without actually experiencing it? . . . . Our studies in natural areas of natural populations—such as those of chaparral—may give us insight into our problems in the urban environment and may suggest possible solutions."

The Natural Reserve System was but one of Mildred's passions. A distinguished botanist (the Botanical Garden at UCLA is named in her honor), she was actively involved in scientific and conservation efforts around the world. To cite but one, she was a major player in the establishment of the Organization of Tropical Studies, a consortium of major universities in the United States formed to obtain protected field sites in the tropics. In 1963, she spoke critically about the careless destruction of tropical forests, which are where "many promising drugs from plants are being lost for all time."

When she "retired" in 1974, UCLA Extension persuaded Mildred to lead a natural history trip to Costa Rica. This led to a "second career"—leading over fifty groups with over 1,000 paying participants to foreign natural areas, gardens, and museums in more than thirty countries. My wife and I joined her and twelve others on a trip to Peru in 1988. We called ourselves "El Grupo" and followed the "Pied Piper," then eighty-one years young, through the streets of Lima and Cuzco, the jungles of the Tambopata Nature Reserve, and Machu-Picchu. More often than not, Mildred would be the last to retire for the night as she planned the next day's adventure, over a glass of beer.

Mildred died in 1995, a few days after suffering a stroke while working in her garden. Her accomplishments are legendary, but the qualities I treasured most were her warmth, her hearty laugh, her gentleness. She was equally comfortable with corporate executives, students young and old, and natives in Costa Rica and Peru. Some of her closest friends were donors to the Natural Reserve System or other causes she espoused. Such was the respect and trust she engendered. She was truly a "woman for all seasons."

ALDRICH PARK

UNIVERSITY OF CALIFORNIA, IRVINE

Text and photographs from *UCI The First 25 Years,* 1992.

THE CENTRAL FEATURE of the Irvine campus is a twenty-one acre park planted with 11,000 trees representing forty species from similar climate zones around the world. Named Aldrich Park after Irvine's founding chancellor, Daniel G. Aldrich, Jr., on the occasion of his retirement in 1984, the park has been the site of commencements, concerts, weddings, festivals, and student protests, rallies, and even a "streaking" by students sans clothing.

The partially developed Irvine campus in the mid-sixties, with half a park.

View from the park's center, 1983.

In the early days of campus planning at Irvine, a carillon was envisioned at the center of the park. Chancellor Aldrich argued for the natural outcropping of rock at the park's center as the landmark feature and was delighted when plans for the campanile were abandoned.

Chancellor Aldrich keeping the park clean.

". . . and if there was a gum wrapper on the road to heaven, I'm sure Dan stopped to pick it up," said Jean Aldrich at the memorial service for Dan Aldrich held in the park, 1990.

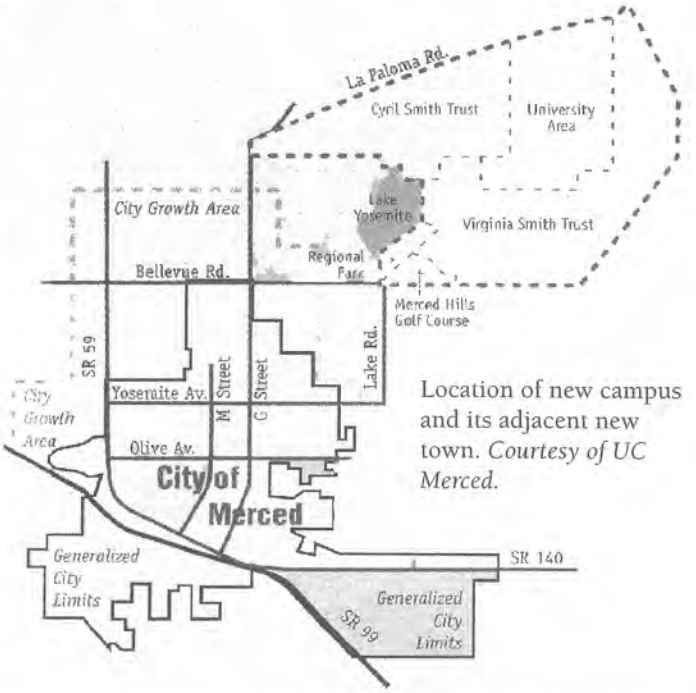
A more fitting tribute to Dan Aldrich can scarcely be imagined than the decision to rename Campus Park in his honor. Four of his colleagues wrote: "The beauty of the UCI campus is a reflection of Aldrich's interest and expertise in soils and plant nutrition. The campus landscape was his applied laboratory."

Dan Aldrich at the dedication of the park in his honor, 1984.

RETHINKING THE FIRST UNIVERSITY OF CALIFORNIA CAMPUS AND DESIGNING THE TENTH AT MERCED

Christopher Adams

This paper was given in a somewhat different form at the February 10, 2000, symposium "Designing the Campus of Tomorrow: The Legacy of the Hearst Architectural Plan, Present and Future."



Location of new campus and its adjacent new town. *Courtesy of UC Merced.*

I am going to stress three themes, which I think characterize the planning of the new University of California campus at Merced. My first theme is environmental awareness. What I mean by this is that from the beginning of the site selection process everyone involved has been aware of environmental issues. Not necessarily sympathetic to them; perhaps only grudgingly acknowledging them, but in any case not ignoring them. I think if you look back at the history of planning the Berkeley campus, you will find that the response to the natural environment was primarily exploitative, as was characteristic of most nineteenth-century development of California. Strawberry Canyon was acquired to insure a source of water; soon it was also treated in its lower reaches as a sewer. Frederick Law Olmsted, in the 1860s, was among the first to recognize that the creek was a significant visual resource and fundamental to the campus plan. Not, however, until the 1970s was the creek studied in terms of its hydrology and biology in ways which would be basic to any study of the Berkeley site if it were being planned from scratch today.[1]

The Merced site was selected after a long search which went from an initial list of over eighty sites to a final three that were the subjects of environmental impact reports (EIRs). One of the three sites fell out largely as a result of the findings of the EIR. The final decision was largely based on the certainty of land and water availability in Merced. The site will consist of 2,000 acres being donated by a charitable trust, which owns a 7,000 acre ranch in the rolling hills bordering the San Joaquin Valley.

Unlike the flat valley floor where agricultural operations have altered the landscape more than in any other part of California, the site is much as it was 150 years ago. Except for cattle grazing, it has never been exploited for other uses as far as we can tell. Unlike

Berkeley it has no creeks. What it does have are vernal pools, which are ponds formed by winter rains over hardpan soils. Because of the differences in soils and water, the pools stand in sharp contrast to the grasslands around them. In the spring, plants in these pools flower in rings, and, as the waters recede, different species predominate. In a wet winter, such as the El Niño of two years ago, the flowering vernal pools are a spectacular, although ephemeral, natural phenomenon, not unlike the fall leaves of New England. The pools are also inhabited by tiny shrimp, which hatch, breed, and lay their eggs during the brief period of inundation. The eggs, or cysts, fall to the bottom of the pool where they can remain in the dry soil for several years until enough rain falls to fill the pool up again.

Open space preservation in new campus and community. *Illustration by Richard E. Scott, ASLA for the "University Community Concept Report," May 1999.*

Needless to say, the species variation created by these pools is fascinating to biologists, and several of the plants and crustaceans have been identified as rare or endangered. A major task of our planning of the campus and its surroundings will be to develop strategies by which development and preservation can coexist. Options include preservation of selected areas, restoration or replication of pools in other areas, or acquisition of off-site easements on a regional basis. Environmental concerns will not stop there. The new campus will approach building technology in ways that conserve and reuse resources, whether in terms of building materials or mechanical systems.

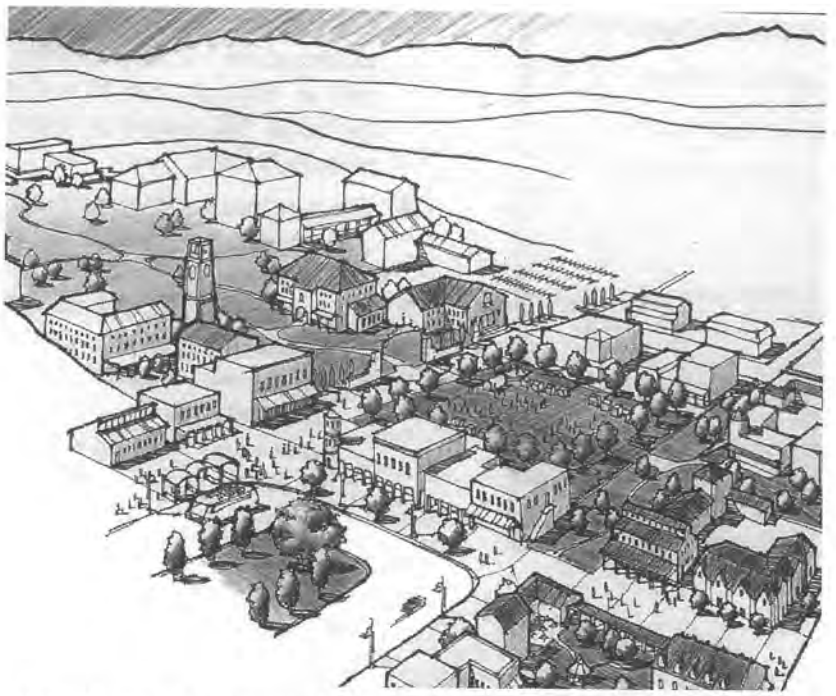
My second theme is community context. In studying the plans of the Berkeley campus made for the Hearst competition of 1897, I find it fascinating that most of them acknowledge the city that would eventually surround the campus, while campus plans of the post-World War II era usually did not. It has often been noted that Emil Bénard's winning plan aligned the campus to the city axis of University Avenue, while John Galen Howard shifted it to align with the Golden Gate. Even the Olmsted/Shepley, Bullfinch plan made for Stanford some years earlier on a site as removed from an existing town as the future Merced campus, indicated a future development of residential streets fanning out from the main Quad. How different was the approach of much postwar planning when campuses were planned almost totally in isolation from their surroundings except for a connecting road. At UC San Diego the early community plan shows the campus as a blank hole in the doughnut, and the campus master plan shows nothing of the community.

At Merced we are studying carefully how late nineteenth-century and early twentieth-century campuses such as Chico State University, the Claremont colleges, and UC Berkeley relate to the town next door. There are many reasons for this. First, a thriving campus town

will be enriched by, and itself help enrich, the campus. Second, it will help us create a pedestrian community. Think of how easy it is for a student to buy a book, a latte, or a pair of running shoes in each of the communities just mentioned. Think how easy it is for many residents of these towns to walk, not drive, to the campus art gallery or theater.

Finally, a town can provide many of the things that we tend to think of as campus functions, but which might be as effectively provided off campus. Does a campus have to build a fitness facility? Perhaps it would be cheaper and easier to make a deal with 24 Hour Nautilus or Gold's Gym. Does a campus need to provide a huge percentage of student housing or can developers in town do better? Our Merced challenge is less to figure out what our campus/town interface should look like than how to make it happen. Irvine represented an attempt, in part successful, to link town and gown, but at Irvine the campus and the surrounding town were planned by an autocratic architect, with, as clients, a strong chancellor and a family-owned land company.

Even if an architect like UC Irvine's William Periera were still to be found, it is doubtful today's citizens would grant him and his clients carte blanche to proceed. The reason is the growth of community activism. The idea of telling your neighbors what you are planning to do, listening to their concerns, and even learning from their comments and improving your plan is not new. But the concept is somewhat new to the University of California. We were pushed in part by the California Environmental Quality Act of 1970, which mandated public involvement, but the phenomenon was national and as much a product of people like the city-planning revolutionary, Jane Jacobs, as it was of environmentalists. So far in Merced, I can say that citizen input has only been positive. We have learned immeasurably every time we have opened the process.



Possible interface between the new campus and its new town. *Illustration by Richard E. Scott, ASLA for the "University Community Concept Report," May 1999.*

My third theme is that of the network. As with environmental awareness, it has become a truism that the world has changed. But universities have been "networked" for a very long time. I remember a paper Berkeley's Professor Mel Webber wrote in the 1960s on the subject of "community without propinquity."[2] Webber was, in part, debunking the traditional concept of "neighborhood" by showing how the average person (read: "average professor") had contacts nation- or world-wide. Now the internet permits a more efficient way of making these contacts, and internet technology, which started in academia, has become a part of everyday life. Long before a spade of earth is turned on the site, we will have instructional centers in other parts of the San Joaquin Valley wired to each other and to our existing campuses. Our first research initiative, the Sierra Nevada Research Institute, will link researchers at several campuses and research in several parts of the Sierra Nevada and the valley.

It is unclear how these networks will impact the physical form of the new campus, but I will make some guesses. First, some housing may be in the form of a motel rather than a dorm. The internet will permit classes for professional training, re-entry students, and others to be directed to students at home who have a need only for an occasional weekend or weeklong on-campus session. Second, central administrative services may be much smaller. Student services such as registration, bill paying, student jobs, and so forth can all be put on line, significantly reducing the need for many of these services to be in a central location. Human resources, purchasing, and other housekeeping functions can be put on line or even contracted to outside vendors. Finally, the library may be a very different place (or places) in contrast to the central and imposing building of a traditional campus.

It would be foolish to assume too much of the impact of technology. The University of California has a traditional niche market as the premier public sector provider of fulltime, residential, undergraduate education in California. I don't think UC Merced will turn its back on that market, and to the extent that the needs of these students dictate familiar campus forms, I expect we will see them. The three themes that have guided UC Merced so far: environmental awareness, community context, and the network are now responsible to the university's future.

ENDNOTES

1 See the article by Robert Charbonneau, "Strawberry Creek: The Making of an Urban Stream," in this issue.

2 Melvin Webber, "The Urban Place and the Nonplace Urban Realm," in Melvin Webber, et al, *Explorations into Urban Structure* (Philadelphia: University of Pennsylvania Press, 1964).

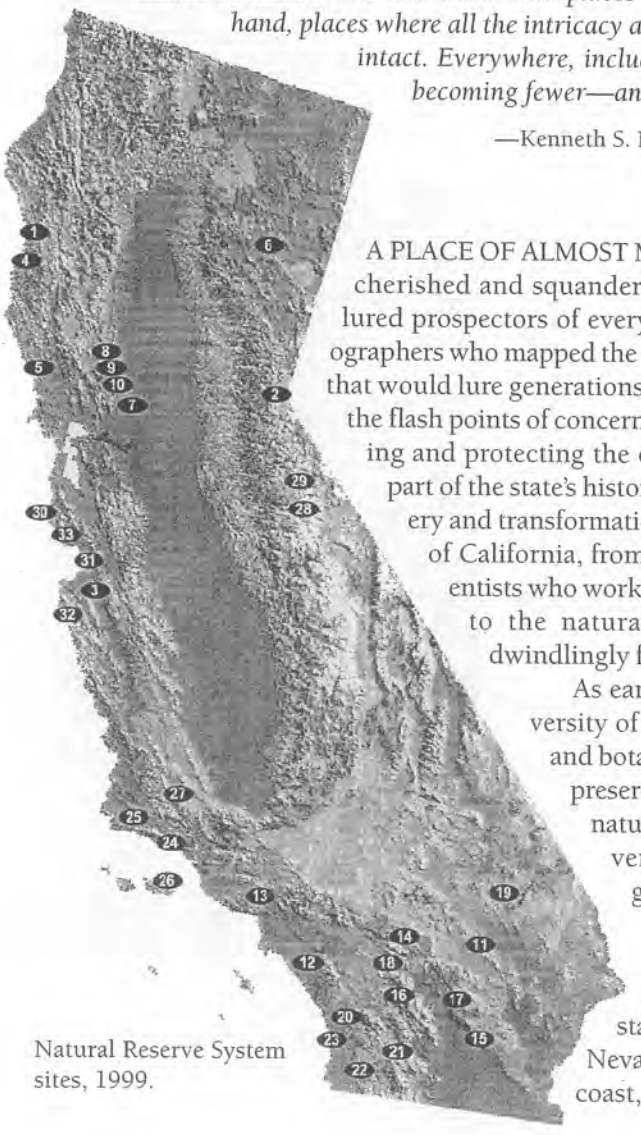
STUDYING NATURE IN NATURE

THE HISTORY OF THE UNIVERSITY OF CALIFORNIA NATURAL RESERVE SYSTEM

Margaret Herring

The most basic rules of the world—the ones we all live by—are ecological rules. You can't study them or even perceive them very well in a classroom or laboratory. It is imperative to go out on the mountainside, watch the rain fall over a valley, dig into the earth beneath a fallen tree, or wade a creek for cobbles with sources upstream. The best work in the natural disciplines all starts with observations in nature. We need those wild places where we can study nature first hand, places where all the intricacy and marvel of the natural world is intact. Everywhere, including California, those places are becoming fewer—and more precious.

—Kenneth S. Norris, Founder of the University of California Natural Reserve System.[1]



Natural Reserve System sites, 1999.

A PLACE OF ALMOST MYTHIC BOUNTY, California has both cherished and squandered its natural wealth. Its bounty has lured prospectors of every stripe, including naturalists and geographers who mapped the minerals, water, timber, and grasslands that would lure generations of fortune seekers and would become the flash points of concern in the twentieth century. Understanding and protecting the environment of California has been a part of the state's history, growing in tandem with the discovery and transformation of its vast resources. The University of California, from its beginning, has been home to scientists who worked to understand our vital connections to the natural environment and to protect the dwindlingly few places to study those connections. As early as 1870, Joseph LeConte, the University of California's first professor of geology and botany, spoke out about the importance of preserving California's "magnificent field" of natural resources.[2] A century later, the University of California had established a growing system of living laboratories to protect samples of that whole magnificent field. Today, this system includes thirty-three reserves across the state, from the eastern slope of the Sierra Nevada to submarine canyons of the Pacific coast, where students and researchers study

Professor Joseph Grinnell in the field. *The Bancroft Library (BANC PIC 1973.044).*

the natural systems and processes of the California environment. The University of California Natural Reserve System reflects the natural bounty of California, as well as the scientific heritage and vision of those who made it happen.

Part of the scientific heritage of today's ecological studies can be traced to Professor Joseph Grinnell, who in 1910 became the first curator of the Museum of Vertebrate Zoology at Berkeley. Disturbed by the accelerating rate of development at the turn of the century, Grinnell warned of "changes to be wrought in the next few years vastly more conspicuous than those that have occurred in ten times that length of time preceding."[3] To Grinnell, this rate of change created new responsibilities for science.

Up until then, natural history museums were primarily exhibits of the world's wonders collected by far-flung explorer-naturalists for the amusement of urban patrons. These largely uncatalogued collections gave museum visitors a window into the marvelous diversity of the newly explored world, but as a hodgepodge of souvenirs and curiosities, provided little of systematic value for further study. Grinnell sought to change all that. He proposed a research museum that would concentrate on a systematic study of California, in particular its vertebrate diversity. He devised a rigorous method of recording observations from the field as part of each collection "to be as permanently valuable as we know how."

Grinnell saw his work as a protected record of a rapidly changing world, focused on a particular region, with a systematic collection to provide the basis for long-term studies well into the future. He understood the value in such a record. "This value will not, however, be realized until the lapse of many years, possibly a century, assuming our material is safely preserved. And this is that the student of the future will have access to the original record of faunal conditions in California and the west wherever we now work."[4]

A rigorous record of natural history was just

Researcher climbs an oak to examine the nest of an acorn woodpecker at the Hastings Natural History Reservation in the upper Carmel Valley. *Photograph by Galen Rowell.*

one part of his vision. In order to protect sites for close and long-continued study, Grinnell helped to establish the Hastings Natural History Reservation in Carmel Valley, where students and scientists could observe the natural world firsthand. In 1935, the Hastings Reservation was one of the first scientific field stations in the nation, where exploration and discovery were focused on a discrete landscape through time. [See number 3 on the map shown at the beginning of this article.]

As Grinnell had foreseen, changes in California continued to accelerate. Following World War II, many people who had come to California for the war effort stayed on and settled into new sprawling communities. The GI Bill offered many the opportunity for a college education, and the state of California responded with several new campuses.

Wilbur ("Bill") Mayhew was an undergraduate on the GI Bill at UC Berkeley just following the war. Bill had spent much of the war in the Indian Desert and the Sahara, enduring sand storms and living in tents. "I swore if I lived through the war I would never go back to the desert again, " he said years later, after a long career at UC Riverside as professor of zoology and, yes, as a desert ecologist.

> When I entered Berkeley in 1946, Grinnell had recently passed away. He had done an enormous amount of original inventories of natural communities where no one had scientifically surveyed before. I was able to read his field reports from the 1920s and 30s. Grinnell was often the first one to look at these places, and there was an enormous amount to describe. Even when I came along, we were looking at basic biology, questions of presence or absence. We did not realize that what we were counting would soon be gone. [5]

The sudden increase of college students brought on by the GI Bill created a shortage of college teachers, and Mayhew was hired shortly after his graduation to teach at the new UC Riverside campus. Grinnell's systematic approach to the study of nature defined Mayhew's teaching, as he took his students throughout southern California to observe firsthand the region's natural diversity of coastline, sage scrub, mountains, and desert. Occasionally, they resurveyed Grinnell's meticulously documented sites. "It was a thrill, of course, to revisit these places," Mayhew remembered. "But it soon became apparent that many of them were disappearing." In the mid-1950s, the Los Angeles area was growing rapidly. "All too often we would arrive to find the place bulldozed over, fox dens replaced by apartments. There was no way I could predict what I'd be able to show my classes from one year to the next." Instead of observing the natural world, field biologists were witnessing its steady destruction.

Professor Bill Mayhew in the field. *Photograph by N.H. (Dan) Cheatham.*

Among the new generation of field scientists inspired by the methods of Grinnell was Ken Norris, who later became professor of natural history at UC Santa Cruz, a famous teacher and expert on both deserts and oceans. As a graduate student at UCLA in the mid-1950s, Norris studied the life histories of fringed-toed lizards, a species whose distinctive toes help it navigate through loose wind-blown sand in desert dunes. The postwar boom had begun to sprawl across his earliest study sites in the Los Angeles basin, so Norris, too, navigated far into the desert dunes

to a remote study site in the Coachella Valley. There, a broad crest of sand rises from the valley floor, blown by winds funneled through the San Gorgonio Pass. Collecting data for his doctoral thesis, Norris followed the lizard populations until bulldozers leveled his study site to make way for a new hotel and access road. Palm Springs, drenched in newly tapped ground water, sprawled out to the dunes and engulfed Norris's research.[6]

Development of the California desert was a concern to others at the time, including Philip Boyd, a regent of the University of California. Boyd had come to Palm Springs from back East on recommendations from his physician for the curative desert air. He fell in love with the desert, made it his home, and eventually represented the area in the state legislature. Boyd wanted to establish a place where people could come to learn more about the desert he loved. In the early 1950s, he set aside forty acres near Palm Desert to showcase the natural features of California's arid lands, and hired Bill Mayhew, the young biology professor from UC Riverside, to advise him in his plans. Eventually Mayhew was invited to bring his classes from campus to study at the Living Desert.

The Natural Reserve System's Philip L. Boyd Deep Canyon Desert Research Center. *Natural Reserve System.*

"Forty acres of protected land seemed great to me," remembered Mayhew. "But Boyd had a bigger vision." Farther up the canyon, Boyd owned nearly three sections of land. "When he took me up there and offered it as a study site for my classes, I thought I was going to have a heart attack!" Across the rocky fan, dry streambeds recorded a history of floods. Farther upstream, the canyon narrowed to a steep-walled gorge, carved by occasional torrents of rocks and water. Centuries-old barrel cacti dotted the slopes, long protected from floods and intruders. The landscape of Deep Canyon seemed ideal for large-scale desert studies. [See number 15 on the map.]

But Boyd's vision was larger still. The sections he owned were former railroad lands, in a checkerboard pattern touching only at the corners. "Boyd knew we would need to purchase the adjacent sections to provide a solid boundary. He envisioned a protected natural reserve that stretched from the desert floor all the way up to the crest of the mountains."

In 1959, Boyd donated to the UC Riverside biology department nearly three sections in Deep Canyon as well as funds to purchase three adjoining sections for the establishment of a desert research center. "I never would have imagined such a thing was possible," Mayhew remembered, but Boyd knew that it was not something that could be put off. Even desert lands were developing rapidly, and what was not protected could be lost.

