A HISTORY OF THE UNIVERSITY ARBORETUM AT THE UNIVERSITY OF CALIFORNA, DAVIS

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Introduction

The first thing most visitors admire about the campus of the University of California at Davis, the only UC school in the Great Central Valley at present, is the trees. Of course, a number of large old trees - oak, eucalyphts, pine and redwood among them -- is not uncommon on college campuses. But the trees of Davis are especially striking in the context of the broad flat Central Valley, where marure trees are sparse outside of towns and cultivated fields can extend more than fifty miles from west to east, between the Coast Range and the Sierra Nevada foothills, and about four hundred miles