The protection of Deep Canyon for research and teaching was visionary. Its 16,300 acres are today worth many millions of dollars. But few shared Philip Boyd's vision at the time. "Many attempts had been made over the years to obtain individual parcels of natural land, and nearly all had failed to pass judgment of University administrators," Norris later recalled. Even Boyd's gift to the Riverside campus was viewed by many in the administration, and even in the biology department, as a white elephant with more problems than uses. Other potential field sites offered as gifts to the university had been turned down by campus administrations, or, if accepted, later sold or developed. Even on campus, protected land for field study could not be assured. Campuses were growing rapidly, and the need for more parking lots, more dormitories, or more athletic fields always had priority with campus administrators. Norris described a growing cynicism and frustration among field scientists as field sites were lost and not replaced. "Never, it seemed, did [campus] planners realize that natural areas represented a primary University use."[7]

As California's building boom continued, more study areas were lost to development, and with the loss of natural lands came a decline in natural populations. A handful of university professors, including Ray Cowles, Ledyard Stebbins, and A. Starker Leopold, recognized the problem, but in the 1950s, the social tide was not running in the direction of conservation. Norris summed up the feelings of many naturalists at the time. "We felt we were being excluded by social change from our lands, like the American Indians, and like them, we needed reservations to protect ourselves."[8]

In the early 1960s, after witnessing the loss of site after site, Norris had seen enough. He recruited help from Mayhew, Cowles, and several other colleagues across the state to come up with a plan. But this plan was not to be like any of the efforts of the past. Previous plans had been campus-based, centered around a single parcel of land. In rare cases an individual site had become part of an individual campus, such as UC Berkeley's Hastings Natural History Reservation and UC Riverside's Boyd Deep Canyon. More often, though, such individual efforts were seen as full of problems, and proposals for research and teaching reserves were vetoed by the campuses. Who could use the Riverside reserve, for example? Would the same rules apply to the Berkeley reserve? Could future campus administrators change the rules? How secure, after all, was a campus-based reserve for long-term study? And how, if at all, could one undeveloped piece of real estate set aside for research fit into the university's mission to serve the whole state of California?

Bill Mayhew and Ken Norris in the field.
Photograph by Jeff Kennedy.

Clearly, a new plan would have to address these concerns. A successful plan would have to go beyond the needs of field scientists and accommodate the needs of the university as a whole. The university would accept only a plan that was as broadly based as the entire state and was designed for the long-term life of the whole system. Like the university itself, this reserve system would have to be both far-reaching in scope and firmly pragmatic. Such was the plan that Norris and the others designed.

In many ways, Norris's plan for a natural reserve system was as revolutionary as Grinnell's field study methods had been a half a century earlier. It radically extended previous efforts that had been largely individual attempts to save doomed sites just ahead of the bulldozer. Instead, the plan described a systematic collection of representative sites that would characterize the natural diversity of California as a whole, and that was designed for long-term studies in a broad range of disciplines. It addressed the need for a programmatic, universitywide plan, centered in the office of the president, that would be integral to the university's mission of research and teaching, and provide the extension of information to local communities throughout the state.[9]

Such a comprehensive plan would have had little chance of gaining support had it been proposed a few years earlier. Through the 1950s few people understood the coming pressures of a rapidly expanding human population. The large majority of the state's population had arrived recently and the rate of landscape change was not visible to them.

But during the early 1960s a "great revolution of thinking swept America and the world," Norris recalled, "until the majority of educated people came to understand at least the broad outlines of this greatest of human dilemmas."[10] The revolution was fueled by growing popular knowledge about the ecological hazards of over-population, nuclear fallout, chemical pesticides, and industrial pollution. The problems seemed particularly acute in California, with well-publicized stories of poisoned lakes, urban sprawl, and smog. Suddenly, the concerns of a handful of field scientists took on a larger public voice. In 1963, when Norris and his committee presented their proposal to the university president, Clark Kerr, to protect ecological reserves for teaching and research, Kerr was very interested.

"I was impressed with the tremendous variety of ecological systems in the state of California," Kerr recalled later. "If any place in the world had one of everything, it was California. It was worth preserving some of this great variety." At the same time the NRS proposal had come to him, Kerr and the regents were looking for land for three new University of California campuses and finding few prospects. "The Regents and I were impressed that an awful lot of California was disappearing, and disappearing forever. . . There was this feeling that California was just going under macadam and concrete."[11]

However, land conservation was not the sole reason for Kerr's support. "I was very much aware of the big changes that were coming to the field of biology. The 'old biology' was disappearing pretty rapidly along with the Linnaean classification system. The future belonged to biologists in laboratories, and not to those out in the field. . . But I saw value in the old biology at the same time I saw prospects for the new biology."[12] With President Kerr's endorsement, the board of regents approved the establishment of the Natural Land and Water Reserves System or later known as the Natural Reserve System in 1965, and Ken Norris was appointed chair of the Universitywide Faculty Advisory Committee.

The brand-new reserve system began with a handful of sites that were already part of the university system, including Grinnell's biological field station at Hastings Natural History Reservation and Philip Boyd's Deep Canyon Desert Research Center. As important as these sites were, their acquisition had been mostly serendipitous. Now they were to form the backbone of a larger collection of reserves to represent the major habitat types throughout the state. One of the first tasks of the new reserve system was to design a systematic approach to site identification and acquisition. Using vegetation classification systems to identify the full range of landscape types that should be represented, the Universitywide Faculty Advisory Committee identified a long list of sites around the state that met the system's scientific requirements. Having only the barest of operating funds, the fledgling organization had to focus primarily on lands that might be acquired through donation or

Deep Canyon Reserve. *Photograph by Ansel Adams. Courtesy of California Museum of Photography, UC Riverside.*

management agreement. "We all had been working in the field, and we all had our favorite places, and knew about other places that might fit the bill," remembered Mayhew. So the committee drew up a wish list of eighty-four possible sites for the new reserve system.[13]

During the spring of 1966, Norris set out to visit all of the sites included in the committee's list, and later to report on the feasibility of each as a reserve. Crisscrossing the state, Norris followed up on each of the committee's recommendations, from the Albany Flats on San Francisco Bay to the Brock Mountain Peninsula on Lake Shasta. He visited a site long used by Ledyard Stebbins along the 17 Mile Drive near Carmel. "Not only did I have to pay $2.00 to get in through a very fancy gate, but it was obvious that chances of obtaining [the site] are very slight," he wrote to the committee. "Property values are extremely high, and [the owners] show no willingness to relinquish their hold."[14]

He found a more welcoming reception at Point Mugu Lagoon, part of the U.S. Naval Missile Center, where he described the officer in charge as "very cooperative and cognizant of the natural values of the lagoon." However, Norris noted, "for all the pious conversation which passed between us, I found that the Navy had been dredging the entrance to the lagoon during the time of my visit. No one seems to know why, among those concerned at

the base, except that 'somebody' needed sand." Thus, some sites were crossed off the list.

Wherever possible, Norris invited experts to accompany him and show him the special features of the site. On Año Nuevo Island, off the coast of San Mateo County, he was joined by Dr. Richard Hubbard of the Stanford Research Institute, and the two men went on a crawling expedition among the island's huge elephant seals. [See number 30 on the map.] "By crawling prone through the nitrogenous sand of the haul-out beaches one can literally move among the animals as one of them," Norris recalled. "I was able to watch heart rates in elephant seals by directly watching their sternums move. When such an animal awoke, inches away, I simply flicked a little sand over my back like his friends normally do, grunted a bit, and he went back to sleep."[15]

Norris noted other natural values of the island and considered its alternative future as a destination for tourists less inclined to crawl seal-like through nitrogenous sand. He concluded that Año Nuevo Island would be "worth much effort to bring it into the system" and eventually it was.

Professor Joseph Grinnell and wife-to-be at Eaton Canyon. *The Bancroft Library (BANC PIC 1973.044).*

In the end, Norris presented the committee with reconnaissance reports on all their suggested sites. His document reads like the journals of early explorers: profoundly knowledgeable, yet open to surprise and discovery. He praised Santa Cruz Island [see number 26 on the map] off the Santa Barbara coast, then privately owned and now part of the NRS, as a place of great scientific interest, "a little Galapagos Island." He also recommended acquisition of the San Joaquin Marsh in Orange County [see number 12 on the map], where he marvelled that within a five minute walk of the UC Irvine campus a researcher can be in one of the state's major stopovers for migratory water fowl.

In many ways, the Natural Reserve System became the university's new frontier, ripe for exploration. Norris's report provided not only a blueprint for acquisitions, but also a personal introduction to some of the state's most scientifically interesting places. Immediately, Norris, Mayhew, and many others began using the reserves as study sites for their classes. Each year, returning classes built on studies conducted in previous seasons. Instead of facing unpredictable destruction of their study areas and equipment, students and researchers were able to return year after year to pursue questions of long-term consequence and to build knowledge about the environment of California.

The Natural Reserve System owes much to the heritage and vision of many people who loved the land and saw its value as a place for learning. Many of the 120,000-plus acres encompassed by the NRS today were given as gifts by families and individuals who shared that love of the land. Other funds have come from foundations that recognize the importance of understanding the complexity of natural systems.

In much the same way as Joseph Grinnell once foresaw the value of field studies at the turn of the twentieth century, Ken Norris, looking back on the success of the Natural Reserve System after more than twenty years, reflected on the system's future:

> As time goes by and the state's population grows, the reserves will become more and more precious. Experience teaches us that scholars of many kinds will use the reserves. These people are going to uncover new stories of the animals and plants and the geology and soils of natural systems. We can't know now what scientific questions might arise, but we can make sure the resources to answer those questions are available. What we're doing is opening the doors and providing the opportunities for those who follow in our footsteps.[16]

ENDNOTES

1 Natural Reserve System brochure, *Sierra Nevada Aquatic Research Laboratory* (January 1989), 2.

2 Michael L. Smith, *Pacific Visions: California Scientists and the Environment, 1850-1915* (New Haven: Yale University Press, 1987), 114-7.

3 Joseph Grinnell, "The methods and uses of a research museum," *The Popular Science Monthly* (August 1910), 163-9.

4 Ibid.

5 Wilbur Mayhew, notes from conversation on January 24, 1999, with Margaret Herring. Natural Reserve System archives, University of California Office of the President (UCOP). (The following Mayhew quotes are from the same source.)

6 Kenneth S. Norris, "California's Natural Land and Water Reserve System," *BioScience*, 18:5 (May 1968), 415-7.

7 Ibid.

8 Ibid.

9 Norris to Kerr, June 4, 1963, Natural Reserve System archives, UCOP.

10 Norris, "California's Natural Land. . . ."

11 Clark Kerr, notes from conversation on March 12, 1999, with Margaret Herring. Natural Reserve System archives, UCOP.

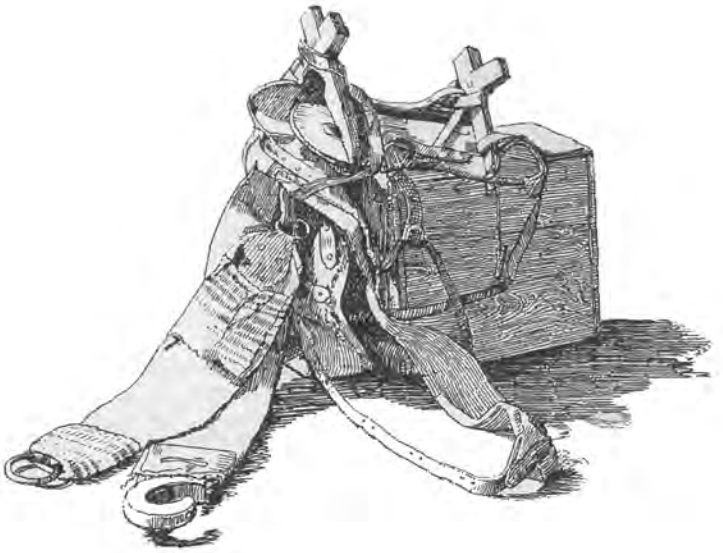
12 Ibid.

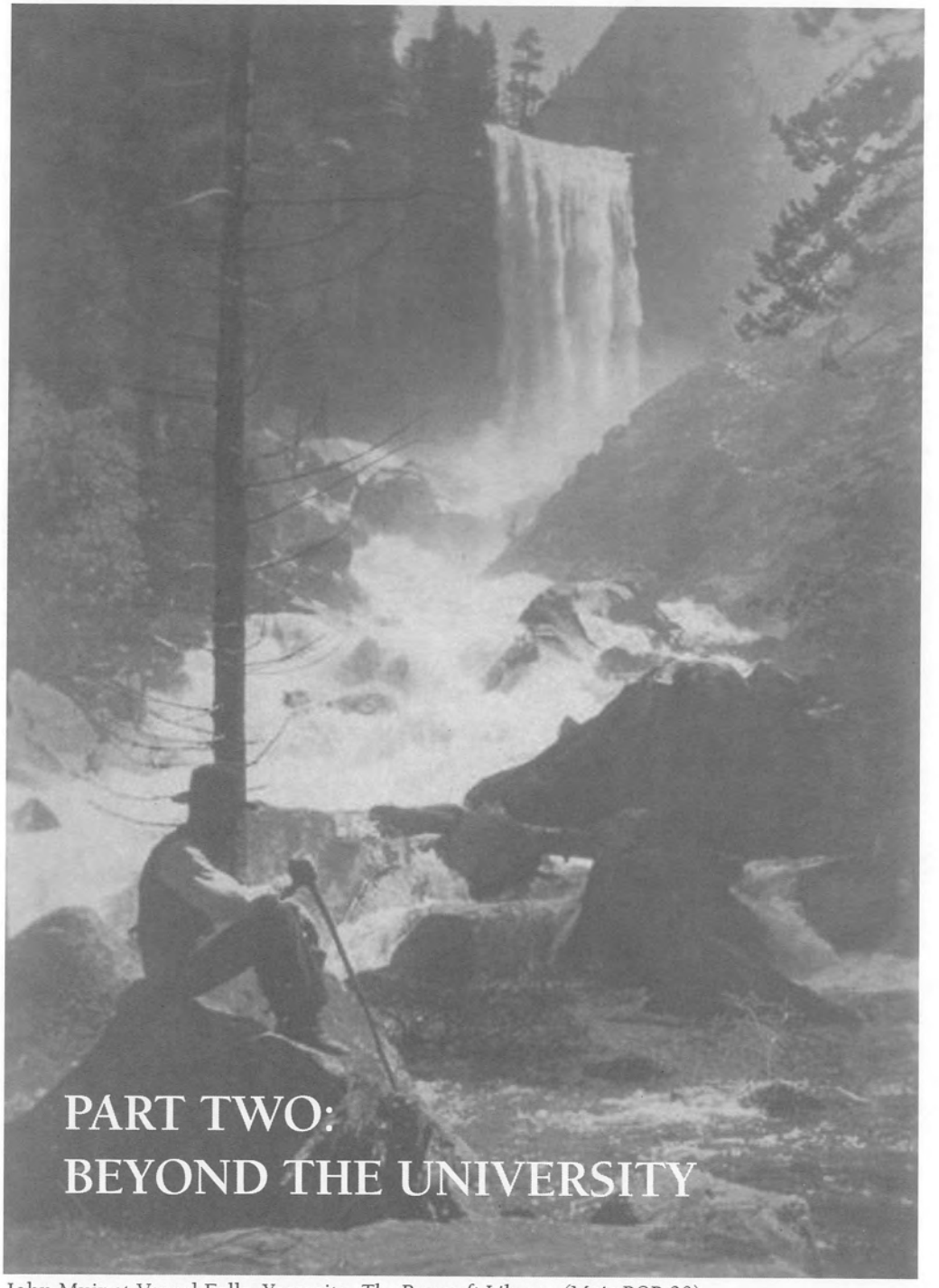
13 Mayhew, conversation, 1999.

14 Kenneth S. Norris to NLWRS Advisory Committee, June 15, 1966, Natural Reserve System archives, UCOP.

15 Ibid.

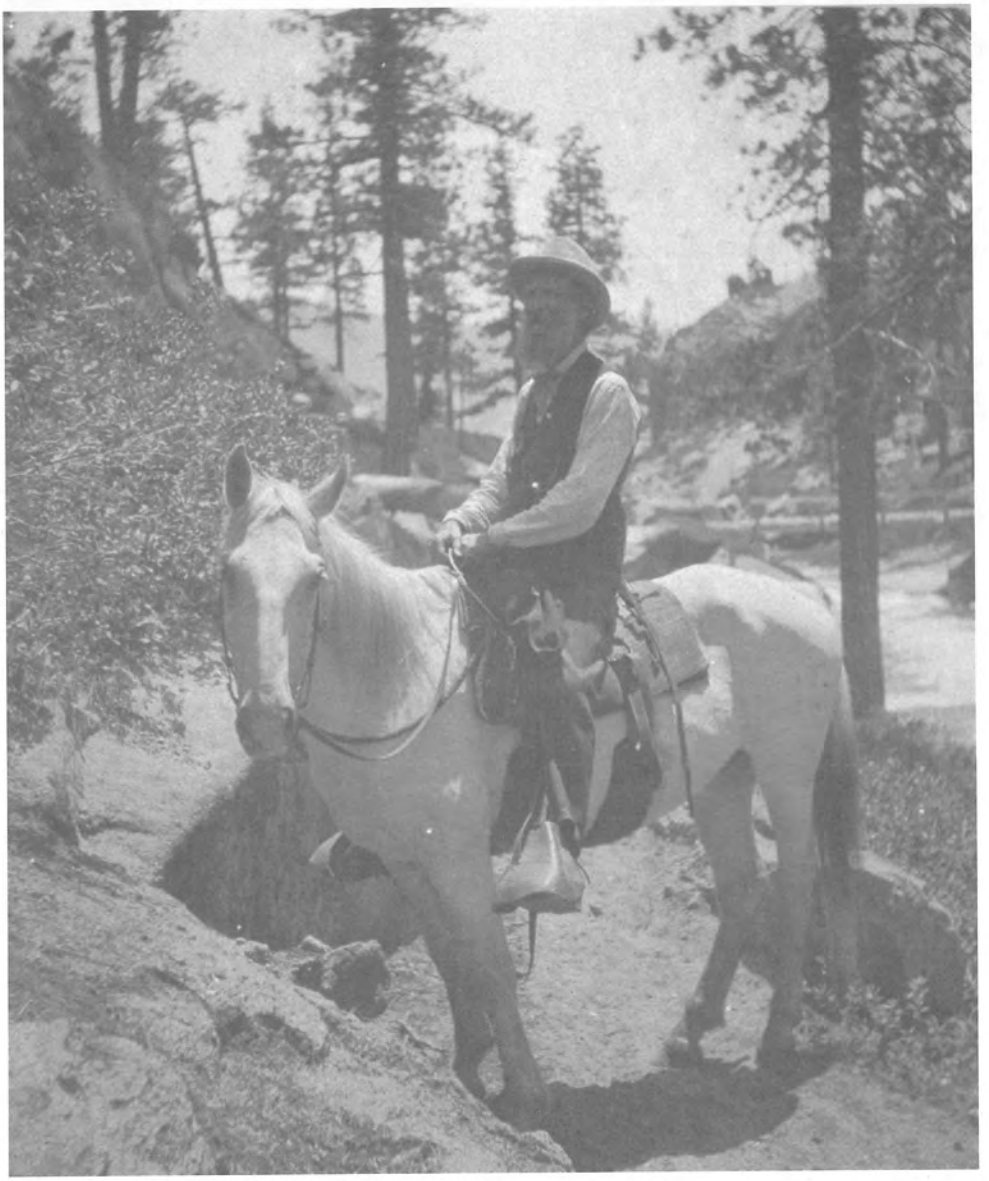
16 *Natural Reserve System, The First Twenty years*. Regents of the University of California, 1985, 24.





PART TWO: BEYOND THE UNIVERSITY

John Muir at Vernal Falls, Yosemite. *The Bancroft Library (Muir POR 29).*



John Muir. *The Bancroft Library (Muir POR 37).*

"PASSIONATE LOVERS OF NATURE"

THE UNIVERSITY IN THE HIGH SIERRA

Carroll Brentano

ON THE SEVENTH OF AUGUST 1870, Professor Joseph LeConte of the University of California and John Muir, mountaineer and naturalist, met for the first time, at the foot of Yosemite Falls. Not as historic a meeting as that of Stanley and Livingstone, but important. Important for the two men, giving each a new dimension to their lives and studies, and even important in the history of science in that it led to new knowledge of the behavior of glaciers. [1]

A third person, not present that day, had brought the two men together and is essential to the story of the event and its meaning. Jeanne Carr, for ten years a close friend of Muir's and neighbor and acquaintance of LeConte's and married to his fellow professor, Ezra Carr, had given each the news of the other's summer plans and locations, and urged them to meet. After they met and shared ten days of camping and exploring, Muir wrote her of a moonlit walk he and LeConte had taken at Lake Tenaya: "you were remembered there and we cordially wished you with us."[2]

This essay will tell a little of the story of the beginnings of the connections between the new university in Berkeley and the High Sierra—a story that culminates with the founding of the Sierra Club in 1892 at the instigation of so many university people. Here, the story concerns an earlier time and the interconnections of these three people: a faculty member, Joseph LeConte, a faculty wife, Jeanne Carr, and their relationships with the hero of all Sierra stories, John Muir.

We begin at the University of Wisconsin, itself only thirteen years old, in 1861, with the enrollment as a freshman of the twenty-two year old Scottish farmer and inventor, John Muir. He tells in his autobiography that he had gone to the state fair in Madison to demonstrate an invention and there discovered that

Joseph Le Conte, *A Journal of Ramblings through the High Sierra of California,* 1875. Frontispiece.

he could enroll in the university.[3] In his three years as a student, he encountered the professor of natural science, Ezra Carr and his family. It was, according to legend, a Carr child who brought Muir home and touched off the friendship between the student and the professor's wife that was to last for most of their lives.[4] Today, the letters he wrote to Mrs. Carr between 1865 and 1877 are one of the best sources we have for Muir's life and for his scientific discoveries, philosophy, and personal musings. Most of the letters were written from his preferred residence, the valley and surrounding peaks of the Yosemite.[5]

Portrait of John Muir by David Muir. *The Bancroft Library (Muir POR 21).*

Jeanne Smith was born in Vermont in 1825, was married at nineteen to Ezra Carr, whom she followed to Wisconsin and then to California as his career as a professor of "natural science" advanced—or at least changed.[6] Ezra Carr, born in 1819, had had a broad education in medicine and science at several eastern colleges, including Rensselaer Polytechnic Institute.[7] By the time the couple were settled in Oakland where the University of California was just opening in the fall of 1869, they had four children aged three to thirteen.

Another new professor for the infant university arrived with his family in the same fall of 1869. Joseph LeConte was born in South Carolina in 1823 and, like Carr, had a medical degree: Carr was to teach agriculture and chemistry, and LeConte, botany and geology.[8] Both men had, at different times, been students of Harvard's famed naturalist Louis Agassiz. The two couples must surely have become acquainted immediately, but what their relations with each other were is not known; we only know that Muir expected LeConte to recount to Jeanne Carr the Yosemite meeting of August 1870.[9] For his part, Joseph LeConte records the meeting with Muir:

Joseph LeConte, circa 1874. *University Archives (UARC PIC 13:279).*

> Stopped for a moment at the foot of the falls, at a saw-mill. . . . Here found a man in rough miller's garb, whose intelligent face and earnest, clear blue eye excited my interest. After some conversation, discovered it was Mr. Muir, a gentleman of whom I had heard much from Mrs. Professor Carr and others. He had also received a letter from Mrs. Carr concerning our party, and was looking for us.[10]

Jeanne was intimate enough with LeConte to have, in 1872, combined a letter from Muir to herself with one from Muir to LeConte, for an article she hoped to have published.[11]

Whatever it had been, the relationship of the Carr and LeConte families was brought to an end by 1874 with the moving of the LeContes to Berkeley and the, far more dramatic, dismissal of Ezra Carr from the faculty. Carr versus the university is a many times told story that

Ezra Slocum Carr, circa 1873.
University Archives (UARC PIC 13:405).

begins with the arrival of Daniel Coit Gilman as University of California president in 1872. Gilman brought from his own background of the Sheffield Scientific School at Yale a vision of a research-centered university on the German model. Ezra Carr, to quote a biographer, "was not really a scientist."[12] Like many other American agricultural chemists of his day, he depended on his medical training for knowledge, and his acquaintanceship with farmers for practical experience.

But Carr was unusual in the sometimes bizarre devotion he gave to the popular agricultural causes of his day; in California these were political, and centered in the sudden emergence and growth of the Granger movement, later incorporated in the Dolly Varden Party that played a large role in the state elections of 1873.[13] Carr, as the one professor of agriculture in the state, became first an organizer of the Grange, then its flag carrier, then its biographer. An active Granger himself, along with his wife, he was the author of its history, *The Story of the California Grange* (1875), and in the end, its martyr, leading a fruitless Granger-inspired attack on the University of California. In his history he quotes a Granger committee report on the state of education and the university: "We should not fail to mention that our worthy brother, Professor Carr, gave us material aid in all this work . . ."[14] "All this work" was the gathering of evidence for a report to the Legislative Committee on Education (January 1874) about the dereliction of the university's duty toward the education of farmers.

Subsequently, the Grangers, believing that a bill embodying their demands would pass, and then believing that the promises of reform made to them by the regents would be honored, withdrew the bill. They claimed that had the bill gone forward, the university would have become "a far greater honor to our State than we can ever hope to see it under the blighting hand of a selfish and moneyed aristocracy and monopoly."[15] Among the things they demanded were, in addition to campus grounds dedicated to farm crops, a "plain, convenient, and commodious farm house for the Professor of Agriculture."[16]

Jeanne Smith at eighteen, one year before her marriage to Ezra Carr.

The farmhouse was to be the campus home of Ezra and Jeanne Carr, but like the university career of Professor Carr, it had no future. After August 1874, Carr, refusing to resign, was fired by President Gilman. His supporters took revenge in 1875 by electing him state superintendent of education, whereupon he made his wife deputy superintendent, and became himself, by virtue of his position, an ex-officio regent of the university.

Meanwhile, in September 1874, as John Muir was ready to depart from his haven in Yosemite, he took a rather poetic leaving of Jeanne Carr: "I have been gath-


THE
PATRONS OF HUSBANDRY
ON THE
PACIFIC COAST.
BY
EZRA S. CARR, M.D., LL.D.
SAN FRANCISCO:
A. L. BANCROFT AND COMPANY,
1875.

ering you a handful of leaves . . . They are probably the last of Yosemite that I will ever give you. I will go out in a day or two. Farewell! I seem to be more leaving you here than there." Nevertheless, he does ask her to save the letter for possible copying later. He finishes by referring to the Carrs' defeat by the university, "I trust you are not now so sorely overladen."[17]

Muir must have been kept abreast of the Grangers vs. the University of California struggle as it involved his friends the Carrs, since his letters to Mrs. Carr periodically contain joking references to her troubles. In November 1874 he writes "I wonder how you all are faring in your wildernesses, educational, departmental, institutional, etc." In June 1875: "Where are you? Lost in conventions, elections, women's rights and fights, and buried beneath many a load of musty granger hay?" and in July 1875, "good betide . . . you saved from the hawks and the big ugly buzzards and cormorants—grangeal, political, right and wrongical . . . "[18] Even five years earlier in a letter containing one of his most rapturous odes to the sequoia he had sympathized: ". . . for you are down a thousand fathoms deep in dark political quagg." [19]

John Muir's own life had not yet entered the "political quagg" as it was to do later with the saving of Yosemite and the losing of Hetch Hetchy. But his lot in the 1870s was clearly cast with the Grangers—not only did he give Jeanne his support by calling the enemies of her husband "those commonplace plotters that have so marred your peace," and "you must be pained by the shameful attacks made upon your tried friend LaGrange," but after she became the deputy superintendent of education, courtesy of her husband's election, Muir admonished her "don't grind too hard at these Sacramento mills."[20] Later, among their mutual close friends were the members of the Strentzel family of Martinez, all fervent Grangers. It was John Strentzel's daughter, Louie, that Muir married in 1880—to the expressed pleasure of Jeanne Carr.[21]

The sympathy between Muir and Mrs. Carr is perfectly obvious from their correspondence; whatever emotional role she played in his life,[22] it is clear that her staunch support for his rather bizarre way of life and her practical help in the promotion of his ideas, even her introductions to important personages, kept him going, both in and out of the mountains.[23]

They had come together originally, in Madison, Wisconsin, as fellow amateur botanists, collecting and exchanging plant specimens, which they continued to do throughout their long friendship. In the first preserved letter (September 1865), Muir wrote to Jeanne from a Canada that he found primitive and soulless: "In vain is the glorious chart of God in Nature spread out for them. So many acres chopped is their motto, so they grub away amid the smoke of magnificent forest trees . . . in my long rambles last summer I did not find a single person who knew anything of botany. . . . Do not these answer well to the person described in these lines: 'A primrose by the river's brim. . . .'" he writes, and goes on to thank "Dr. Carr . . . who first laid before me the great book of Nature, and [who] has at least shown me where these mines of priceless knowledge lie and how to reach them." In this same letter Muir mentions his loneliness and his longing for the world that Jeanne represented: learned, serene, a house "with its portraits of scientific men . . . amid the blossom and verdure of your little

kingdom of plants."[24] Science, beauty, and God were what they had in common.

John and Louie Muir and daughters at home, Martinez, California, 1901.
The Bancroft Library (Muir POR 61).

John Muir and Joseph LeConte certainly had in common a passion for science, but they were not both scientists in the full meaning of the term, even in the 1870s and even within their own definitions. Muir understood that LeConte's passions were not the same as his. He describes an incident that occurred

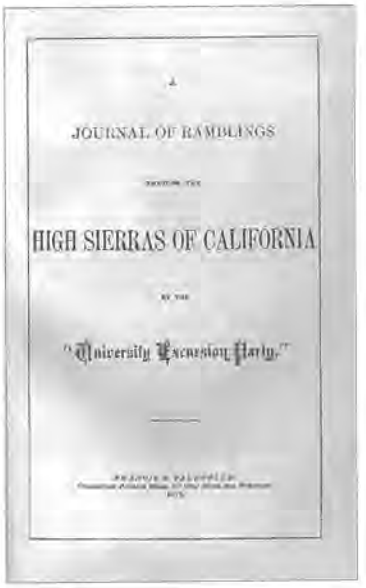
> when I was leading him to some small residual glaciers I had found. But his time was short; he had to get back to his classroom. I suggested running away for a season or two in time-obliterating wildness, and pictured the blessings that would flow from truancy so pious and glorious. He smiled in sympathy with an introverted look, as if remembering his own free days when first he reveled in nature's wild wealth.[25]

They were two personalities parting at a fork in the road.

A recent book called, and about, *The Botanizers* sheds light on the kind of friendships Muir had and the life he led.[26] The argument of the book is that in the United States of the nineteenth century there was, very broadly, a split, around mid-century, between the amateurs, "the botanizers," and the scientists, "the botanists." The former, mostly middle- and upper-class hobbyists, a large proportion of them women, continued to ramble through the countryside and woods, plant presses and notebooks in hand, collecting specimens of flowering plants. The latter, who had been indistinguishable from the former in the century's first decades, finding and identifying all the exotic examples afforded by the New World, later withdrew into the laboratory and left behind the taxonomic labors that both had previously pursued. A remark about LeConte by Muir makes the differences between them plain:

"I have always thought it was to be regretted that he allowed himself to be caught and put in professional harness so early."[27]

Joseph LeConte belonged to a new generation of scientists: his father Louis, born 1782, a plantation owner in the deep South, had had a chemical laboratory and scientific reference library in the house where Joseph grew up. Louis LeConte also created and maintained a botanical garden for which he, his sons, and interested visitors provided specimens. Joseph's education was as wide as his father's interests, including schooling in medicine as training for science, ornithology (later giving his stuffed bird collection to the Smithsonian), and the theory of evolution.[28]


A

JOURNAL OF RAMBLINGS

HIGH SIERRAS OF CALIFORNIA

"University Excursion Party."

After a varied education, finally, at age twenty-seven, LeConte simply moved, with wife and child, to Cambridge to study with Louis Agassiz, Harvard professor of geology and zoology, and at that time America's premier scientist. Given an academic degree, his fourth, from the brand new Lawrence School of Science, fortified by the teaching and company of the great Agassiz on field trips to view fossils and coral reefs, LeConte took up, one after another, three academic posts in the South beginning in 1851. He worked for the Confederacy during the war, and, teaching again during the carpetbagging era which he loathed, came with relief and anticipation to California in 1869.

The university was then in Oakland, where he joined his brother John, the professor of physics on the faculty. There Joseph rejoiced in "the climate, the splendid scenery, the active, energetic people, and the magnificent field for scientific, and especially for geological investigations, stimulating my intellectual activity to the highest degree."[29] It was a year later at the age of forty-seven that he joined nine university students for his first camping trip, the "university excursion party" described earlier, to the Sierra in August 1870.

LeConte made many other trips to the mountains; it was his habit to give fireside lectures to whatever students were with him after a day of observing as they hiked or rode along the trail. His talks, on glaciers, carbonate springs, salt and alkaline lakes, and of course, basic geology, were close to, if not identical with, his classroom lectures in South Hall on the Berkeley campus. The LeConte pedagogical method is expressed in the preface to his 1884 geology textbook: "I have tried, as far as possible, to awaken the faculty and cultivate the habit of observation, by directing the attention of the pupil to geological phenomena occurring and geological agencies at work *now* on every side, and in the most *familiar things*."[30] LeConte, although above all a teacher, was like a true academic a prolific contributor to scientific journals (in several fields) and producer of textbooks. In the lecture hall he was perhaps the most popular professor the university ever had.[31]

John Muir was a teacher too, but in a different way—"I care to live only to entice people to look at Nature's loveliness."[32] A researcher too, his way of informing was not in the classroom but by means of the written word, at first in letters to correspondents like Jeanne Carr, then, at her urging, in articles in newspapers and popular periodicals, and later in books. Although asked by no less a personage than Ralph Waldo Emerson and another, Asa Gray, to come to Boston, to Harvard or MIT, as a professor, his reaction was "I never for a moment thought of leaving God's big show for a mere profship, call who may."[33]

Like Muir and LeConte, among the founders of the Sierra Club in 1892, Jeanne Carr

was a polemicist for the causes she believed in, such as women's education, building libraries, and civic beautification. She served on the state board of the Grange, and was a trustee of the Throop Polytechnic Institute, the predecessor of Cal Tech. After moving to a Pasadena orchard in 1877 she wrote to promote the real estate values of the citrus industry: Helen Hunt Jackson is reputed to have said that Jeanne Carr could make "a wilderness, not only blossom, but repay the cost of its blossoming."[34] Her 1882 article, "The Crown of the Valley," in *The Californian,* recounts the early history of the San Fernando Valley, a report on its current status as agricultural land—what can be grown, and how to make it grow—in effect, a genteel sales pitch. It ends with a subdued lament for the fast-vanishing open land.[35] For although "we cannot live on climate, be it ever so tempered; nor upon scenery, however delightful to sense and soul," it is sadly true that

> Until recently, the higher foothills surrounding Pasadena have remained uncultivated . . . . But all this is changed. Eastern capitalists, borne hither by a sure instinct of gain, have bought the bee and bear pastures, and are bringing the water of remoter mountain streams to their residences. Already we look up to the hills and see the glimmer of lights at evening, where one year ago "Our Lord's Candlestick," the yucca . . . glorified the mountain solitudes.[36]

John Muir, Jeanne Carr, and Joseph LeConte discoverers and popularizers of the glories of the Sierra Nevada mountains were brought together by the University of California. In each, the early passion for nature began with botanizing, then as they matured, broadened into laboratory science for LeConte, exploration of the entire natural world for Muir, and in her later years, commercial horticulture for Jeanne Carr. They were some of the first to experience the now well-worn worship of the mountains of California. At the same time, filled with an enthusiasm and stamina we can only envy, they gathered, wrote about, and embraced the new world they were discovering—and lived to see it begin to disappear.

Joseph Le Conte, *A Journal of Ramblings through the High Sierras of California,* 1875, facing page 91.

ENDNOTES

1 Both men have written their recollections: Joseph LeConte, *A Journal of Ramblings through the High Sierra of California* (San Francisco: The Sierra Club, 1930), 56-113. (*Ramblings* was first published in 1875 and again in 1900.) John Muir described the meeting, calling LeConte a "passionate lover of nature," in an August 20, 1870 letter to Mrs. Carr in William Badé, *Life and Letters of John Muir*, 2 vols. (Boston and New York: Houghton Mifflin Company, 1923), vol. 1, 231-33, for glaciers, 285.

2 Badé, *Muir*, vol. 1, 232.

3 John Muir, *The Story of My Boyhood and Youth* (Boston and New York: Houghton Mifflin Company, 1913), 272-76.

4 Badé, *Muir*, vol. 1, 80-81.

5 The letters are principally found in the two volumes of William Badé's early, but still important biography of Muir (see note 1); and in John Muir, *Letters to a Friend*, ed. Wanda Muir Hanna (Boston and New York: Houghton Mifflin Company, 1915). The letters run from 1865 to 1879; Jeanne Carr died in 1903 but had been less important in Muir's life after her move to Pasadena in 1877 and his marriage to Louie Strentzel in 1880.

6 There is information about Jeanne Carr scattered throughout the Muir literature, and one biographical article: Jane Apostol, "Jeanne Carr: One Woman and Sunshine," *The American West*, 15:4 (July/August 1978), 28-63. Apostol has a brief bibliography.

7 Ezra Carr's career has been well covered in Ann F. Scheuring, *Science and Service* (Oakland, CA: Regents of the University of California, 1995), 11-19, 21-22. Scheuring quotes Eugene Hilgard (Carr's successor) on Jeanne as being "the better man of the two." 21.

8 Joseph LeConte, a very famous man in his day and looked upon as an example of the possibility of reconciling science, philosophy, and religion, wrote his own biography, *The Autobiography of Joseph LeConte* ed. William Dallam Armes (New York: D. Appleton and Co., 1903). The chapter on "Early Years in California," is a useful look at the university at its very beginning, and his *Ramblings* (see note 1) an awesome account of early tourist trips in very rough terrain. Another good source for the role of LeConte in the California science of the day is Michael L. Smith, *Pacific Visions, California Scientists and the Environment, 1850-1915* (New Haven and London: Yale University Press, 1987), 42-46, and passim.

9 Badé, *Muir*, vol. 1, 233.

10 LeConte, *Ramblings*, 56.

11 Badé, *Muir*, vol. 1, 317.

12 Scheuring, *Science and Service*, 18.

13 Ibid., 16-19; see also Verne A. Stadtman, *The University of California, 1868-1968* (New York: McGraw-Hill, 1970), 69-78, for a less friendly verdict on the whole controversy.

14 Ezra S. Carr, *The Patrons of Husbandry on the Pacific Coast* (San Francisco: A. L. Bancroft and Co., 1875), 187.

15 Ibid.

16 Ibid., 194.

17 Badé, *Muir*, vol. 2, 27.

18 Badé, *Muir*, vol. 2, 32, 52, 55.

19 Michael P. Cohen, *The Pathless Way, John Muir and the American Wilderness* (Madison: University of Wisconsin Press, 1984), 122-124.

20 Badé, *Muir,* vol. 2, 38, 68, 72.

21 In 1877 Louie Strentzel served on the state board of the Grange, along with Jeanne Carr: Apostol, "One Woman and Sunshine," 33.

22 Steven J. Holmes, *The Young John Muir, an Environmental Biography* (Madison: University of Wisconsin Press, 1999), is typical of the more modern considerations of John Muir's extraordinary life — an erotic element is admitted and discussed and who more than Jeanne Carr should bear the brunt of this post-modern theorizing? This reader of Muir's letters, however, finds no evidence for anything other than the relationship that their words express.

23 It must be admitted, however that Jeanne Carr could take a rather wifely (or motherly) tone, as in a letter of July 1872: "This is what you are going to do. . . . Pack up your duds . . . take your best horse and ride forth . . . You will live with us . . . whenever you are not exploring the Coast Range . . ." (that is, in her back yard), and she instructs him as one would a graduate student: "You will write up all your settled convictions, and put your cruder reflections in the form of notes and queries, not without scientific worth, and securing to yourself any advantage there may be in priority of observation." Then, when it is spring again in Yosemite, he can go back. Muir answered her argument that he should not cling to one place, with his own plan to spend only a month, instead of a winter, in town, and slyly assured her "I am learning to live close to the lives of my friends without ever seeing them. No miles of any measurement can separate your soul from mine." Badé, *Muir*, vol. 1, 338-40.

24 Badé, *Muir,* vol. 1, 142-43.

25 John Muir, "Reminiscences of Joseph LeConte," *The University of California Magazine* (September 1901), 211.

26 Elizabeth B. Keeney, *The Botanizers* (Chapel Hill and London: University of North Carolina Press, 1992); with an extensive bibliography, but very little from the western United States.

27 Muir, "Reminiscences of Joseph LeConte," 211.

28 See note 8 above.

29 Joseph LeConte, *Autobiography*, 243.

30 Joseph LeConte, *A Compend of Geology* (New York: American Book Company, 1884), 3.

31 Kevin Starr, in *Americans and the California Dream, 1850-1915* (New York: Oxford University Press, 1973), 425, points out that not only was LeConte the only faculty member with an international reputation, but tells us how students, such as Josiah Royce himself, sat outside the crowded classroom door to hear LeConte lecture. The story of the celebration of LeConte's birthday in that classroom every year, even after his death, is part of the Berkeley myth.

32 Badé, *Muir*, vol. 2, 29, in a letter to Jeanne Carr, October 7, 1874.

33 Muir was writing to his friend and editor, Robert Underwood Johnson of the Century Company, in May 1895. Badé, *Muir*, vol. 2, 292. Muir was given an honorary M.A. by Harvard, phrased in Latin, whereas the Doctor of Laws, awarded in 1913 by the University of California, was in English: ". . . man of science and of letters, friend and protector of nature, uniquely gifted to interpret unto other men her mind and ways." *The Abundant Life*, ed. Monroe Deutsch (Berkeley: University of California Press, 1926), 330.

34 Apostol, "One Woman and Sunshine," 62.

35 Jeanne Carr, "The Crown of the Valley," *The Californian*, V:27 (March 1882), 197-207.

36 Ibid., 200, 206-07.

California laurel, from Jepson, *Trees of California,* 1909.

SOME NOTES ON POETS AND NATURALISTS

Carroll Brentano

IT WAS THE CUSTOM in the former *University of California Chronicle* that was published from 1898 to 1933 to have some poetry in every issue. In keeping with that tradition, some verses that echo the themes and deal with the people appearing in this "university and the environment" issue seem appropriate.

Leonard Nathan, (Berkeley '50, M.A. '52, Ph.D. '61), professor in the Berkeley Department of Rhetoric from 1960 to 1992, has published ten volumes of poetry, including *The Potato Eaters* (1999) from which this poem is taken.[1]

THE NATURALIST

Nature led him blindly
through its fabulous shadows
down a stony path
paved by a dead glacier.

Suddenly old, he finds
himself staring blindly
through his worried students
and listening far away.

There's nothing out there really—
scree and a windy silence,
not even a bird
to call it, singing, home.

Nathan seems to be saying that nature is a fraud; that the naturalist is being led blindly, being tricked and with him his students, by an empty, silent world. How different the assumption of another local poet, Ina Coolbrith (1841-1928), writing a funerary ode for a real naturalist. Joseph LeConte was the professor of geology, botany, and natural history at Berkeley from 1869 to 1896 and died, in Yosemite, in 1901.

. . .
And Heaven so close about him lay
While still earth's lowly plane he trod,
He might not miss its shining way:
Who walks with nature walks with God.[2]

Here, the way is shining and the naturalist has God as companion. LeConte fits the type of naturalist whom Nathan recognized in LeConte's contemporary and friend, John Muir:

> Most naturalists I've met are cheerful, take positive pleasure in their studies, find beauty, even sublimity, in prospects that might daunt or deter most of us. John Muir was an almost ideal type of this figure, a man who found cause for reverence in massive ruin and icy desolation. My naturalist is different. Perhaps he has lost his power to rejoice somewhere along the way; the poem in which he dwells seems to be asking how much ruin and desolation can he bear and yet retain his humanity, his capacity to see and appreciate what is truly out there.[3]

However, in another poem, "Central Valley, California," Nathan uses John Muir as the starting point for a discouraging look at what has become of California in a hundred years:

> John Muir, standing on the coastal range,
> Could of a cloudless morning cleanly sight
> The eastern range, so rinsed under the sunrise
> That he called that range, "The Range of Light."
>
> That was a thousand years ago, almost,
> When morning was the endless honey bloom
> Spread on the valley floor while, far, a cloud
> Feathered blue distance in a world of room.
>
> Though Muir's eyes closed, small things filled up that site:
> Human figures, mustangs, plows that put
> A sketchy cultivation on the land,
> And green barns that ripened with the fruit.
>
> Men gathered and the ranges seemed to part
> For farm and city; a profit-driven smoke
> Branched in the air, kept faces close to earth
> Where plenty seemed the due of sweating folk.
>
> Looking westward from the valley floor.
> I see this morning's haze our ghostly range
> Of dirty light that no Muir lives to praise,
> That rings our rich confusion as we change.[4]

Another poet, writing in 1876, about the time Muir was meeting Joseph LeConte in Yosemite, greeted with enthusiasm the changes that Nathan, a hundred years later, deplores. John Greenleaf Whittier's "A Centennial Hymn," written for the one-hundredth anniversary of the United States celebrates the advance of agriculture across the wilderness. Thus the verses were chosen for "Select Poetry for the Grange" to appear in *The Patrons of Husbandry of the Pacific Coast*—the volume edited by Berkeley's first professor of agriculture, Ezra Carr.

> This day, one hundred years ago,
> The wild grape by the river's side
> And tasteless groundnut trailing low,
> The table of the woods supplied.

Unknown the apple's red and gold,
The blushing tint of peach and pear;
The mirror of the river told
No tale of orchards ripe and rare.

. . .
O! Painter of the fruits and flowers!
We thank Thee for thy wise design
Whereby these human hands of ours
In nature's garden work with thine.[5]

Like Coolbrith's LeConte, who walks with God, the farmer here works with God. Whittier rejoices that the wilderness will become productive farmland, and that orchards of apples, peaches, and pears will replace the uncultivated groundnuts. Where Nathan at first, like Whittier, sees "green barns ripened with the fruit," later he presents the degradation of the land as farming becomes exploitation.

Nathan shows us the present in the central valley that "no Muir lives to praise." And probably he is right, a living Muir would deplore what "sweating folk" with "faces close to earth" have accomplished. Muir's own poetic vision of a Sierra mountainside was of a very different kind:

There is a tree . . .
Upon the *hills* she *shouts* her songs of *worth*
To small eyed trees, and brambles far below
Twas thus *I* heard her sing when long ago
I sought an hour of rest beneath her shade . . . [6]

But as our readers know, or will learn elsewhere in this issue, John Muir was, in his old age (he died in 1913) to come to the same realization as Leonard Nathan that the march of civilization was to threaten that very shade.

ENDNOTES

1 Leonard Nathan has graciously given permission for the use of "The Naturalist," *The Potato Eaters* (Washington, [D.C.]: Orchisis, 1999), 71.

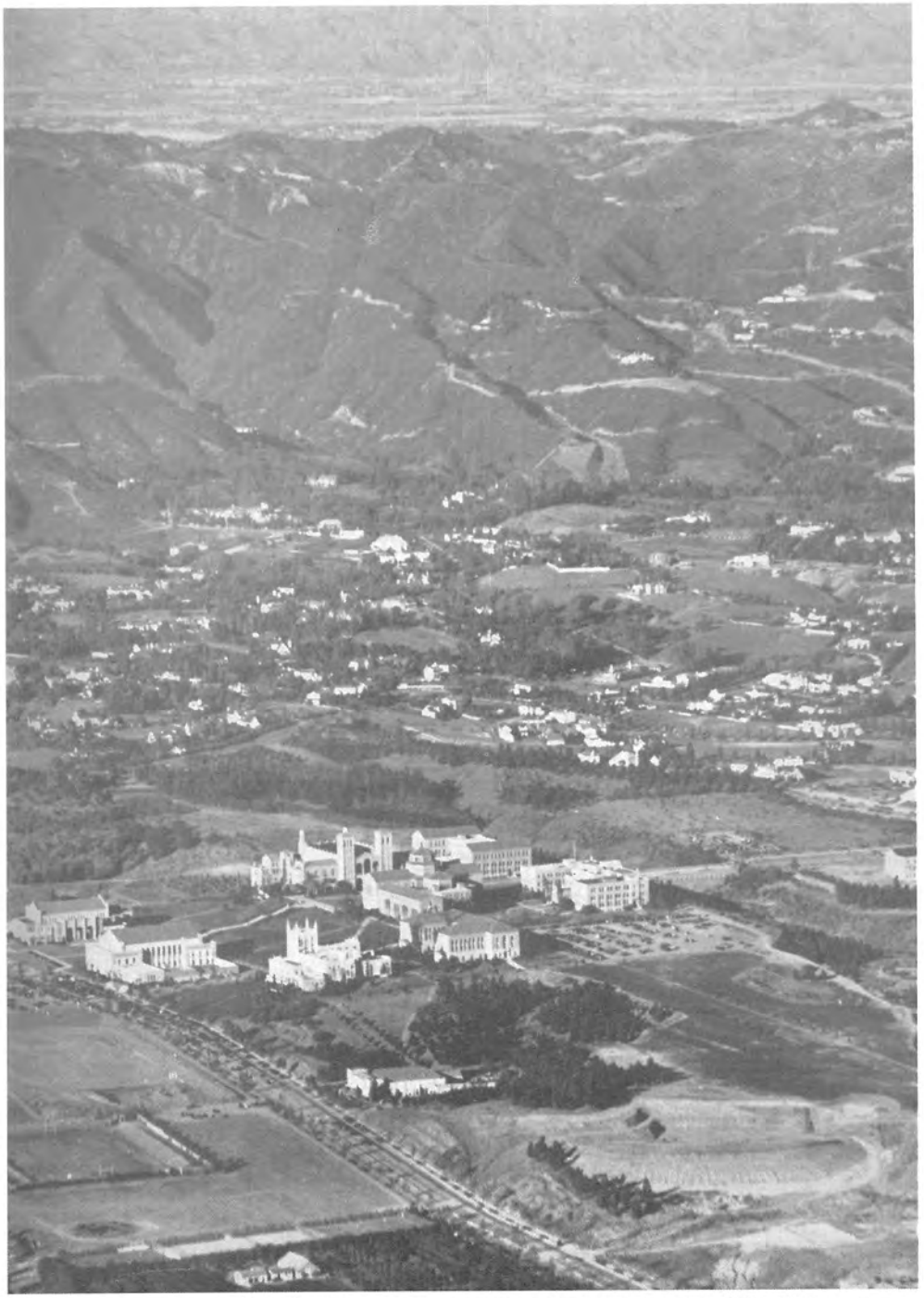
2 Ina Coolbrith, "Joseph LeConte," *The University of California Magazine* (September 1901), 213.

3 Leonard Nathan in a letter to the author, June 3, 1999.

4 Leonard Nathan has graciously given permission for the reprinting here of "Central Valley, California," *Glad and Sorry Seasons* (New York: Random House, 1963), 32.

5 John Greenleaf Whittier, "A Centennial Hymn," Ezra S. Carr, *The Patrons of Husbandry of the Pacific Coast* (San Francisco: A. L. Bancroft and Co., 1875), 450. The "Hymn" was sung at the centennial celebration by 800 voices and accounted a great success.

6 Steven J. Holmes, *The Young John Muir* (Madison: University of Wisconsin Press, 1999), 83. The "poem" is part of a letter written to the Pelton family about 1861.



"in ten years . . . we shall look with amazement upon the development of this University, for it is certain to be greater, far greater, than the imagination of any of us can foresee." Ernest Carroll Moore, from *California of the Southland,* University of California at Los Angeles, Alumni Association, 1937.

THE PEAKS AND THE PROFESSORS

UNIVERSITY NAMES IN THE HIGH SIERRA

Ann Lage

DURING THE LAST DECADE OF THE NINETEENTH CENTURY, a small group of adventuresome university students and professors, with ties to both the University of California and Stanford, were spending their summers exploring the High Sierra, climbing its highest peaks, and on occasion bestowing names upon them. Some they named after natural features of the landscape, some after prominent scientists or family members, and some after their schools and favored professors.

The record of their place naming indicates that a friendly rivalry between the University of California in Berkeley and the newly established Stanford University in Palo Alto was played out among the highest peaks of the Sierra Nevada, just as it was on the "athletic fields" of the Bay Area during these years. At least two accounts of their Sierra trips provide circumstantial evidence for a competitive race to the top between a Cal alumnus and professor of engineering, Joseph Nisbet LeConte, and a young Stanford professor of drawing and painting, Bolton Coit Brown.

Joseph N. LeConte was the son of professor of geology Joseph LeConte, whose 1870 trip with the "University Excursion Party" to the Yosemite region and meeting with John Muir is recounted elsewhere in this issue.[1] "Little Joe," as he was known, had made family trips to Yosemite as a boy and in 1889 accompanied his father and his students on a trip

University Peak, circa 1899. *Photograph by Joseph N. LeConte. The Bancroft Library (BANC PIC 1971.034:959–PIC).*

recreating the 1870 Yosemite adventure. His climbs in the Yosemite region began a lifelong devotion to the High Sierra.

In the summer of 1890 when he was twenty, he joined three other "college boys," Hubert Dyer, C. B. Lakenan, and Fred Pheby, to visit the almost unknown country at the headwaters of the Kings and Kern rivers in the area now preserved as Kings Canyon National Park. Carrying a small mountain transit and two aneroid barometers, and a 4 x 5 camera "equipped with the newly perfected celluloid film," the four university students travelled on foot from Fresno in the central valley to peaks well above 13,000 feet.

On July 20, after a difficult ascent in the then-remote Kearsarge Pass/Bubbs Creek region, they reached the crest of the Sierra and climbed a prominent point to take observations. They named this highest point to the north of the pass University Peak in honor of their beloved University of California.[2] The trip continued over the Sierra Crest east to Independence. The four youths then walked north through Owens Valley, to Mono Lake, and then to Yosemite, and home through the foothills and the central valley to Stockton. Years later, LeConte would recall this arduous nine-week "tramp" of 652 miles as "above all others the most exciting and enjoyable" of his many years of travel in the High Sierra.[3]

About the time young LeConte was exploring the southern Sierra, two University of California professors, William Dallam Armes of the English department and Joachim Henry Senger, a philologist and professor of German and Greek, were exploring ideas that would culminate in 1892 in the founding of the Sierra Club. Senger, as early as 1886, had called for the creation of a library in Yosemite to make available books, maps, itineraries, and notes on travels in the Sierra. His idea was expanded, and by 1890 students and professors at the university were discussing the possibility of forming a club. According to a later account by LeConte, the name Sierra Club was thought of at that time. Professor Senger discussed the idea in particular with his colleague Armes, who had already spoken with John Muir about the need for a defense association for the Sierra, and with Warren Olney, a prominent Oakland attorney.

Senger arranged a meeting in the Olney law offices to form an alpine club. His letters to Muir regarding the formation of the club evoked Muir's enthusiastic endorsement: "I am greatly interested in the formation of an Alpine Club. . . I will do all in my power to further the interests of such a club"(May 10, 1892) and, "Hoping that we will be able to do something for wildness and make the mountains glad" (May 22, 1892). On May 28, the Sierra Club was formed with Muir as its president. The purposes of the club included "to explore, enjoy, and render accessible the mountain regions of the Pacific Coast, and to publish authentic information concerning them," the initial interests of the Berkeley group. The interests of Muir, and the growing awareness among all of the founding group of the need for protection of the Sierra Nevada, contributed the following to the purposes stated in the bylaws: "To enlist the support and cooperation of the people and government in preserving the forests and other natural features of the Sierra Nevada Mountains."[4]

Among the twenty-seven men signing the original articles of incorporation were two of LeConte's companions on the 1890 trek, Fred Pheby '93 and Hubert Dyer '90, as well as Robert M. Price '93, who became a member of the first board of directors. Professors Senger and Armes were joined by fellow professors Willis Linn Jepson, Cornelius Beach Bradley, and Herman Kower. Two Stanford professors were among the original signers, who also included lawyers, government officials, and an artist. Stanford's president, David Starr Jordan, joined the original board, and Stanford's first professor of geology, John Branner, was a founding vice president. Many more faculty and students from both campuses joined as charter members, including Joseph LeConte and his trekking son, "Little Joe."[5]

From the 1890s, then, the university communities of the Bay Area had strong ties to the Sierra Nevada. They were involved in working for its protection and furnished a cadre of enthusiastic explorers breaking new trails, measuring its heights, drawing definitive maps, photographing and illustrating its features, and placing names on the Sierra peaks, creeks, lakes, and meadows.

In 1896, "Little Joe" LeConte, since 1892 a professor of engineering mechanics at Berkeley, returned to the Kearsarge Pass/Bubbs Creek area, this time with his future wife, Helen Gompertz, and friends. Realizing that the peak they had named in honor of the University of California was not after all the highest in the crest, they reassigned the name, University Peak, to a "huge peak, which seems to be the culminating point of the Sierra in this region."[6] The LeConte party made the first ascent of the 13,632-foot summit, built a small monument, and left an account of the earlier naming in 1890. In the *Sierra Club Bulletin* of 1897, Miss Gompertz described the view from the top after the first ascent of University Peak on July 12: "Thirty beautiful lakes were counted from this point, some shining out of carved bowls on high rocky shelves, others nestling in the green hollows below . . . Mount Brewer, crowning the Great Western Divide, bared its snowy bosom to the sunshine. Bathed in light . . . [it] lay beyond us like the promised land."[7]

Helen Gompertz, the future Mrs. Joseph N. LeConte, and friends on top of University Peak, 1896. *Photograph by Joseph N. LeConte. The Bancroft Library (BANC PIC 1971.034:384–PIC).*

On that same trip, just before its ascent of University Peak, the LeConte party met and climbed with Stanford professor Bolton Coit Brown, another explorer of the High Sierra. The following month Brown and his wife Lucy determined to "capture a desirable mountain, and name it after Stanford University."[8] Leaving his wife behind when the ascent became arduous, Brown climbed a peak to the south of University Peak, 300 feet higher, and "accessible with great difficulty."[9] On this rugged peak he bestowed the name Mount Stanford.

LeConte also had some scores to settle later in that active summer of 1896; he knew that in 1895 the ubiquitous Professor Brown had caught a glimpse of the magnificent range of peaks known as the Palisades above the middle fork of the Kings River. From his vantage point eight miles distant, Brown had named the highest pinnacle in the main crest Mount Jordan, after Stanford's president. In doing so, he was overriding the name "North Palisades" bestowed by the Whitney geological survey party in 1864. In his 1904 account of his first ascent of the North Palisades, LeConte contests Brown's change of name for the highest point. And he notes that, with the name for the highest pinnacle under a cloud after Brown's attempt to memorialize Jordan, in 1896, "I took the liberty of naming the second highest point Mount Sill,"[10] after Edward Rowland Sill, a poet, professor of literature, and the sole professor in the English department at Berkeley from 1874 to1882.[11] The change from North Palisades to Mount Jordan did not stand, but the Sierra Club in 1925 did name a peak on the Kings-Kern Divide after the ichthyologist, club luminary, and former Stanford president, David Starr Jordan.

Sierra Club Bulletin, January 1898.

In 1894, just two years after the Sierra Club was founded, Professor Senger's contributions to the exploration and protection of the mountains were recognized when Theodore Solomons, an inveterate trailblazer in the High Sierra, named a 12,253 foot peak Mount Senger.[12] The following year Solomons christened a 13,361 peak in the same region Mount Hilgard after Professor Eugene Hilgard, born in Bavaria in 1833, a soil scientist who laid the foundations for the College of Agriculture at Berkeley, where he was a professor from 1875 to 1903.[13] "It was thus named at the suggestion of an admiring former pupil of Professor Hilgard, Mr. Ernest C. Bonner '93, who accompanied me on one of my outings," explained Solomons.[14]

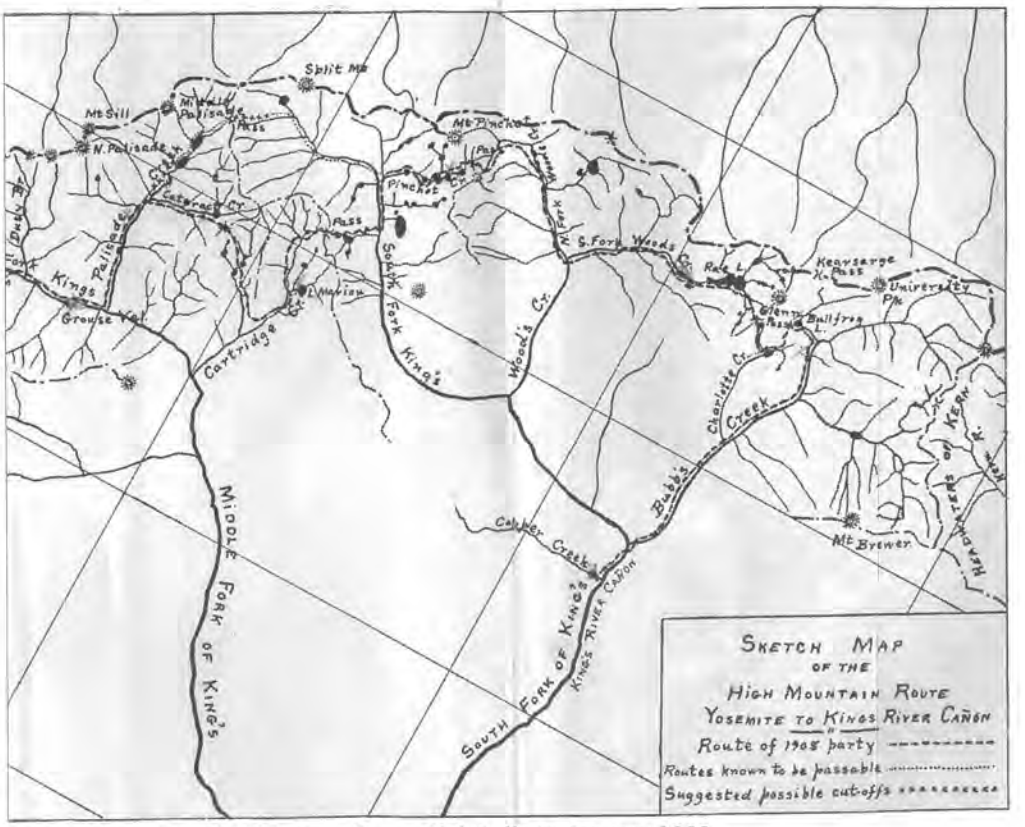
In 1897, professor of rhetoric Cornelius Beach Bradley made a 200-mile trek in the High Sierra with former student Robert Price and his wife. While Bradley ascended a lower peak, Price and his friend Joseph Shinn made the first ascent of a 13,780 foot peak next to University Peak in the Kings-Kern region, naming it Mount Bradley.[15] Cornelius Bradley, born in Siam, was at Berkeley from 1882 until 1911 and was a charter member of the Sierra Club; his son, Harold, was president of the club in the 1950s.[16]

The LeContes, father and son, have been remembered with numerous names in the Sierra Nevada. In 1894, Robert Price and a group of university friends, including E. C. Bonner and William E. Colby '95, travelled through the Tuolumne Canyon in Yosemite National Park, from Tuolumne Meadows to Hetch Hetchy Valley. "The most majestic cascade" in the canyon they called LeConte Cascade, "so named by us in honor of our esteemed Professor, Joseph LeConte."[17] Mount LeConte, over 13,900 feet in the Mount Whitney region, was also named for the elder LeConte, in 1895, by two climbers with no apparent university connections. Describing the peak as "one of the most striking points of the whole range" and "utterly impossible to climb," they placed a monument below the summit, "in honor of the eminent geologist, Professor Joseph LeConte."[18]

Joseph N. LeConte is memorialized in the mountains with LeConte Canyon south of Muir Pass and LeConte Point above Hetch Hetchy, both named by U.S. Geological Survey topographers in tribute to his trailblazing and map making. In 1908, pioneering a high mountain route suitable for pack animals to travel between Yosemite and the Kings River region, "Little Joe," with Duncan McDuffie '99 and James S. Hutchinson '99, travelled south past the Evolution Peaks and brought pack mules over Muir Pass on the Goddard Divide. "Down the other side was an awful looking gorge in the black metamorphic rock, partially choked with snow." Through this precipitous "savage" canyon which later bore his name LeConte and his friends led their pack animals, completing the critical stretch of their high route down the Sierra spine.[19]

End of the 1908 trip from Yosemite to Kings Canyon: left to right, Duncan McDuffie, Joseph N. LeConte, and James S. Hutchinson. *Photograph by Joseph N. LeConte. The Bancroft Library (BANC PIC 1971.034:1952–PIC).*

Joseph N. LeConte, whose teaching career continued until 1937, made the university motto, "Let there be light," a reality when he and fellow engineering professor Clarence Cory installed the first electric lighting system on the campus. His climbing skills proved to be an asset on campus; once, while on his way in full dress to President Kellogg's annual reception, he climbed the light poles to get three crucial lights working in time for the party. He was granted an honorary degree by his alma mater in 1937.[20] LeConte was the second president of the Sierra Club, after John Muir's death, and served as honorary club president from 1930 until his death in 1950. He made forty-four extensive treks in the High Sierra until poor health grounded him in 1930. His scientifically drawn maps guided early explorers until U. S. Geological Survey maps became available, and his Sierra photographs were among the best of his era.[21]



J.N. LeConte Map of 1908, from *Sierra Club Bulletin*, January 1909.

Other peaks were named for University of California faculty in the twenties and thirties, when boards and commissions rather than adventuresome climbers began to place official names on the land. These include Mount Royce, named in 1929 by the California State Geographic Board for Josiah Royce, a graduate of the university in 1875 and teacher of English from 1878 to 1882 when he left for Harvard and fame as a philosopher. Sometime before 1939, the Sierra Club proposed and the board approved the naming of a peak in the North Palisades after Berkeley professor Charles Mills Gayley. Gayley was a legendary figure who shaped the modern Department of English, arriving in 1889 to join Professors Bradley and Armes and retiring in 1923. As Dean of the Academic Faculties he was part of a faculty triumvirate which, after a faculty revolt against President Wheeler, ruled the cam-

pus in 1918 and 1919. A beloved teacher, he filled the Greek Theatre with his Great Books course and wrote Cal songs, including "The Golden Bear." There is no record of his connection with the Sierra Nevada.[22]

Professor of botany Willis Jepson and professor of geology Andrew Lawson, both preeminent scientists, charter members of the Sierra Club, and active in the club's annual outings in the Sierra, were honored after their deaths with the naming of Mount Jepson (13,390, one mile from Mount Gayley) and Lawson Peak (13,140, Triple Divide quadrangle). By 1976 a total of ten Sierra peaks had been named after University of California professors.[23]

In 1922, the name of a second Stanford professor was given to a Sierra peak. Mount Bolton Brown, a 13,500 foot peak in the upper basin of the south fork of the Kings River, was named in honor of the man who was one of the first to explore, map, sketch, and write about this area in the southern Sierra. Brown had made an impressive first ascent of Mount Clarence King on a solo climb and the first ascent of Mount Gardner with J. N. LeConte in 1896. He trekked and climbed with his wife, Lucy, and by 1899 with their two-year-old daughter, Eleanor. "We put her on a burro, and wither we went she went also."[24] Bolton Brown was a professor of drawing at Stanford from its founding in 1891 until 1902, when he went east to New York and helped to found the Brydcliffe Arts and Crafts colony in Woodstock. No further accounts or sketches by Brown appear in the *Sierra Club Bulletin* after 1901.

Two California mountaineers at the turn of the last century—Joseph Nisbet LeConte and Bolton Coit Brown—shared a love for the Sierra and a compulsion to explore its heights and to describe, map, picture, and name its features. Their ties, as fellow professors, pioneering hikers and climbers, and members of the Sierra Club, surely outweighed any rivalries they might have felt as faculty members of the University of California and the fledging Stanford University. Still, their written accounts suggest a friendly competition to place names associated with their respective universities on the mountaintops. If, indeed, we have a contest, we have a score: Cal 10 – Stanford 2.

ENDNOTES

1 "'Passionate Lovers of Nature': The University in the High Sierra." See also LeConte's *Journal of Ramblings through the High Sierra of California by the "University Excursion Party"* (San Francisco: Sierra Club, 1960, seventh edition).

2 Joseph N. LeConte, "Journal of a Camping Trip Amongst the Highest of the California Sierra, Summer of 1890," typescript of his journal, 54-57. "My First Summer in the Kings River Sierra," *Sierra Club Bulletin* [hereafter *SCB*] 26:1 (February 1941), 9-14.

3 LeConte, "My First Summer," 9.

4 The account of the founding of the Sierra Club and quotes from the Muir letters are from an article written by Joseph N. LeConte on the twenty-fifth anniversary of the Sierra Club, "The Sierra Club," *SCB* 10:2 (January 1917), 135-141.

5 Holway R. Jones, *John Muir and the Sierra Club: The Battle for Yosemite* (San Francisco: Sierra Club, 1965) 7-10, 170-174.

6 J. N. LeConte, "Journal," 54.

7 Helen M. Gompertz, "Up and Down Bubb's Creek," *SCB* 2 (May 1897), 84.

8 Bolton Coit Brown, "Wanderings in the High Sierra, between Mt. King and Mt. Williamson," *SCB* 2 (May 1897), 91-92.

9 Francis P. Farquhar, *Place Names of the High Sierra* (San Francisco: Sierra Club, 1926), 89. (This book is dedicated to Joseph Nisbet LeConte, "Mountaineer and Explorer of the High Sierra.")

10 Joseph N. LeConte, "The Ascent of the North Palisades," *SCB* 5: 1 (January 1904), 3.

11 Peter Browning , *Place Names of the Sierra Nevada: From Abbott to Zumwalt* (Berkeley: Wilderness Press, 1986), 199.

12 The peak is in the Kings River region. Farquhar, *Place Names*, 83

13 Verne A. Stadtman, ed. *The Centennial Record of the University of California* (Berkeley: University of California Printing Department, 1967), 3.

14 Quoted in Browning, 97.

15 Cornelius Beach Bradley, "Exploration of the East Creek Amphitheater," *SCB* 2: 5 (1899), 273-274.

16 Farquhar, *Place Names*, 9.

17 Robert M. Price, "Through the Tuolumne Cañon," *SCB* 1: 6 (May, 1895), 204. Will Colby, a graduate of Boalt Law School and eminent mining lawyer, became John Muir's right-hand man in the fight against damming Hetch Hetchy Valley, and served as secretary of the Sierra Club for over forty years.

18 *SCB* 1: 8 (1896), 325-326. Mount LeConte was first climbed in 1925 by Norman Clyde.

19 Joseph N. LeConte, "The High Mountain Route between Yosemite and the King's River Cañon," *SCB* 7: 1 (1909), 16-18. Browning, 124.

20 *Centennial Record*, 73.

21 Farquhar, *History of the Sierra Nevada* (Berkeley: University of California Press, 1965), 218, 223-224.

22 Browning, 78. George R. Stewart, *The Department of English of the University of California on the Berkeley Campus*, a Centennial Publication of the University of California (1968), 12-16. *Centennial Record*, 10, 85.

23 Within the High Sierra region covered by the Browning book, the northern boundary of Alpine County on the north and Walker Pass on the south. Browning, introduction.

24 Farquhar, *History*, 221. Farquhar, *Place Names*, 8.

THE SAGA OF WHITAKER'S FOREST

N. H. (Dan) Cheatham

Horace Whitaker (about fifty years old), circa 1880. *Courtesy of N.H. (Dan) Cheatham.*

WHAT SURELY MUST BE THE UNIVERSITY'S LONGEST RUNNING SAGA, spanning the time of Benjamin Ide Wheeler to the present, began on the morning of February 10, 1910, when Horace Whitaker[1] walked into the Budd Hall[2] office of the Dean of Agriculture, Edward J. Wickson, and announced his intention to donate 320 acres of forest land to the University of California. As we shall see, to this day, Whitaker's family is looking over the university's shoulder to assure strict compliance with the terms of the gift.

Whitaker was an independent and curmudgeonly man living the life of a rural farmer in the Sierra foothills east of Fresno. There are colorful local descriptions of his odd behavior,[3] and his address was simply, "Horace Whitaker, Orosi, Tulare County."

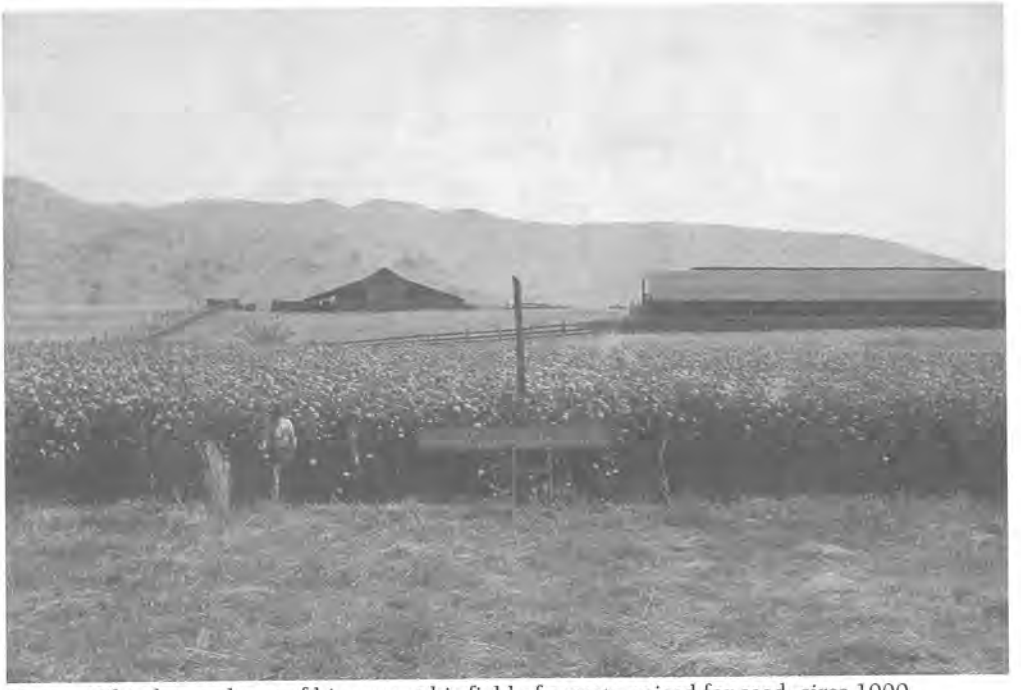
The gift property, located at a higher elevation than his farm, was sandwiched between Sequoia National Park, just west of General Grant Grove, and what was then known as the Sierra Forest Reserve, later to become the Sequoia National Forest. Located in an area of considerable logging activity associated with the endemic giant sequoia (*Sequoiadendron giganteum*)[4] of the Sierra Nevada, the land had been purchased by Whitaker in the mid-1890s at a tax sale.[5] In light of subsequent events it can be presumed that Whitaker had strong feelings about logging in these magnificent forests. Dean Wickson later stated that Whitaker clearly expressed a desire "to perpetuate the forest, for which he expressed great affection, to perpetuate it for public enjoyment and to protect the trees from timbering."[6]

Professor Edward J. Wickson, Dean of the College of Agriculture, 1906-1912, from W.C. Jones, *Illustrated History of the University of California*, 1895.

The two men had been acquainted in the days when Wickson was editor of the *Pacific Rural Press*. It is not clear if they personally knew each other but Wickson states that they had "occasional communications" and it can be surmised that this influenced Whitaker's choice of whom to approach on this matter.

Bureaucratic needs were operative even in those days, and Wickson remembers telling Whitaker that "no one could speak for the University in such a matter except the Board of Regents and I told him that the way to assure himself of the acceptability of his gift under conditions which he desired to perpetuate would be to address a formal tender of the land to the Regents of the University and to await their response thereto."[7]

The two men then drafted a simple statement expressing Whitaker's thoughts and Wickson forwarded it to the Secretary of the Regents. This simple beginning now entered the realm of the complicated, for Secretary Victor H. Henderson felt obliged to write to Whitaker on October 13, 1910, and suggest that "certain modifications to the deed are desirable in order to make the gift of the greatest possible usefulness, and in order to protect its legal character."[8]



Horace Whitaker and two of his men at his field of carrots, raised for seed, circa 1900. *Courtesy of N. H. (Dan) Cheatham.*

Whitaker's original two conditions that the "land shall never be sold into private ownership, but shall be held and maintained for public use" and that Whitaker should have the right to remove dead timber,[9] now began to multiply as the regents and a Visalia attorney named H. B. McClure began exchanging drafts.[10] In the end, there were seven restrictions attached to the gift.[11] It is easy to imagine Whitaker's frustration as he watched his simple initial intent being escalated to more complicated levels, no doubt fueled by the expertise of his attorney. In those days there was excessively heavy grazing in the Sierra which may have influenced Whitaker's growing concerns, and he must also have been influenced by the opinions of John Muir who had traveled through this area in 1875.

Secretary Henderson traveled to the forested property at the end of September 1910 by stage from Sanger to Millwood and then by horseback. When initially informed of Henderson's proposed visit, Whitaker wrote back that he could not escort Henderson because he would be in Fresno "hunting remedy for stone in [the] bladder." There is evidence

that Whitaker wound up in a hospital in San Francisco, and while there, missed another opportunity to meet Secretary Henderson in person.[12] On July 26, 1910, Whitaker finally signed an "indenture" whereby he "gives and grants, conveys and confirms" the property "unto" the regents. Failure to "perform and carry out" the purposes and interests of those conditions or, "in case of any violation of the reservations herein made" the property "shall immediately revert" to himself, his heirs, executors, administrators or assigns.[13] This becomes important as the story later unfolds.

Whitaker's signature was witnessed by his attorney, H. B. McClure, acting in his capacity as a notary public. McClure was then instructed to inform the regents that the gift had been made, but not to deliver the deed until it had been formally accepted.

On August 9, 1910, the regents formally accepted the gift, and on August 12, 1910, President Benjamin Ide Wheeler wrote to Whitaker thanking him for the gift and said, "I hope we shall not have long to wait before the University will have established a School of Forestry. When this is done, the trees which you have given us will offer laboratory opportunities for the students in this school."[14]

Whitaker died at his home on October 16, 1910, at the age of eighty, just short of three months after he signed over Whitaker's Forest.[15] He was buried in a brick-lined vault under a fig tree on his home ranch.[16] On his death, an item in the October 21, 1910 issue of the *Fresno Republican* described Whitaker as a "rich recluse" with an estate worth fifty-five thousand dollars but he was without a will.[17] Later, a holographic will dated September 1, 1910—about five weeks after the gift and six weeks before his death—was found in a pocket of an old coat hanging on a peg in Whitaker's cabin.

Horace Whitaker's home, Orosi, California, circa 1900. *Courtesy of N. H. (Dan) Cheatham.*

His will cut off his direct family, including a brother and sister who were present in his last days, and left his estate instead to descendants of two childhood friends. The will was belatedly "discovered" by one of the beneficiaries who presumably tended to Whitaker in his dying days. The whole thing was rather mysterious and it wasn't long before the family members were in court to rescind the will on the grounds, among other things, that he was mentally incompetent at the time. One might presume it would be more accurate to describe

him as having been eccentric and suffering from the aftermath of the bladder surgery. The will was ruled valid, and the disappointed family then turned its attention to the property that was earlier given to the regents.

In 1916 the family sued the regents on the grounds of "neglect and bad faith."[18] Judge Wallace found that the regents had "proceeded in good faith to carry out the conditions in regard to using the Forest for forestry investigation and research," thanks in part to use and research by Mulford's Division of Forestry.[19] The trial must have been bitter but not without humor, since there is one letter in the file stating, "the attorneys on the other side are certainly skunks to allege fraud on the part of the Regents."[20]

The trial did, however, put the board of regents on notice that the family was looking over its shoulders.

In 1926 the site began hosting a very active 4-H and youth summer camp and many prominent San Joaquin Valley residents have fond memories of their participation.[21] Starting in 1938 the campground was also used by the Diabetic Foundation for a children's camp.

Professor Wilbur Mayhew of the Riverside campus admires Horace Whitaker's grave at its present site at Whitaker's Forest in eastern Fresno county. *Photograph by N. H. (Dan) Cheatham.*

In February 1981, the southern Sierra suffered severe storm damage.[22] The forests were littered with fallen debris creating a dangerous fire hazard as well as creating conditions for disease and insect infestations. In addition, over the years land management practices throughout the region, including suppression of naturally occurring fires, had favored a shift away from reproduction of the *Sequoiadendron* by favoring fir, pine, and incense cedar. Some form of management action was necessary throughout the whole region, including Whitaker's Forest, and nature had presented an opportunity to link windstorm cleanup with research. In doing so, the university had to tread lightly, lest it violate the terms of the gift prohibiting cutting down any *Sequoiadendron* on the property. Later, incorporating the forest into the university's Natural Reserve System was considered but this never came to fruition.

Presently, Whitaker's Forest is administered by the Center for Forestry, a unit of the College of Natural Resources on the Berkeley campus. Significant research continues, including remeasuring permanent plots from the 1930s, and establishing new ones aimed at characterizing the plant, animal, and aquatic systems in old growth *Sequoiadendron* forests. The Whitaker family continues to keep an eye on university activity on the property.

ENDNOTES

1 His brother was Brigadier General Edward Washburn Whitaker, then of Washington, D.C. An item in the February 12, 1915, *Fresno Republican* reports that General Whitaker was General Custer's chief of staff during the Civil War.

2 Budd Hall replaced the original agriculture building which burned in April 1897. Named for Governor James H. Budd, one of the twelve first graduates, class of 1873, it was situated on the present location of Moses Hall.

3 See the personal reminiscences of Orlena Barton Wrought published in the June 1955 issue of *Los Tulares*, the bulletin of the Tulare County Historical Society.

4 Personal reminiscences published in the November 28, 1926 issue of the *Fresno Bee* by Hudson D. Barton state that "in 1869, I myself saw the first *Sequoiadendron giganteum* ever made into lumber in the big tree belt." He goes on to tell how that tree came from what later turned out to be Whitaker's Forest. That article was reprinted in the October 1950 issue of *Los Tulares*, the bulletin of the Tulare County Historical Society. Note: the coastal redwood (*Sequoia sempervirens)* and the "Sierra redwood" are not the same species but the common name "redwood" is sometimes applied to *Sequoiadendron* and can be confusing. *Sequoiadendron* is the only living species in its genus and is restricted to a narrow range centered around Whitaker's Forest.

5 Hayle Buchanan, R. P. Gibben, H. H. Biswell, *Checklist of Higher Plants of Whitaker's Forest, Tulare County, California*, Weber State College Printing Department, Ogden, Utah, 1966. This contains a description of the condition and history of vegetation on this property as well as a management history. Photographs are included.

6 Dated May 27, 1915, the letter is addressed to Victor H. Henderson, Secretary of the Regents, and appears to be written by Wickson to establish legal facts, during the subsequent court proceedings, by stating his recollections of Whitaker's initial contact. Regents' records, CU-1, 91:15, University Archives, University of California, Berkeley.

7 Ibid.

8 Attached to Wickson's May 27, 1915 letter.

9 Personal recollections cited earlier (see note 3) indicate that Whitaker obtained fence railings and grape stakes from the property.

10 Whitaker to Henderson, August 29, 1910, handwritten note. Regents' records, CU-1, 69:24, University Archives.

11 The gift as stated in the "indenture" signed by Whitaker on July 26, 1910 contains, among others, the following restrictions:

1) That the property shall be held "in its present condition for forestry investigation, and research connected with that branch of instruction as taught in the University of California."
2) "That no whiskey or other intoxicating liquors shall ever be sold or dispensed on said premises."
3) "No Sequoia or Redwood trees growing or that may grow on said premises shall be felled or cut down."
4) "All dead or fallen timber" may be removed by Whitaker for his use.
5) The "premises shall be known as and called 'Whitaker's Forest'."

(See note 13.)

12 Regents records, CU-1, 69:24, University Archives.

13 A copy of the deed in the office of the Secretary of the Regents shows that it was recorded on August 11, 1910, on page 271 of volume 177 of the county's record of deeds. A "Whitaker's Forest" chronology in The Bancroft Library written by Woodbridge Metcalf mistakenly states that it was recorded on July 26, 1910. That was the date on which it was signed. CU-13.82, 3:16, University Archives.

14 Copy in University Archives, CU-5.4, 42:14. Indeed, on April 25, 1913, Wheeler authorized creation of the Division of Forestry within the College of Agriculture. On August 1, 1914, Professor Walter Mulford was put in charge.

15 A few days before he died, Whitaker decided to add to his already executed gift and executed *another* deed giving his home ranch to the regents, specifying that "said premises shall be forever a game refuge for harmless animals and birds, and that [the regents] shall stock the same with wild animals and birds." The deed was never recorded and references to the two deeds are confusingly commingled in the historical files. Having never been recorded the second deed became moot.

16 *Los Tulares*, bulletin of the Tulare County Historical Society, June 1955.

17 A copy of this clipping is in the University Archives, CU-5.4, 42:14.

18 Supreme Court of the State of California. Sac. No. 2667. *Edward Whitaker et al. v. the Regents of the University of California*. The complaint alleges: 1) "Failure of the grantee to comply with the conditions of the deed," 2) "Statutory fraud against defendant in receiving and accepting said deed without any intention of performing the conditions therein and falsely representing to the grantor that it would perform said conditions," 3) "Horace Whitaker was mentally incompetent when he made the deed." Trial judge W. B. Wallace (case no. 8170, Superior Court of the State of California, in and for the County of Tulare) found that, "the third count challenging the competency of Horace Whitaker to make said deed was abandoned at the trial. The averment as to the fraudulent acceptance of the deed without any intention to perform the conditions therein, which are presented by the second count and also in the first count are not supported by the evidence."

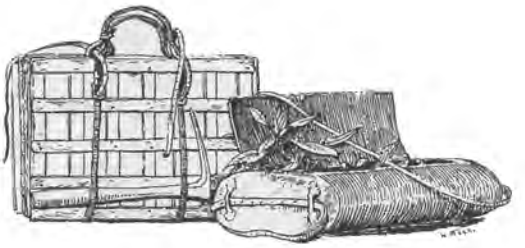
The regents were represented by James M. Burke, class of 1908, an attorney practicing in Visalia. In a February 15, 1916, letter to Secretary Henderson, Burke says, "The opportunity to represent my University in this case [is] one of the most previous (sic) [precious?] privileges of my life, and I trust that I may continue in the fight, if there is to be a further fight, to the end." University Archives, CU-1, 91:14.

19 Mulford testified at the trial that he had visited the property in June 1915 and at the time of the trial (November 1915) two research projects were actually underway. Trial transcript (see note 18) page 216, line 17 et seq. See cover story in the November 1969 issue of the *California Forester*, published by the California Alumni Foresters, for the forest's research history. (For continuing information about Whitaker's Forest see: http://www.CNR.berkeley.edu/forestry/whitaker.html)

20 Victor H. Henderson to James M. Burke, January 13, 1916. University Archives, CU-1, 91:15.

21 A rich source of historical information would be the files of the 4-H clubs of Fresno, Kern, Kings, Madera, and Tulare counties.

22 *Berkeley Independent Gazette*, July 14, 1981.



SEMPERVIRENS

Richard G. Beidleman

PROFESSOR WILLIS LINN JEPSON was in his real element. No sooner had the academic year at the University of California ended in May of 1915 than "The Botany Man," as he called himself, and his plant artist, Dr. Alice Gilkey, were heading for the upper foothills carved by the Stanislaus River and made famous by Mark Twain, Bret Harte, and gold. During almost a fortnight now, from the Grant Ranch near the old mining town of Columbia, Jepson had been reveling in the wildflower displays and busy garnering specimens for the herbarium; he was looking forward to uninterrupted field work to the end of July.[1]

But then the unexpected telegram arrived: "Come down and talk on the Redwood before the National Convention of Electrical Engineers. Signed, Thomas Edison."[2] Jepson certainly knew who Thomas Edison was, although he had never met him. Here was one busy, important man inviting another busy man to speak on an important topic. With little hesitation but with a "longing backward look" at the slopes of oak, pine, and chaparral, Jepson was off for the lecture in the appropriate outdoor setting of Muir Woods.

On hand, on June 11, Dr. Jepson found an audience of 300 electricians from around the country—but no Edison! As the program chairman sheepishly admitted, they feared that without the Edison inducement Jepson would not have come. In actuality, the group was the National Electric Light Association, in its thirty-eighth and largest convention (2000 participants) concurrent with the artistic illumination of the Panama-Pacific Exposition in San Francisco. But although Jepson was at Muir Woods without Edison, he had a subject close to his heart, and it was a beautiful day among the impressive redwoods.

In fact it was the first pleasant day during the convention's week of miserable weather. "Clouds and fog in the morning and evening," although early in the convention the fog had lifted briefly during the social hour's Pisco Punch, a beverage with the kick of an enraged ostrich.[3] Jepson quickly discovered an audience that was distinctly disgruntled at California's claims of a wonderful climate, and his opening remark was precipitated by an overheard comment "Now we are to hear from another California Liar." So he launched his talk with "But no Californian as he is a gentleman will lie about the friendly Redwood."[4]

This would be the first of many more than a dozen Jepson lectures, up and down the state,

Willis Linn Jepson in the Sierra Nevada, 1911. *Jepson Herbarium Archives.*

Lumbered redwood forest in Mendocino County, 1897. *Photograph by L. E. Hunt, UC Berkeley, a colleague of Jepson's. Jepson Herbarium Archives.*

extolling the uniqueness of redwoods, urging their preservation by creating redwood preserves, and enthusiastically supporting the newly formed Save-the-Redwoods League in 1919.[5] But Professor Jepson's love for the "friendly Redwood" went back much earlier. As he romanticized in one presentation, "I was rocked in a cradle made of Redwood, lived in a house largely made of Redwood, went to school in a Redwood schoolhouse, sat at a desk made of Redwood, used a slate bound in Redwood . . . Everywhere about one, one touched Redwood . . ."[6] Appropriately, in 1904 Jepson planted a young redwood in front of his mother's cottage in Vacaville, a tree which still thrives there today.

As he began botanical field trips in the San Francisco Bay region as a young man, Jepson had become familiar with the redwoods in their local habitat; and in 1897 with an assistant he casually visited some of the redwood country in northwestern California, where he became interested not only in the trees themselves, and their economic significance, but also in the many careless lumbering practices.[7] In 1910 the University of California Press published Jepson's magnificent *The Silva of California*, in which he incorporated his observations relating to forestry—he, after all, would soon be instrumental in starting that school at the University of California. He also began to emphasize in writing the lack of care in the harvesting of timber, and in particular, the need for preservation of the finest of the redwoods. His *Flora* section on the Coast Redwood encompassed twelve printed pages and thirteen striking full-page plates, with many depicting lumbering scenes. With foresight, he emphasized: "The preservation in primitive condition of at least a small area . . . along Eel or Smith Rivers as a natural wonder-park would be, aside from esthetic or scientific reasons, of manifold greater money-value . . . than the conversion of this area into lumber."[8]

By 1908 two redwood stands had already been set aside as preserves, the California Redwood Park (now Big Basin Redwoods State Park) and Muir Woods (now Muir Woods National Monument). The bill to set aside the Armstrong Grove on the Russian River "for permanent public use" was introduced into the California legislature in 1909 but did not receive executive approval, neither was a 1912 attempt to establish a Redwood National Park successful. Although Jepson was in favor of protecting this grove (now Armstrong Redwoods State Reserve), his conservative streak made him frown on state or federal government action. He felt that this was something the public "might well do for themselves."[9] In less than a decade the creation of Save-the-Redwoods League would accomplish what Jepson had urged in the 1910 *Silva* and the League would solicit his wholehearted participation.

The idea of the League was conceived during a 1917 field trip into California's northwestern redwood country by three eminent men: John C. Merriam, dean of the faculty at the University of California, Henry Fairfield Osborn, president of the American Museum of Natural History, and Madison Grant, chairman of the New York Zoological Society. Shocked by the ruthless devastation of California redwood forests by lumbering, they made inquiries among numerous influential individuals about initiating a preservation movement.[10] By July of 1919, Save-the-Redwoods League was formally organized under the leadership of Merriam, Joseph D. Grant of San Francisco, with Robert Gordon Sproul as treasurer and Aubrey Drury as secretary (later replaced by his brother Newton). A large Executive Committee (eventually to be called a Council) was established which included, among others, Willis Jepson and important University of California colleagues such as the university president, Benjamin Ide Wheeler. Although the League had its office in San Francisco, its mailing address was the university, with which it would informally retain a close relationship through the years.

As an organization it announced five major goals: purchase of redwood groves by private subscription and county bond issues; passage of a state bond issue to procure redwoods along state highways; federal establishment of a national redwoods park; protection of redwoods along scenic highways under construction; and reforestation and conservation of forest areas.[11]

By December of 1919 Willis Jepson was on the lecture trail for the League in dead earnest, beginning with a toast at a Sierra Club dinner in the Fairmont Hotel, in reply to "Save the Redwoods." Within two months he was giving a talk at the Pacific Automobile Show in San Francisco on "The Importance of a National Redwood Park from the Standpoint of a Botanist." Then it was a "Save the Redwoods" lecture for the famous Bohemian Club, which had a small redwood preserve along the Russian River. In his "The Reason for Saving the Sequoias" talk for the Federation of Women's Clubs in Santa Rosa in May 1920 he declared that "some of us have been working on this thing for twenty years. It is now taking larger shape. We must this time succeed. We must not longer be denied." In July it was a talk for the Berkeley Rotary Club; and, believe it or not, a return engagement with another national convention of the electricians, this time meeting in Wheeler Hall at the university.[12]

Redwood forest after logging, near Eureka, circa 1902.
Photograph by A.W. Ericson. Jepson Herbarium Archives.

As Professor Jepson, made his appointed lecturing rounds on behalf of redwoods, by train, by personal car, or locally, on foot, one should remember that he was indeed a tremendously busy man. During each academic year he was teaching botany and attending to institutional

trivia at the university, with brief excursions into the field. During the summer he was usually off for extended, although hurried, collecting trips: in the Sierra, the desert, on the coast. Most important, he was on a deadline to complete his landmark *Manual of the Flowering Plants of California* (finally published in 1925). And he was just recovering from a prolonged physical relapse. William Setchell, head of the botany department, appreciated Jepson's demanding schedule and wrote to a colleague, "I can point further to the participation of Professor Jepson in the activities of this organization [Save-the-Redwoods League], in that he has been, and will continue to be, spending a great amount of his own time in lecturing and in other ways making known the nature of the League's work and need of support."[13]

Logged hillside near Fort Bragg, circa 1903. *Photograph by W.T. Firch. Jepson Herbarium Archives.*

To make matters more demanding, each of his scheduled lectures had its own logistical problems. For example, the talk to the Garden Club of Santa Barbara and Montecito in 1921 started with someone who was not the program chairman writing Jepson about his giving a lecture on the redwoods, with a promised remuneration. As the program chairman Mrs. W. F. Kelly shortly wrote, she didn't know who had invited him and that person was certainly not authorized to provide any remuneration. But after consideration, the club would like a lecture, and what "remuneration would be sufficient to make it seem worth your while to make the trip?"[14] A month later Santa Barbara matters were accelerating. The executive board of the club wanted both Jepson and the League's treasurer, Robert Sproul, to come and Jepson to lecture. On behalf of Save-the-Redwoods a financial appeal was "to be made at the end by Mr. Sproul."[15]

Then there arose a crisis in Santa Barbara. Mrs. Kelly could contact neither Jepson nor Sproul by phone for final arrangements. In a letter she frantically asked Jepson to telegraph her if Sproul would be coming, and advised that indeed a reading lamp and electric clicker would be provided for Jepson's lecture.[16] Three days later Jepson received another note, this one inquiring about the size of his lantern slides; and if they were "autochromes" (colored), a more powerful projector would have to be procured. She ended by telling him she had learned that Sproul would definitely not be coming.[17] In the end Jepson came by train, delivered a well-received lecture illustrated with sixteen color slides on "History of Save the Redwoods Movement," gave a pitch about membership blanks and contributions, reported on some major gifts which had come in, including from Santa Barbara, and was able to squeeze in a day of botanizing in the nearby Santa Inez mountains.

Professor Jepson had become an old hand at delivering popular public lectures, having informally practiced them at many a Sierra Club campfire. Although he had a few stock talks, such as his tongue-in-cheek one about Chief Pete of the Redwood Indians whose tribe protected the redwood tree,[18] he would sketch out in longhand for each group a special talk, then usually have his secretary type it out for delivery. The illustrated lecture might deal with the redwood as a tree, the redwood forests of California, the redwood lumber industry, the commercial use of redwood, or threats to the redwoods; but whatever the appropriate subjects he touched upon, he would always talk about the redwood preservation movement, in particular as embodied in the Save-the-Redwoods League. He called upon the audience to support preservation of the redwood heritage, and impressed them with the importance of a redwood national park, especially at Bull Creek. His most amusing effort was for an unnamed group, where at the end of his talk he mentioned that because of a rumor that there could be no solicitations for the Redwood League at the entrance to the auditorium, he was putting a little table at the exit door next to the screen. "And when you come by you can sign a little slip making yourself a member of the Save the Redwoods League and it will be the most precious thing of the kind you ever did in your life and blithe will you be to remember it."[19]

Between 1919 and 1925 Jepson talked from Santa Barbara to Santa Rosa and from San Francisco to Lodi. Furthermore, he began making repeated excursions into the redwood country along the Eel River—four times up and down a fifty-mile stretch—where effort was intensifying to establish a state or national park.

Meanwhile, in his role as a scientist he made botanical collections and observations, and arrangements for a licensed forester to measure some of the greatest giants. Earlier he had obtained sets of photographs of the redwood country, both in its pristine state and in its lumbered condition. Now, in his role as a redwood "ambassador" he led several groups of important people to experience "the Avenue of the Giants." In 1924 one influential party came from the San Francisco Bay area by chauffeur-driven touring car![20]

But undoubtedly the group most important to him was the Cornell Botanical Expedition in September 1921, under the leadership of botany professor K. M. Wiegand of Cornell University.[21] The large group had already visited Glacier, Yellowstone, Mount Rainier, and most recently Mount Shasta. Jepson met the expedition members when they arrived, the college students "bronzed" from the out-of-doors, the young women in trousers. Jepson, with his assistants, conducted two carloads on a camping trip among the Bull Creek redwoods. Even Jepson was inspired by the experience: "It was not merely a renewal of pleasure. There was a livelier exaltation of the mind than hitherto experienced, a profounder stirring of one's thoughts regarding the nature and history of these giants . . . . They are so tall and they stand so closely that their crowns seem to belong to another world."[22]

When the Save-the-Redwoods League formally began in 1919, it had one hundred dollars in its treasury. By 1999, despite all the millions that have been given away over the years on behalf of redwood preservation, the total assets still exceed fifty million dollars. Today, heading the list of League publications is Willis Jepson's fine, readable pamphlet, *Trees, Shrubs & Flowers of the Redwood Region*, first published in 1934. With innumerable revisions and printings it remains current and choice.

Starting with the group of dedicated councilors that constituted the League's first roster, Jepson would remain on the council until his death in 1946. Out of those earliest campaigns initiated by Jepson and his colleagues, many of them also associated with the University of California, would eventually come preservation of half of the biosphere's remaining coastal redwoods: Richardson Grove State Park which was an early dream, the protection of those giants along Bull Creek (Humboldt Redwoods State Park) and numerous other large and small preserves. At long last, Redwood National Park was established in 1968 in extreme northwestern California, and in 1994 a landmark cooperative agreement between the National Park Service and the State of California created the Redwood National and State Park. The park is now a World Heritage Site and International Biosphere Reserve.

During March of 1941 Willis Linn Jepson, although in his mid-seventies and in failing health, was still being invited to present something on the redwoods—on this occasion a special article for the California Spring Garden Show about "The Redwood Belt and its Native Flora." His enthusiasm had not flagged over the years, as he wrote:

"Avenue of the Giants," 1940. *Photograph provided by Newton Drury of California State Parks. Jepson Herbarium Archive.*

> There is no other forest remotely like it in California or any other part of the earth. One goes back to it ten times, a score of times, a hundred times—and still the mind is not satiated. One must go yet again and again; and so he closes the door behind him—locks the door on endless duties and many cares, leaves the cat with the neighbors—leaves behind the numerous persons who are always "starting something" and getting you to do the work, the multitude of modern inconveniences, patented and unpatented and fares forth to a glad and delightful world that is ever new and fresh and carefree and strangely beautiful—the Redwood Belt.[23]

The scientific name of the Coast Redwood is *Sequoia sempervirens*. Translated, the species essentially means "always living," which applies aptly not only to this famous conifer in its many California preserves today, but also to the spirit of those individuals past and present, so many of them associated with the University of California, who have made "Save-the-Redwoods" a living ideal.

ENDNOTES

1 Jepson Field Book 31, 52-107, Jepson Herbarium Archives, University of California, Berkeley. Covers the Columbia stay.

2 Jepson lecture, "The Redwoods of California" for the Save-the-Redwoods League, April 13, 1922, Wheeler/Jepson Collection, box IV, Jepson Herbarium Archives.

3 *San Francisco Chronicle*, June 9, 1915, 11.

4 Jepson lecture, "The Redwoods of California."

5 Rough drafts and/or final manuscripts for many of these lectures are in the Wheeler/Jepson Collection, box IV, Jepson Herbarium Archives.

6 Jepson lecture, "The Redwoods of California."

7 Jepson Field Book 1, 130-31, Jepson Herbarium Archives.

8 Willis Linn Jepson, *The Silva of California* (Berkeley: Memoirs of the University of California, 1910), 138

9 Jepson, *Silva*, 137.

10 Elizabeth Schlappi, "Saving the Redwoods" (master's thesis, University of California, Berkeley, 1959), 30.

11 Madison Grant, "Saving the Redwoods," *Zoological Society Bulletin*, 22:5 (1919), 118.

12 Rough drafts or final copies of these are in the Wheeler/Jepson Collection, box IV, Jepson Herbarium Archives.

13 William Setchell to Dr. F. B. Sumner, October 7, 1921, Jepson Correspondence, vol.15, 192, Jepson Herbarium Archives.

14 Mrs. W. F. Kelly to Willis Jepson, February 23, 1921, Jepson Correspondence, vol. 15, 133, Jepson Herbarium Archives.

15 Mrs. W. F. Kelly to Willis Jepson, July 19, 1921, Jepson Correspondence, vol. 15, 134, Jepson Herbarium Archives.

16 Kelly to Jepson, "Sunday afternoon" no date, Jepson Correspondence, vol. 15, 136, Jepson Herbarium Archives.

17 Kelly to Jepson, "Tuesday morning" no date, Jepson Correspondence, vol. 15, 137, Jepson Herbarium Archives.

18 Willis Jepson toast, "Save the Redwoods," Sierra Club, December 19, 1919; "Save the Redwoods," Bohemian Club, ca. April 1920, Wheeler/Jepson Collection, box IV, Jepson Herbarium Archives.

19 Willis Jepson ink manuscript for lecture, "Save the Redwoods," no date or place, Wheeler/Jepson Collection, box IV, Jepson Herbarium Archives.

20 Jepson Field Book 41, 86, Jepson Herbarium Archives.

21 Jepson Field Book 38, 182, 187, Jepson Herbarium Archives; Jepson to Robinson, December 1, 1921, Wheeler/Jepson Collection, box II, Jepson Herbarium Archives.

22 Jepson to Robinson, ibid.

23 Willis Jepson, rough draft of "The Redwood Belt and its Native Flora," March 1, 1941, Wheeler/Jepson Collection, Jepson Herbarium Archives.

AUTHOR'S NOTE: In 2000 the Jepson Herbarium will celebrate its fiftieth anniversary. Its archives and those of the associated University Herbarium contain a wealth of historical as well as scientific material related to the University of California.

Willis Linn Jepson, professor of biology at Berkeley from 1891 to 1946.
Jepson Herbarium Archives.

THE UNIVERSITY OF CALIFORNIA IN THE NATIONAL PARKS

William Roberts

Stephen T. Mather. *The Bancroft Library (Mather POR 2).*

Stephen T. Mather, class of 1887 (1867-1930)

After working as a reporter in New York and in the borax business, even forming his own company, in 1915 Mather became Assistant Secretary of the Interior under Franklin K. Lane, and became the first Director of the National Park Service, formed in 1916, remaining in this post until his retirement in 1929.

Under Mather's administration, the fourteen separate national parks came under a single administration, which promoted common goals for the parks and, more importantly, a broader understanding of the ideals of the national park system. Park lands increased by one-half, with such parks as Rocky Mountain, Lassen Volcanic, Grand Canyon, Zion, Bryce Canyon and Great Smoky Mountains being added during this time.

Franklin K. Lane, class of 1889 (1864-1921)

After opening a law office in San Francisco and subsequently being elected city and county attorney, Lane was appointed to the Interstate Commerce Commission by Theodore Roosevelt, eventually becoming chair of the commission. Woodrow Wilson gave Lane a seat in his cabinet as Secretary of the Interior in 1913, which he held until 1920. During this period he championed conservationist principles, particularly in the West and in Alaska. The National Park Service was formed within the Department of the Interior during his tenure.

Franklin K. Lane. *The Bancroft Library (Lane POR 1).*

Horace M. Albright, class of 1912 (1890-1987)

Having served as Assistant Director of the National Park Service under Stephen T. Mather, Albright was appointed director upon Mather's retirement in 1929 and served until 1933. He had been superintendent of Yellowstone National Park from 1919 to 1929. He worked for inclusion under the park service of historic sites and other facilities then under the Department of Agriculture. Although he returned to the business world in 1933, he remained active in the conservation field, on National Parks committees and with the Save-the-Redwoods League, among other organizations. Albright was named Alumnus of the Year in 1953.

Horace Marden Albright.
The Bancroft Library (Albright POR 1).

Newton B. Drury, class of 1912 (1889-1978)

Drury was the director of the National Park Service from 1940 to 1951; the third of four directors to that point who had attended the University of California. He left the National Park Service to assume the directorship of the California Division of Beaches and Parks, which post he held until 1959. Drury had been active in the Save-the-Redwoods League beginning in 1920, and he was eventually its director. His primary focus in the League was land acquisition, particularly in areas of scenic interest; he took a leadership role in the formation of twenty-seven redwood parks.

Newton B. Drury, June 15, 1968. *The Bancroft Library (BANC PIC 1979.066:12—ALB).*

"THE GROVES HAVE EVER BEEN TEMPLES"

JOHN CAMPBELL MERRIAM AND THE SAVE-THE-REDWOODS LEAGUE

"THE TERM OF YEARS during which John Campbell Merriam lived upon the earth covered only a minute fraction of the segment of time since the Creation. . . . Yet it is doubtful whether there has ever been a century of earth history during which the talents of this particular man could have been more appropriately and effectively employed." So begins the obituary written in 1945 by Ralph Chaney, director of Berkeley's Museum of Paleontology from 1931 to 1957 and at one time Assistant Director of the Radiation Laboratory.[1] Professor Merriam, beginning graduate studies himself in geology under Joseph LeConte at the university in 1887, became a member of the faculty in 1894 and rose to full professor by 1912.

> Over these years he taught a general course in which large numbers of undergraduates were told the facts and philosophy of the history of life; hundreds of alumni still refer to this course as one of the most valuable in their university experience, and after a lapse of decades regard Dr. Merriam as a scholarly and inspiring leader.[2]

Merriam served a short tenure as dean of the faculties as Wheeler was retiring and left the university in 1920 to become president of the Carnegie Institution, from which he retired in 1938. Chaney describes with the enthusiam of a former student the paleontological and geological expeditions, collections, researches, and philosophical as well as scientific writings of Merriam, from his first fossil hunting trip to Oregon in 1899. However:

> Perhaps the most timely activity of this productive life was his founding of the Save-the-Redwoods League, with Henry Fairfield Osborn and Madison Grant in 1917. Not a single coast redwood along the highway was then publicly owned, and the finest forests were being cut for lumber. During the nearly thirty years ensuing more than 45,000 acres of redwood forest have been set aside as state parks, at a cost of $7,500,000. For thirty miles along the Redwood Highway these trees rise to stimulate the imagination of the visitor who sees in Sequoias the oldest living things, who comes to recognize in them a kind of beauty associated only with antiquity. Bull Creek Flat, a thousand-acre forest of giant redwoods maintained in its natural state, represents the high achievement of a man who, as President of the League for nearly a quarter of a century, guided this major project

John C. Merriam, from W.C. Jones, *Illustrated History of the University of California*, 1901.

> of conservation—who made it possible "to preserve somewhere something from the original face of nature in such a way that later generations may at least know what the Creator was attempting to do when he made the pleasant lands, and the sublime regions where sometimes men worship.[3]

Chaney attributed Merriam's devotion to the preservation of the redwoods to his childhood fascination with the woods near his Iowa home: "Whoever looks into a forest, whether through eyes of the inexperienced or untutored mind, or with penetrating keenness of enlightenment, finds its windows framing pictures in which the shadowy background presents a challenge to imagination."[4] It was with the "keenness of enlightenment" of a scientist that Merriam saw the groves of California sequoia, but he shared with those of "untutored mind," the citizens of California, the need for their preservation.

ENDNOTES

1 Ralph W. Chaney, "John Campbell Merriam, (1869-1945)," *Year Book of the American Philosophical Society*, 1945, 381-87. The title "The groves . . ." is by Merriam.

2 Ibid., 382.

3 Ibid., 385.

4 Ibid., 382.

HELPING FAMILIES COPE WITH THEIR ENVIRONMENT

Helen Denning Ullrich

ONE RESULT OF THE FEDERAL SMITH-LEVER ACT of 1914 was to create a program using "home demonstration agents." These were female academic staff of the University of California holding college degrees in home economics, hired to teach farm wives living in the isolated areas of California. The university had become the land grant institution of California as a result of the federal Morrill Act of 1862 which mandated development and dissemination of agricultural science to help farmers make better use of the land and its produce. The Smith-Lever Act provided federal funds to establish the University of California Cooperative Extension Service, which was made a part of the College of Agriculture. The act also addressed education for the farm wife, as there was growing concern that unless she was helped to feel less isolated and the living conditions for her family improved, it would be hard to keep her "down on the farm." It may also have been in response to the suffragette movement and the increasing interest in academic training in the science of homemaking at the time.

The University of California had already recognized the importance of carrying the results of agricultural research to all parts of the state. There were Farmers Institutes as early as 1892, and from 1908 through 1912 demonstration trains traveled throughout the state carrying exhibits of the various phases of agriculture. The trains also included information for the farm wife about growing and preserving food for the family. By 1916, California employed several home demonstration agents who gave lectures and demonstrations such as how to make a wooden fruit evaporator to dry fruit, manage chicken and egg production, and arrange work areas for efficiency in farm kitchens.[1] The program was carried on through homemaker groups established at county Farm Bureau Centers.

Home demonstration agent in Contra Costa County car, 1923. *University Archives (UARC PIC 308m.ax.hpd box1).*

Katherine Bennitt was the first home demonstration agent in Solano County. Her first Annual Report, December 1, 1921–November 30, 1922, recorded typical experiences in those days. The following is an excerpt from the story based on her report:[2]

> When Katherine Bennitt arrived in Solano County, she found it to be a truly rural county which produced and canned asparagus in one area, dairying and grain in another, and a large area where all kinds of fruit were raised, canned, and dried. She commented that the cherries far surpassed any she had ever seen before. They were as large as plums, delicious in flavor, and a beautiful rich, dark red. On the ranches, one would see complete little villages of people working with the fruit, the drifting population of California which progresses from one section of the state to the next as the various seasons come around. It seemed like fairyland in the springtime with the orchard hillsides in radiant bloom, and the trees and grass of the richest green. Fairfield, the county seat, and its twin city, Suisun, shared a population of about 2,000. [The population in these two cities in 1990 was 100,000.] The delightful rural surroundings, combined with a truly western spirit of hospitality and cooperation, made the county a joyful place to work.
>
> When the Farm Advisor and the Home Demonstration Agent met with the program committees which consisted of men and women, the programs would include projects relating to the farm, home, and community. Projects included a wide variety of interests such as graveling two miles of main road, cleaning up thistles, dress making, planning meals, curing of meat, and jelly making.
>
> There was a high level of interest in making home evaporators. Lillian Clark, who was a state specialist, came and conducted seven all day meetings in seven centers showing how to make the evaporators and how to dry different foods including corn, beans, carrots, soup vegetables, fruits, and even meats. Thirteen evaporators were made and a total of 866 lbs. of fruits and vegetables were reported dried.

A farm couple proudly display their newly-made home evaporator, 1921.
University Archives (UARC PIC 308m.ax.hpd box 1)

Nutrition education aides being taught about food selection from the seven food groups wheel, 1955. *Courtesy of the Groppe Private Collection.*

During World War II the national "Food for Freedom" campaign called for a significant increase in food production, and home advisors held conferences to encourage home "Victory Gardens," and gave many, many demonstrations on preserving food at home. With federal funds for additional extension staff, the Emergency Farm Labor Project organized the allocation of youth, city volunteers, foreign workers, and prisoners of war to farm areas needing harvest laborers.

By 1945 there were concerns raised about the living conditions of farm laborers and a special home advisor was assigned to work with low-income migrant families. In 1949, there was a great deal of publicity about the deaths of several children of farmworkers followed by an investigation and an attempt to improve their conditions.

Irene Fagin was an associate state leader from 1945 to 1962. The following story is based on a 1979 interview with her as she told about her experiences concerning the living conditions of migrant farm workers. Fagin

> had just returned from her sabbatical leave during which she completed a master's degree at Teachers College, Columbia University. California Governor Warren had issued a strong recommendation to the State Departments of Health and Welfare along with Extension to work on the problem of migrant workers' children whom the press claimed were "starving" to death. Extension Director Coke was in favor of Extension being involved. Fagin was assigned the responsibility to develop the program because she had experience working with various state agencies during World War II when she directed women's participation in helping to bring in the crops and, in 1949, she was responsible for supervising the home economics program in the central valley.
>
> One of the first steps was to contact the health and welfare departments to make sure "we would all tell the same story." For example, they

would explain nutrition and how to use surplus dried milk, dried eggs, beans, and other dried commodities. Extension gave training meetings to leaders of all organizations, including church groups who were helping. It was important not to give conflicting advice and to simplify instructions as much as possible.

Fagin commented that the home economists thought nutrition was the most important thing to improve the lives of the migrant worker families. But the women wanted sewing because they wanted their children to dress well and look like all the other children. So they taught children's clothing, but at every session also did a 10-minute demonstration on dried foods and nutrition.

The women wanted to fix up their houses so demonstration cabins were developed. Some big farmers would have a camp with as many as 50 cabins and they would supply one for a demonstration cabin. In areas where the farm advisors and county directors were in favor of the program, the farmers were very cooperative. When a demonstration cabin was completed with a certain kind of wallpaper, the women were so impressed that they would often hunt for that exact paper and shade of paint.

Soon after the program with migrant workers started it was evident that it should be run by the counties, not the state. The problem of gaining funds for staff was helped by a grant by the Rosenberg Foundation. The Rosenberg family had roots in the San Joaquin Valley, and so they offered to finance two people for two years. Eventually there were some home advisors who devoted full time to the program and others gave part of their time.

Grace Kampen, housing and home furnishing specialist, was also interviewed in 1979 because she had been involved in the migrant worker program. She wanted to make a demonstration house in the farm community where Chicanos were living. Georgia Wren, home advisor, Fresno County, found a rancher who was very cooperative. He provided one of the cabins which were used by the workers on his ranch. The following is Kampen's story about her experiences in 1949:

Kampen told that they used a one-room cabin. There was no water and it was August and terribly hot. The first step was to clean up the cabin. When Kampen and Wren walked in the door, they found the floor was covered with excreta—human and animal. Kampen and Wren each took half of the cabin and cleaned and sterilized the floor. There was a well and pump out in the yard and they had to carry the water into the cabin. After they got it cleaned up, then they were ready to start to decorate and they were on a small budget.

They went to a place where they had wallpaper for 10 cents a roll. They wallpapered late at night, and then it would be down in the morning. Each day it would dry out and not stick. Kampen found some old literature that recommended the use of molasses in wallpaper paste. It worked but then they worried that it would attract bugs. But it didn't.

When they were ready to start on the furniture, they collected boxes. People became terribly curious as they watched the progress. Kampen and Wren would explain what they were doing as they made furniture out of the boxes. They made a counter for the dishpan and made it lower to accommodate the children.

Although they had some grant money from the Rosenberg Foundation, each purchase required a lot of red tape. One could not buy anything over $10 without a lot of paper work. When it came to buying a stove they got five receipts. One for the oven and one for each of the individual burners.

The cabins were small with no bathroom or running water and a lot of people would be occupying it. There was room for only one bed. The children would be sleeping on the floor. Kampen was very proud of the bedspread which they made out of burlap sacks. They sewed the sacks together and fringed the edges.

When the cabin was done, the owner was very pleased with the result. He improved the cabin by running in water and adding another room. Kampen made a slide set and publication which was called, *Storage from Boxes and Sacks*. It was used by other states and also the Peace Corps.

In the 1950s and 1960s California experienced some massive floods. The home advisors provided important resources. They worked together with farm advisors, Red Cross, Salvation Army, Civil Defense, and volunteers to help evacuate people in flooded areas, distribute emergency food and clothing, find places and ways to dry and refinish furniture, and give advice on home rehabilitation problems. Winifred Kowalliss, who was the home advisor in Butte County from 1942 to 1969, had several experiences helping flood victims. In an interview with the author, she tells her story about the mass flooding in 1955 when the levee of the Feather River broke in Yuba City and again in 1965 in Humboldt County when the Eel River flooded:

In 1955, when the levee of the Feather River broke in Yuba City, 50 farm and home advisors from near counties met at the Marysville AES [Agricultural Extension Service] office on New Year's Day and returned each day of the weekend. Each was assigned an area where they went from farm to farm and from house to house to bring helpful information about the flood, to answer questions and to see how the AES could best help.

Because the advisors in both Yuba and Sutter Counties were so emotionally involved, I was asked to coordinate the AES flood activities. At the end of the day, every one returned to the office with the problems and questions they could not answer. The questions and problems were researched by UC specialists, the health department and other involved agencies. On my way home, about midnight, I stopped at the home of Henry Everett, County Director, Butte County, where the head secretary, Katherine Breedlove, was waiting to receive the questions and answers. She and the other staff members worked during the night to type, mimeograph, and assemble the material for me to pick up and have available for the 7 a.m. meeting in Marysville. Here the 50 advisors, specialists and members of other involved agencies met to further clarify any questions on the hand outs and give any new instructions. This procedure was repeated all weekend.

I remained in the flooded area for several months to help organize workshops and secure answers to questions and problems that came up. One workshop that I recall as being very helpful was organized to clean small electric equipment. The husband of a Butte County AES secretary had an electric business. He volunteered his time to help. People brought their small electric appliances that had been inundated by the floodwaters. Mr. Breedlove

demonstrated how to clean the appliances and helped each person. Finally he checked each piece for safety before the person could take it home.

The clean up after the Yuba City flood was unique in that the area had several large dehydrators. It was not the season for drying fruit, therefore the equipment was available for families to bring their wet carpets to be dried. The first step was to scrape and wash the mud off the rugs and carpets. The space for this was also available at the dehydrator plants. Many rugs and carpets were saved as the result of the cooperation of the management of these companies.

In 1965, as the result of the flood of the Eel River, several AES advisors and specialists who had experience with previous floods were sent to Eureka to help. In addition to personal contact with farms and homes, much helpful information and cautions were given over the local radio stations. Because of the mountains, the families living in southern Humboldt County did not receive the radio signal from the Eureka stations. KPAY, a radio station in Chico, where I had a daily radio program, volunteered to tape a message from me every day at midnight. These messages were played several times during the day and evening. That made it possible for families in southern Humboldt County to receive information, cautions, and suggestions about the flood that were directed to them.

Two volunteers teaching a homemaker group in Orange County about food selection, circa 1962. *Courtesy of Watt Private Collection.*

While home economists had always been concerned about the low-income malnourished families, it was the politicians and the news media who brought the widespread poverty in America in the 1960s to the attention of the public. In 1969, Congress established the Expanded Food and Nutrition Education Program (EFNEP). It was a program that extension was uniquely well-suited to carry out. It reached into the low-income urban communities, helping disadvantaged and isolated homemakers to improve their lives. The program, extension's first big step towards meeting the needs of urban minorities and other disadvantaged adults, was carried out in seventeen counties where there were significant numbers of families with limited economic and educational resources.

The federal guidelines for the EFNEP program required the counties to hire ethnic minority program assistants to work in low-income neighborhoods. These assistants were able to make contact with thousands of hard-to-reach families on a one-to-one basis. Several home economists recounted the satisfaction in helping these paraprofessionals to improve their own lives while helping others.

In a tape recorded interview with a home advisor in Los Angeles County, Genevieve Ho told about finding some people who could write materials in Chinese, Vietnamese, and Korean and use foods familiar to these populations. There were thirty-four nutrition education aides (NEAs) in Los Angeles County EFNEP but no Asian NEAs. But she found Mrs. Tong who became the Chinese NEA and slowly worked with Chinese-speaking mothers who were mostly new immigrants to the United States and had young children. After gaining their confidence Mrs. Tong helped them to incorporate some American foods into their family diet. She and Ho collaborated with Florence Chan, EFNEP home advisor, San Francisco County, in the development of lessons and simple handouts, written in Chinese—although there was no Chinese typewriter to be found in Los Angeles, and only one in San Francisco. As word spread about these materials they became widely used by agencies across the country. In the San Joaquin Valley home economists answered the needs of the Hmong population, working with the Women, Infants and Children, and Head Start Programs to study food habits and cultural attitudes to adapt EFNEP programs.

In 1976, after the riots, some of the Los Angeles extension staff decided to start a program of gardening in those low-income urban areas. The program grew into the statewide Master Gardening Program for 4-H and adult groups. The program expanded into Master Food Preserver and Master Food Shopper and focused on growing nutritious food in small areas, preserving surplus food and making wise food choices in the supermarket. The master programs trained leaders through a series of workshops, giving them skills to teach to others. There were some community food preservation centers where groups came together and canned surplus farm products, and under George York, food technology specialist, these centers taught all aspects of food preservation and safety. York carried out workshops under all kinds of conditions including drying fruit in unusual surroundings and canning in a facility where water had to be hauled in by the bucketful.

As time passed the original name of home demonstration agent was eventually changed to home advisor, then to home economist and now, in the 1990s, they are known as nutrition, family, and consumer sciences advisors. They are members of the University of California Division of Agriculture and Natural Resources staff who are assigned to county Cooperative Extension offices throughout the state. In addition, there have always been specialists in areas such as nutrition and foods, clothing, home management, housing and home furnishing, child development, food preservation, urban gardening, and 4-H programs. The specialists, housed mainly on the Berkeley or Davis campuses, are responsible for writing publications and training and assisting the county staffs. They provide leadership in the use of research, and adapting programs to social, cultural and environmental change.

In 1996 the Nutrition, Family and Consumer Sciences Program (NFCS) published a strategic plan for 1996 through 2000. The mission is "to conduct research and educational programs to address critical issues facing California's diverse population in family development, family resource management, and food, nutrition and health." The Cooperative Extension program has come a long way from the canning and sewing lessons of the early days, to addressing the social needs of the times.

Those who served in extension can take pride in being a part of what has been called by many one of "the greatest adult educational efforts in the world." In 1999, Jeannette Sutherlin, NFCS Advisor, Fresno County, wrote: "I believe today and all of the years since the inception of NFCS, we are staff with PASSION for this program and the families we serve. I gain much satisfaction believing I make a difference in families lives, especially low income families."[3]

ENDNOTES

1 Some of the background information about extension is found in Ann F. Scheuring, *Sustaining Comradeship, the Story of University of California Extension, 1913-1988*, Regents of the University of California, 1988, and in Scheuring, *Science and Service: A History of the Land-Grant University and Agriculture in California*, Regents of the University of California, Division of Agriculture and Natural Sciences, 1995.

2 The quoted interviews found throughout this article are abridged and taken from: Helen Denning Ullrich, *Helping Families Help Themselves, The Histories and Stories of Home Economists in the University of California Cooperative Extension*, privately printed by the author, August 1999.

3 Quoted by Ullrich, *Helping Families*, 81.

EFNEP logo.

"SAVING THE BAY"

AN INTERVIEW WITH KAY KERR AND SYLVIA McLAUGHLIN

Carroll Brentano

When I telephoned a friend, her husband told me
She's not here tonight, she's out saving the Bay.

SO BEGINS THE POEM BY JOSEPHINE MILES, a great University of California poet who cared about nature and its preservation.[1] It is not known who the "she" is in these lines; but perhaps Catherine (Kay) Kerr (her long-ago schoolmate), perhaps Esther Gulick, or Sylvia McLaughlin (or really any of a host of dedicated Berkeley women) who might have been out that night, "saving the Bay." San Francisco Bay was saved and its saviors were the Mesdames Gulick, Kerr, and McLaughlin, the three founders of Save San Francisco Bay Association (known as Save-the-Bay or, now, Save The Bay).

In 1961 all three lived in or near Berkeley and were married to men intimately tied to the University of California: Kay Kerr's husband was president; Esther Gulick's was a professor of economics; and Sylvia McLaughlin's was chairman of the board of regents. My questions to Mrs. Kerr and Mrs. McLaughlin, (Esther Gulick had died in 1995), when I interviewed them last spring, were designed to find out how their ties to the university helped or hindered the cause they took up.

The cause was initiated with an outline map of San Francisco Bay as it would look in 2020 if all the fill projects then being considered were carried out. Published in the *Oakland Tribune* in December 1959, the map, drawn by the Army Corps of Engineers, showed a thin river-like strand of water, preserved only as a shipping channel. The three women decided that something must be done, and they consulted the prominent men in the Sierra Club, Save-the-Redwoods League, and other conservation groups. Kay Kerr recalled:

> I remember Dave Brower saying, "Well, it's just exceedingly important, but the Sierra Club is principally interested in wilderness and in trails." The next guy, Newton Drury, said "This is very important, but we're saving the redwoods, and we can't save the Bay." It went around the room to the point where there was dead silence. So we said, "Well, the Bay is going to go down the drain." Dave Brower said, "There's only one thing to do: start a new organization, and we'll give you our mailing lists.". . . They all wished us a great deal of luck, and they went out the door.[2]

Re-asking three of the ten questions asked by the interviewer in 1985 for the oral history of Save The Bay, the present interviewer inquired "How did you get widespread support?" Kay Kerr's first answer was "name recognition"—using mailing lists to appeal to the Berkeley faculty, they got a 90 percent response. Second, the problems were "visible," after all, from the Berkeley hills the smell, the sights, the bulldozers on the shoreline were apparent. Third, the three women had their own mailing lists from myriad organizations they belonged to or had contact with; later, they relied on these same organizations for the buses to take advocates to Sacramento.[3]

Sylvia McLaughlin, Esther Gulick, and Kay Kerr after receiving the Robert Kirkwood Award, March 12, 1986. *Photograph by Maggie Miller. Regional Oral History Office.*

Another answer, to the same question about support, was the "research of facts [as the] basis for our letters and flyers and media stories." For this, the single most specific help from the university came with a suggestion, accompanied by a five-thousand dollar stipend, by political science professor Eugene Lee to Mel Scott of the Institute of Governmental Studies. Lee asked Scott to research the problem of bay fill. Scott's book published in 1963, *The Future of San Francisco Bay*, became for the founders an invaluable resource for the needed facts. For, as Mrs. Kerr remarked: "the one thing you can say about conservationists generally—not now, but then—is that they all had hearts of gold, but didn't realize the importance of factual information."[4] She says in another place, "Without this factual background, support could not have lasted so many years and our attorney, Barry Bunshoft would have had more research to do for his crucial legal victories."[5]

The next question was: "What have been some of the reasons for the successful achievements of the Association?" Besides the reasons already given, there were the weekly meetings at the Kerr house where Esther Gulick and Kay Kerr did the mailings, drafting of brochures, planning of meetings, and directing the full time, minimally-paid "intern." Sylvia McLaughlin, who frequently attended the weekly meetings, was especially helpful with the

legislature and state administration through her husband's position on the board of regents. Kay Kerr pointed this out:

> When Clark was president the Regents met on Friday, and on Thursday night was a dinner to which the wives were invited. . . . We had a chance to talk to the Regents. . . . every month. To the point where both the governor, Pat Brown, and Glenn Anderson, the lieutenant governor would say "Now Kay, if you're going to sit next to me at dinner, you can only spend part of the time talking about the Bay."[6]

J. Eugene McAteer, 1959. *The Bancroft Library (McAteer POR 2).*

Another crucial university connection was the involvement of state leaders, Assemblyman (later senator) Nicholas Petris and Senator Eugene McAteer (a Berkeley graduate of 1937), who "were very familiar with the university community." After a breakfast meeting with Kay Kerr at Fisherman's Wharf, the latter took "the responsibility for legislative action 'if the ladies would stay out of it for now.'"[7] Needless to say, in 1964 Save The Bay founders helped to draft the bill establishing a San Francisco Bay Conservation Study Commission.

The nascent Save The Bay had lost, in 1962, its initial contest with the city of Berkeley over passage of an amendment to its tidelands grant, allowing it additional fill. However, by the end of 1962 the association had 2,500 members[8] and Berkeley changed its policy at the end of 1963.

Meanwhile, the state study commission recommended the creation of a San Francisco Bay Conservation and Development Commission (BCDC), and, after a "major conservation battle" was led in the legislature by Petris and McAteer, backed up by the prodigious efforts of the members of Save The Bay, a bill, the McAteer-Petris Act, was passed in June 1965.[9]

Another battle was initiated in 1968 with a plan by Westbay Associates (David Rockefeller and the Crocker Land Company) to fill and develop twenty-seven miles of San Mateo County coast. The State Lands Commission authorized the filing of a lawsuit, lasting nine years, and the BCDC was in danger of being extinguished. Esther Gulick described the confrontation:

> There was the same worry as in 1965. . . . Again the letters and the telegrams poured into the legislature. Telephones were constantly busy. There were stickers on car bumpers, buttons on lapels, and Don Sherwood [a popular San Francisco radio host] again went into action. Concerned citizens and their friends drove to Sacramento. Many chartered buses were used.[10]

In the end Governor Ronald Reagan was persuaded, the Westbay people lost the suit, and the permanent establishment of the BCDC was won in the legislature by one vote. "For us, and for our thousands of supporters, this was the ultimate victory."[11]

The third of the three questions asked last June was, "What were the failures, and why?" Kay Kerr had two answers: one concerned the amount of land that could come under the jurisdiction of BCDC, since the League of California Cities was opposed to giving up any control by local government. The other,"we failed to realize how significant the special in-

terests of the airports and ports would turn out to be. Nothing could have been done??"[12] Sylvia McLaughlin underscored this in a letter to the Save The Bay membership regarding the new plans to enlarge San Francisco airport. "San Francisco Bay belongs to all California citizens. Before rushing this project through on a fast track, basic scientific, environmental and economic questions must be objectively answered."[13] The same questions they were asking forty years ago.

When the three women first went to the established conservationists for help, Sylvia McLaughlin reports that the men said, "Someone should really do something about this," and Esther Gulick commented "It turned out we were the somebodies."[14] Indeed they were—and although they were called other names: "enemies of progress, impractical idealists, do-gooders, posy-pickers, eco-freaks, enviromaniacs, little old ladies in tennis shoes and almond cookie revolutionaries,"[15] they were in fact very smart and imaginative. They had good friends and supporters in and out of the University of California, and above all, they worked hard. With grit, determination, and charm they saved the bay, and made their organization a model for similar efforts all over the world.

ENDNOTES

1 Josephine Miles, *Saving the Bay* (San Francisco: Open Space, 1967), np. In the June 1999 interview, Kay Kerr mentioned that she had gone to high school, in Los Angeles, with Josephine Miles.

2 *Save San Francisco Bay Association, 1961-1986*, Regional Oral History Office, The Bancroft Library, University of California, Berkeley, 1987 (hereafter: 1987 Oral History), 10.

3 Fact sheet prepared by Kay Kerr for the interview with Carroll Brentano, June 23, 1999, with answers to questions originally prepared by Mrs. Kerr for Malca Chall, interviewer for the oral history of 1987.

4 1987 Oral History, 12, 31.

5 Kay Kerr fact sheet.

6 1987 Oral History, 4. During the recent interview, Sylvia McLaughlin mentioned the importance of their husbands' support.

7 Kay Kerr fact sheet.

8 "Esther Gulick, Catherine Kerr, and Sylvia McLaughlin on Saving San Francisco Bay, 1988," *Green versus Gold, Sources in California's Environmental History*, ed. Carolyn Merchant [Washington, DC: Island Press, 1998; reprint of "Saving San Francisco Bay: Past, Present, and Future," in *The Horace M. Albright Lectureship in Conservation* (Berkeley, College of Natural Resources), no. 28, April 14, 1988], 361. The article is written in the first person by Esther Gulick. She reported that "many university faculty members had donated their time and expertise to the Association," 361.

9 Ibid., 362.

10 Ibid., 363.

11 Ibid., 364.

12 Kay Kerr fact sheet.

13 Sylvia McLaughlin, "Dear Friends of Save the Bay," printed letter from Save San Francisco Bay Association, May 17, 1999.

14 1987 Oral History, 10.

15 "Gulick [et al.] on Saving San Francisco Bay," 360.

ORAL HISTORIES ON THE UNIVERSITY AND THE ENVIRONMENT

Ann Lage

THE HISTORY OF THE UNIVERSITY OF CALIFORNIA and the history of California's environment and natural resources are two of the longest standing and most extensive subject areas documented by The Bancroft Library's Regional Oral History Office (ROHO). This essay provides a view of the shared territory of these two subjects, highlighting oral histories with faculty and alumni who have had prominent roles in studying, developing, managing, and preserving the environment and natural resources on university lands, throughout California, and worldwide.

Oral histories are in-depth, tape-recorded interviews, often many hours in length, which recount in their own words the lives and work of leading figures in recent history. Collections of briefer, subject-focused oral histories document an issue, event, or organization from varying perspectives through firsthand accounts by participants. The transcribed interviews, available in bound volumes and sometimes via the Internet, provide unique source material for scholarly research and lively reading material for a broader audience.

WATER AND COASTAL RESOURCES

University of California faculty and alumni have played a prominent role in the management of California's water resources, some contributing to the development of water supplies for agriculture in a dry land and others providing a critique of profligate use of this limited resource. **Frank Adams**, an irrigation engineer, economist, and professor at Berkeley from 1916 to 1945, discusses his role in organizing irrigation districts and in the Central Valley Project in a 1959 oral history. **Sidney T. Harding**, professor of irrigation and a key figure in California water projects for more than fifty years, chronicles *A Life in Western Water Development* in a 524-page memoir produced in 1967.

Other oral histories take a more critical stance toward water development. **Paul Schuster Taylor**, professor of economics at Berkeley from 1922 to 1962, records in his 1973 oral history the story of his long crusade to protect the rights of small farmers to federally subsidized water. Taylor, the husband of photographer Dorothea Lange and a mentor of university president Clark Kerr, worked to attack the root causes of rural poverty by reforming California water policy. Hydrologist **Luna Leopold**, professor of geology at Berkeley since the 1970s and a prominent environmental scientist and thinker, discusses his work as chief hydrologist for the U.S. Geological Survey and his contribution to environmental policies from the Florida Everglades to the Colorado River to the Alaskan tundra. Of particular interest in his 1993 memoir are his recollections of growing up in a family of environmentally oriented scientists: Luna Leopold is the son of Aldo Leopold, one of the founding fathers of the wilderness movement, and brother to wildlife biologist **Starker Leopold**, also a former Berkeley professor, who has a brief oral history in the Sierra Club History Series.

Joel Hedgpeth (class of 1933), marine biologist and founder of the Society for the Prevention of Progress, is widely known as a raconteur and Renaissance man. His 1996 oral

history illustrates how he has applied his scientific knowledge and sharp wit to defend San Francisco Bay from water development projects, salmon from dams on California's rivers, and Bodega Bay from construction of a nuclear power plant. The 1987 oral history documenting the Save San Francisco Bay Association includes interviews with the three association founders, university wives **Esther Gulick**, **Catherine Kerr**, and **Sylvia McLaughlin**, whose foresight, energy, and political acumen has had a lasting impact on the environment of the San Francisco Bay region.

Two ROHO oral histories document the careers of prominent coastal engineers from Berkeley's College of Engineering: **Morrough O'Brien** and **Robert Wiegel**, whose studies and consulting work have shaped beaches and harbors along the California coast and internationally.

MINING AND MINERAL RESOURCES

Nowhere is the shared territory between university history and the history of natural resource development more striking than in the oral history of **Donald H. McLaughlin**, alumnus, faculty member, regent, and mining company executive. As Mr. McLaughlin recalls in his 1975 oral history, he was raised as part of the household of university benefactress and regent Phoebe Apperson Hearst from an early age, when his widowed mother took a position as Mrs. Hearst's assistant. Mrs. Hearst took a personal interest in his education, even hosting a party for his entire Cal graduating class in 1914 at her elegant Hacienda in Pleasanton. With his interest sparked by the Hearst family mining exploits, Donald McLaughlin studied mining geology at Berkeley and Harvard. His career took him from copper mining in Peru to teaching at Harvard and Berkeley, where he was the first dean of the College of Engineering, and then back to the mining industry, where he became the head of Homestake Mining Company, formerly a Hearst enterprise. In 1951, Governor Earl Warren appointed him to the Board of Regents of the University of California, where he served for fifteen years and was known as a guardian of the architectural integrity of the Berkeley campus. Donald McLaughlin's predilection for resource development was tempered by his wife Sylvia's commitment to environmental protection.

Donald McLaughlin, Peru, 1924. *Regional Oral History Office.*

Many other graduates of UC Berkeley's College of Mining are interviewees in the Western Mining in the Twentieth Century Oral History Series, which was inaugurated in 1986. These include **Philip Read Bradley, Jr.** ('26), who recounts his experiences as a mining engineer in gold fields of California and Alaska and mining in Mexico, Thailand, and Columbia; and **J. Ward Downey** ('36), a mining and construction engineer whose career stretches from the Depression era to the 1990s and from Grass Valley, California, to Egypt. The life story of **Plato Malozemoff** ('31) begins with his childhood in Siberia and his escape from revolutionary Russia through Mongolia to Oakland in 1920. His education at

Berkeley's College of Mining led him to metallurgy and management work in Latin America and to the chairmanship of Newmont Mining Corporation, where he oversaw metal, coal, cement, and oil ventures worldwide. Another Berkeley grad and Newmont Mining metallurgist, **Frank McQuiston** ('31), worked with the Atomic Energy Commission in the postwar years procuring uranium in Colorado and Africa.

More mining memoirists with university roots are **Wayne C. Hazen** ('40), who designed vanadium and uranium processing plants in New Mexico and managed a family metallurgical research business from 1940 to 1995; geologists **Gordon Oakeshott** ('28) and **Vincent Perry** ('22); **John Joseph Reed** ('44), a pioneer in applied rock mechanics; and **Alexander Wilson** ('48), metallurgical engineer and president of Utah Construction and Mining Company.

Two Berkeley alumni had careers in the world of mining but are better known for their prominence as conservationists: **Horace Albright** from the illustrious class of 1912, was instrumental in the passage of the legislation creating the National Park Service and for many years was assistant to its first director, Stephen Mather, and then was Mather's successor as director. He resigned from the Park Service in 1933 to become president of U.S. Potash, Inc. and then of U.S. Borax Corporation. Albright was interviewed for the western mining series in 1986, shortly before his death at age 97, and for the Parks and Conservation series, in conversation with fellow park director **Newton B. Drury**, in 1961. **William E. Colby** ('98), longtime secretary for the Sierra Club (see below), had a career in mining law and discusses important cases and conflicts between mining and conservation in his *Reminiscences* (1953).

FORESTRY AND SOIL CONSERVATION

Oral histories of Berkeley forestry professors **Emanuel Fritz** and **Henry J. Vaux** and alumnus **A. E. Wieslander** document the School of Forestry's long tradition of combining scholarship and teaching with public service, particularly in the management of California's wildlands. Fritz, an advisor to the Save-the-Redwoods League as well as to the redwood logging industry, was an author of the California Forest Practices Act of 1945. Vaux, a forest economist, recast state forestry policy as chair of the California State Board of Forestry during the environmentally aware 1970s and 1980s. A 1985 interview with Mr. Wieslander, who lobbied the legislature for a forestry education program at Berkeley as a preforestry graduate of the class of 1914, follows his long career with the U.S. Forest Service, where he designed and directed for thirty years an innovative vegetation and soils mapping project in California.

Emanuel Fritz, 1951.
Regional Oral History Office.

The close ties between UC Berkeley's School of Forestry and the U.S. Forest Service Forest and Range Experiment Station, which for many years was sited on the Berkeley campus in Hilgard Hall, are evident in the 1963 oral history with **Edward I. Kotok**, director of the Experiment Station from 1926 to 1940. **Walter C. Lowdermilk**, who earned his Ph.D.

in forestry and geology from Berkeley in 1929, recorded a two-volume oral history in 1969. He describes a legendary career in soil, forest, and water conservation and reclamation in China, Israel, Africa, Europe, and the United States. Berkeley soil scientist, **Hans Jenny**, professor from 1936 to 1967, discusses pioneering research in his field, the pygmy forest in Mendocino County, the aesthetics of soil, and a lifelong commitment to soil conservation in his 1989 oral history memoir.

PARK PRESERVATION AND ENVIRONMENTAL ACTIVISM

University alumni have had a prominent role in preserving wild and scenic areas for national and state parks since the early years of the twentieth century. In a 1972 two-volume oral history conducted over the course of ten years, ROHO documented the life and work of **Newton B. Drury** ('12), director of the National Park Service, 1940-1951, and chief of California's Division of Beaches and Parks, 1951-1959. Drury was a founder of the Save-the-Redwoods League in 1919 and a leader of the league until his death in 1978. In addition to his biographical oral history, he also took part in an interview with his Berkeley classmate, Horace Albright (see above, in Mining) on conservation organizations and national park issues, and with *Oakland Tribune* publisher and California congressman, **Joseph R. Knowland**, on Knowland's twenty years as chair of the State Parks Commission.

Berkeley professor of paleobotany, **Ralph Works Chaney**, discusses in his 1959 interview his quest to discover the site of the dawn redwood in China (see Reviews in this issue), as well as his role in founding the Save-the-Redwoods League and his service on the National Parks Advisory Board. **William Penn Mott, Jr.**, received his masters in landscape architecture at Berkeley in 1933 and became a park professional par excellence, serving as director of the city of Oakland parks, the East Bay Regional Parks District, the California state parks, and the National Park Service. His recollections of managing the state park system from 1967 to 1974, are recorded as part of ROHO's major series on the Ronald Reagan gubernatorial era. An interview with Mott in the collection of reminiscences of **Robert Gordon Sproul** recalls President Sproul on the East Bay Regional Parks District board while Mott was general manager of the district.

One of ROHO's largest ongoing series encompasses the more than ninety oral histories documenting a century of the history of the Sierra Club, whose University of California ties are documented elsewhere in this issue. The "cultural history project"—ROHO's original name—conducted an interview with **William E. Colby** in 1953 as one of its first projects. Colby, a prominent mining lawyer and graduate of the class of 1898, recalls assisting John Muir in early conservation battles and leading the Sierra Club's summer High Trips in the Sierra from 1901 to 1936. He discusses his service as club secretary for forty-six years when it was still a small, California-based outings and conservation group with a few thousand members and no paid staff. Twenty years after the Colby oral history, the Sierra Club Oral History Series began to interview other early Sierra Club leaders and high trippers, many of whom had University of California ties. These include C. **Nelson Hackett** ('12), recalling hiking with John Muir, and two remarkable women mountaineers: **Marjory Bridge Farquhar** ('25), who describes her pioneering rock climbing in the Sierra, and **Helen LeConte** ('27), who chronicles outings with her family and photographer Ansel Adams. Other memoirists in the Sierra Club series include brothers **Lewis and Nathan Clark** ('22 and '27), both club presidents, and **Joel Hildebrand**, Berkeley's legendary professor of chem-

istry. Hildebrand's oral history recounts his role in introducing modern European ski techniques to the Sierra in the 1930s (he also coached the Cal ski team and managed the 1936 U.S. Olympic ski team) and in the creation of Kings Canyon National Park during his presidency of the club, 1937-1940.

Joel Hildebrand, 1973.
Photograph by Ray Lage.

The oral histories conducted in the 1970s with a trio of rock climbing club leaders with university ties document the evolution of the Sierra Club and postwar environmentalism. **David Brower**, the club's charismatic first executive director, dropped out of Berkeley in the early thirties to climb peaks in Yosemite and went on to spark the modern environmental movement with his Exhibit Format books and creative full-page advertisements to save the Grand Canyon. **Richard Leonard** (J.D. '32), also a climber and High Trip leader, was one of the most influential volunteer leaders of the Sierra Club's coming-of-age years. **William E. Siri**, scientist from the Donner Laboratory on the Berkeley campus and club president,1964-1966, discusses the dizzying growth of the club in membership and breadth of concerns in the 1960s and records his experiences on the first American expedition to Mount Everest in 1963.

Three oral histories completed in the 1990s with Berkeley alumni document new issues confronting environmental activists and more recent changes in environmental organizations. **David E. Pesonen**, a graduate of the School of Forestry in 1960, led the first citizen's campaign against nuclear power from 1962 to 1964, successfully opposing the Pacific Gas and Electric Company's attempt to build an "Atomic Park" at Bodega Bay, north of San Francisco; in the 1970s he coordinated a state initiative campaign for the Nuclear Safeguards Act. Appointed director of the California State Department of Forestry under Governor Jerry Brown, he modernized fire fighting procedures and inaugurated resource renewal programs. As general manager of the East Bay Regional Parks District, he struggled with conflicts between land preservation and recreational use demands. **Michael L. Fischer** (M.A. '67, City and Regional Planning) has completed two oral histories, one documenting his long career with the California Coastal Commission, and one his tenure as executive director of the Sierra Club, 1987-1992. As the club's top staff member, he supported traditional concerns like the California desert and the Arctic wildlife refuge but also directed attention to environment problems of poor and minority peoples and promoted greater diversity in the club, all the while working to balance multimillion dollar budgets and manage warring factions within the six-hundred thousand member organization. The most recently completed oral history in the Sierra Club series is with Berkeley alumnus **Gary J. Torre** ('41), a tax attorney who has helped make possible the club's environmental work through his long service on the Sierra Club Foundation Board of Trustees. His oral history discusses legal issues, fundraising trends, and institutional relationships that are part and parcel of the work of a major national environmental organization.

UNIVERSITY LANDS

The *Blake House Estate Oral History Project* (1988) documents Blake House in Kensington, since 1967 the official residence for the president of the University of California, and the Blake Garden, a teaching laboratory for Berkeley's landscape architecture department, with interviews with Blake family members, architects and landscape architects, gardeners, staff, and two university presidents.

Thomas D. Church, Landscape Architect (1978) is a collection of thirty-one retrospective interviews on the life and contributions of **Thomas Church**, a prominent landscape architect who designed master plans in the 1960s for the Berkeley and Santa Cruz campus landscapes, as well as hundreds of gardens throughout California.

Two oral histories document the development and management of the Natural Reserve System, university-owned and managed preserves which provide unique natural laboratories for student and faculty research. The oral history of **James B. Kendrick, Jr.**, vice president for the University of California's Division of Agriculture and Natural Resources, discusses management issues in the Natural Reserve System in the 1970s and 1980s. The oral history program at UC Santa Cruz has published an oral history biography, *Kenneth S. Norris, Naturalist, Cetologist & Conservationist, 1924-1998* (Regional History Project, University Library, UC Santa Cruz, 1999). **Kenneth Norris**, a professor of natural history at Santa Cruz, was a founder of the University of California's Natural Reserve System, directed the Environmental Field Program at Santa Cruz, and coauthored the plan for the Natural Areas Reserve on the UC Santa Cruz campus.

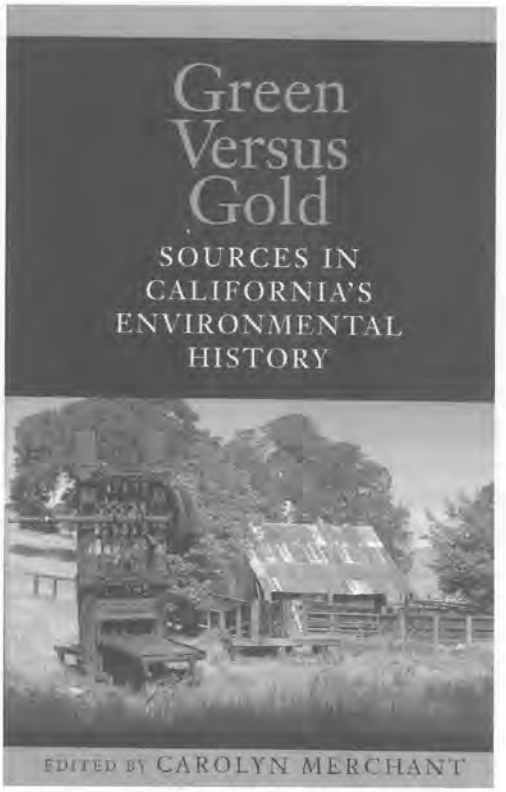
In addition to Berkeley's Regional Oral History Office, there are oral history programs at UCLA and Santa Cruz and limited collections at other University of California campuses. Oral histories are listed on MELVYL, the university library's online catalog.

For information about other topics documented by ROHO or to search ROHO's Catalogues I and II, visit the Website at http://library.berkeley.edu/BANC/ROHO, or call the office at (510) 642-7395.

REVIEWS

Green Versus Gold: Sources in California's Environmental History

Edited by Carolyn Merchant
Washington, DC, Covelo, CA: Island Press, 1998. 489 pp.



This book of excerpts from documents and essays on California invites the reader to participate in the environmental history of the golden state through the words of an impressive array of commentators. The documents reproduce the voices of native peoples and European settlers, explorers, and travelers; gold seekers, lumbermen, ranchers, and farmers; nature writers, novelists, and poets; and environmentalists from park preservationists to bioregionalists to deep ecologists. Essays by environmental historians, geographers, and scientists follow the firsthand accounts in thirteen chapters, each focusing on "particular natural resources or environments as experienced, transformed, admired, and preserved by human users."

The colors of the title characterize the tensions between "an ecologically green dominion in the native American and Hispanic eras" and a "dominion of gold created by the 1848 discovery," as well as the tensions between developers who have exploited the state's rich natural resources and conservationists who have spoken out for environmental protection. Green and gold describe as well, of course, the colors of the California landscape in the long cycles of wet winters and dry summer months.

Carolyn Merchant, the book's editor, is a University of California professor of environmental history, philosophy, and ethics in Berkeley's College of Natural Resources. Her introductory essay provides a valuable overview for the diverse and sometimes too brief selections that follow. In her conclusion on "Environmental Ethics and California's Future," she proposes a "partnership ethic" for California's future, in which "the greatest good for the human and the nonhuman community is to be found in their mutual, living interdependence."

This is a book intended for a wide audience, encompassing students and educators, policymakers and writers, citizen environmentalists and scientists, even the travelling public. To make the collection accessible, selections are abridged, and footnotes are not retained from the original essays. The reader trying to make sense of such a variety of materials may re-

gret that there are no introductions to each chapter to provide historical context for complex and often contentious issues. There is also no attempt to identify the authors (beyond their names and the names of the larger works). However, for the many readers who are drawn into the subject matter by the lively excerpts, excellent bibliographies at end of each chapter suggest further reading for enjoyment and research.

For those interested in University of California history, one subtext in this book might be the important role of university faculty and academic programs in studying and shaping California's environment. The chapter on "The Rise of Environmental Science" opens with Professor Eugene Hilgard's 1890 description of the founding of the Agricultural Experiment Station and includes an essay on Hilgard as the father of soil science. One essay traces the roots of the concept of integrated pest management to the university's first scientifically trained entomologist, Charles Woodworth, hired at Berkeley in the late nineteenth century; later colleagues at Berkeley and Riverside continued the critical stance toward insecticides and evolved modes of biological and integrated pest control by the 1960s. Another selection describes the role of Berkeley forestry professor Emanuel Fritz in the development of state forestry policy.

Also represented here, among many other university-connected authors, are Berkeley wildlife biologist A. Starker Leopold on preserving California's wildlife, Santa Cruz professor Raymond Dasmann advocating bioregionalism, Davis historian Michael L. Smith on "California Scientists and the Environment," and Santa Barbara historian Roderick Nash on "Muir Woods and Hetch Hetchy Valley." Berkeley anthropologist Robert Heizer writes of the world views of California native peoples, and Berkeley faculty wives Sylvia McLaughlin, Catherine Kerr, and Esther Gulick give their account of the campaign to save San Francisco Bay in the early 1960s.

Beyond the university, the selections give voice to Californians as diverse as Sarah Royce, a young pioneer wife and mother crossing the Sierra on horseback in 1849; Kate Luckie, a Wintu tribeswoman describing the native Californian land ethic in 1925; David Pesonen, an anti-nuclear citizen activist recounting a 1962 visit to Bodega Bay, proposed site of an "atomic park" at the edge of the San Andreas Fault; and Judi Bari, radical spokeswoman for saving California's ancient redwood forests (1994). This is a fine introduction to the broad and engrossing subject of environmental history in the golden state.

—*Ann Lage*

Discovered Alive: The Story of the Chinese Redwood

William Gittlen
Berkeley, CA: Pierside Publications, 1998. 166 pp.

In 1948, Dr. Ralph Chaney received packets of dawn redwood seeds in the mail from a Chinese professor. The *metasequoia glyptostroboides*, or dawn redwood, a deciduous cousin of the California giant sequoia and coastal redwood, was long believed to be extinct; the discovery of the tree in the Szechuan and Hupeh provinces in Central China was akin to "finding a dinosaur alive." Receiving news of the discovery, Dr. Chaney, a UC Berkeley professor of paleobotany, and Dr. Milton Silverman, a *San Francisco Chronicle* reporter, set out on an expedition to the isolated valleys of China in search of the rare redwood. The seeds Chaney collected and brought back to California thrived in the mild coastal climate with summer precipitation in the form of fog and grew into the few specimens of majestic trees that can be found around Berkeley and the greater Bay Area today.

These trees provided the inspiration for *Discovered Alive: The Story of the Chinese Redwood*, which documents Berkeley physician William Gittlen's expedition to China fifty years after Chaney and Silverman's. Gittlen's journey began in the Bay Area, where he became interested in the dawn redwood and researched its history and discovery. As Gittlen retraces Chaney and Silverman's trek as closely as possible, he weaves the story of their trip into the saga of his own, comparing and contrasting the two journeys.

Gittlen is conscious throughout of how his experience differs from that of Chaney and Silverman's; although he and his companions experience their fair share of inconveniences and mishaps, his journey is less dramatic than the 1948 expedition. Gittlen's Chinese driver and guide maneuver their four-wheel drive jeep through the fields of mud that slow their journey through the countryside. By contrast, Chaney and Silverman "sloshed through the mud, slid down precipitous slopes, and crossed one rain-drenched, mist-covered bridge after another," with an armed guard of eight Chinese men to protect them from bandits. Chaney persevered even when his ferocious asthma attacks caused Silverman to suggest turning back. At this, one of their companions asked, "If the professor first sees the forest, and then dies, will he not die with great happiness?" Silverman acquiesced and the journey went on.

The heart of *Discovered Alive* lies in Gittlen's simple and straightforward descriptions of 1998 China. He contrasts the enormous, maniacally busy, and smog-filled cities with the "national-park caliber scenery" of the mountains of interior China, where the inhabitants are subsistence farmers of corn, rice, tobacco, cabbage, and fruits. The book reads like a personal travel journal of Gittlen's trip. He relates conversations with his Chinese companions, the details of the large Chinese feasts he is treated to, and he even reprints a copy of the speech he was asked to give on emergency medicine at a hospital. He includes fuzzy black and white photographs, from his own trip and Chaney's, an expense report from Chaney's trip, and a picture from the *San Francisco Chronicle* article by Silverman.

Despite its sometimes amateur quality, *Discovered Alive* gives voice to a story that may otherwise have gone largely unknown by the general public. Although the trees that Chaney planted by his Berkeley home have all been cut down, the dawn redwood continues its legacy in Berkeley on the campus (near McCone Hall), on the Clark Kerr Campus, in the Botanical Garden, in Live Oak Park, and in other locations in the greater Bay Area.

—*Jessica Lage*

Ecological Design

Sim Van der Ryn and Stuart Cowan
Washington, DC, Covelo, CA: Island Press, 1996. 201 pp.

"How does the water you drink reach your kitchen sink? How many days until the moon is full? What soil series are you standing on? From what direction do winter storms generally come in your region?" These questions challenge our awareness of the world we live in, yet many of us never bother to ask them, nor would we likely know the answers if we were asked. They are questions that UC Berkeley professor emeritus Sim Van der Ryn has put to his architecture students. What do they have to do with architecture? you may wonder; Sim Van der Ryn and Stuart Cowan's book *Ecological Design* makes very clear the connection between the natural environment and the one we construct.

Design, for the purposes of *Ecological Design*, is defined as "the intentional shaping of matter, energy, and processes to meet a perceived need or desire." According to Van der Ryn and Cowan, the environmental crisis we are facing today is a result of "dumb design," the

dominant methods that have created a wasteful, polluted, and extravagant society. The practice of ecological design addresses our present environmental crisis by taking into account the health of human communities and of ecosystems; it is a "form of engagement and partnership with nature" seeking to avoid further damage and to find a balance between human communities and other living communities.

Sim Van der Ryn has been involved in the ecological design movement for over thirty years; he is president, chief designer, and founder of the Ecological Design Institute (formerly the Farallones Institute), and professor emeritus of architecture at Berkeley, where he has taught since 1961. Coauthor Stuart Cowan met Van der Ryn as his student in a 1992 seminar and is now a freelance ecological designer and writer in the Bay Area. Together, Van der Ryn and Cowan have written an inspiring book exploring the philosophies and strategies of ecological design with a host of concrete illustrations of their concepts.

After introducing us to the basics of ecological design and the "geometry" of nature, Van der Ryn and Cowan define five principles of the ecological design process, and in a separate chapter for each one, they explain and give an array of examples of these building blocks of their craft. The first principle is that ecological design is grounded in an intimate knowledge of place. Designs by Van der Ryn and Associates, such as the Bateson Building in Sacramento and a model for the unbuilt Ojai School, demonstrate how a building responds to the weather conditions, local resources, soil, and plants unique to each site. "Ecological accounting," the second principle, aims to minimize ecological damage by incorporating the environmental impact of goods and services into their costs, thus encouraging the use of products that are beneficial to the environment.

"Design with nature" is the third principle, and warrants the longest and most intriguing discussion, "for the design possibilities opened up by a collaboration with nature are as unlimited as those employed by the living world itself." The authors explore solutions that people and organizations worldwide have developed to retain the balance between nature and culture. One of the most creative examples is a film studio in China which employs the root system of the water hyacinth as a filter for silver; the roots cleanse the wastewater and recycle the silver for reuse.

In the fourth principle, "everyone is a designer," the authors show that ecological design is a participatory process and that traditionally insular design professions should be expanded to encompass a community of designers. As an example, they describe an ethnically diverse group of children at a school in the Bronx who took part in a meadow and wetland restoration project; the students learned about biology, ecology, leadership and communication, and used horticultural knowledge from their native cultures. The Real Goods headquarters (Hopland, California), another of Van der Ryn and Associates' designs, demonstrates the fifth principle, "make nature visible." The building is intimately tied to the ecological qualities of its site and is designed to make people aware of nature, such as the movement of the sun and the area's native vegetation.

An annotated bibliography includes works by Wendell Berry, Gary Snyder, Aldo Leopold, Malcolm Margolin, and Gregory Bateson. Van der Ryn and Cowan have also provided an extensive resource guide with current contact information for projects and organizations related to ecological design. The guide includes the Arcata Marsh and Wildlife Sanctuary, a wetlands park with over 220 recorded bird species, which also serves as the final step in the town's sewage treatment process; the Brazilian city of Curitaba, a world leader in recycling, public transit, ecological restoration, and green industry; and a project of the California Natural Resources Foundation working to restore Wildcat and San Pablo Creeks in North Richmond.

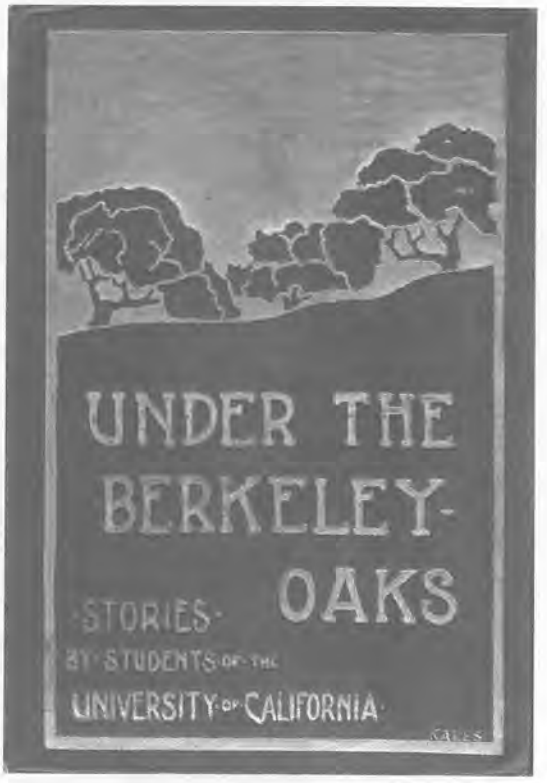
Van der Ryn's and Cowan's straightforward prose and interesting details are thoroughly enjoyable to read. *Ecological Design* is a book that informs and inspires the reader.

—*Jessica Lage*

Under the Berkeley Oaks: Stories by Students of the University of California

Selected and Edited by the Editorial Staff of the *University of California Magazine*
San Francisco: A.M. Robertson, 1901. 227 pp.

> *The principal reason that these stories have been gathered together and given to the public is to start the fund wherewith to erect a fountain on the Campus of the University of California to be in harmony with the great Hearst architectural plan. The fountain is to be dedicated by a grateful student body and alumni to Mrs. Phoebe Hearst, in token of their high esteem for her and in recognition of all that her benevolence and personal interest has done for them.*
>
> *Aside from this primary motive, we have been actuated by a desire to show what students have done and are doing along literary lines, independent of their collegiate course. Since this is the first volume of stories ever published in the University, we have a wide field from which to select.*



Thus from the preface to this collection of some ten stories which appeared on Monday, December 10, 1900, in an edition of one thousand copies at $1.00 the copy. Reports in the *Daily Californian* during subsequent months indicate that the volume did sell, and on April 23, 1901, it was announced that a "profit of $122.35 after all expenses paid" was placed in the Berkeley National Bank. The slim volume, its cover gold-stamped with the shape of a California live oak, remains in various and sundry collections. The fountain, designed by the Berkeley sculptor Douglas Tilden, whose "Football Statue" continues to grace the western side of the campus, was never erected.

Who were the contributors to this anthology which was dedicated to "Benjamin Ide Wheeler, President of the University of California, and Amey Webb Wheeler, his wife"? Top of the list was Frank Norris, class of 1894, whose story was titled "Travis Hallett's Half-Back," no doubt playing upon the popularity of American football, only recently begun in a series between Cal and Stanford. By the time this volume appeared, Norris had published his novels *Moran of the Lady Letty*, *McTeague*, and *Blix*, but, undoubtedly loyal Californian that he remained until his untimely death in 1903, he was glad to assist in this worthy project.

Second in placement within the volume was James Hopper, class of 1898, a football player at Cal, as well as the future author of many novels and a founder of the Bohemian colony at Carmel. Five women and three men complete the roster of authors, but of these only Richard Walton Tully, class of 1901, continued to successfully publish work—Tully co-authored with David Belasco the play *Rose of the Rancho* (1906).

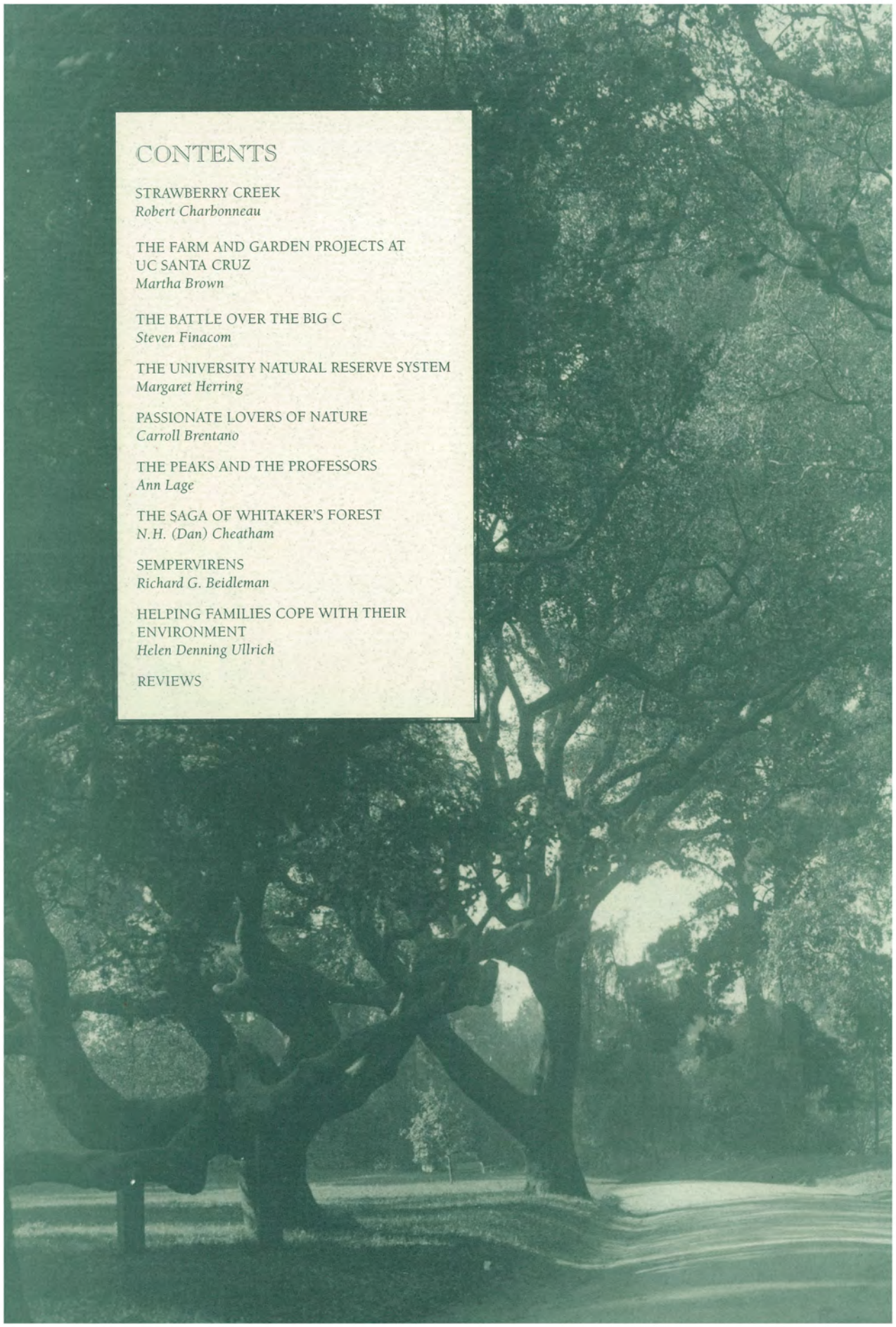
There are colorful echoes of campus life in these stories, such as the opening of Harley M. Leete's "The Confraternity of the Holy Agony":

> On North Hall steps the Sophomores were roaring out their old-time war-song to the ominous accompaniment of clattering canes and significant wagging of their mortarboard headgear. Groups of Freshmen were scurrying across the campus, in threes and fours, to some rendezvous in the park beyond. "Rush" was in the air. Tonight the University of California would witness the annual struggle between Sophomore and Freshman.

Old North Hall, razed in 1917, occupied the present site of The Bancroft Library, where *Chronicle*'s editorial board holds its meetings. We look out the east-facing windows, over a century's conglomerate of buildings to the hills, covered with oaks, just as they were in 1900.

—J.R.K. Kantor

North Hall and Botanical Garden on the Berkeley Campus, 1905. *University Archives (UARC PIC 6:58).*



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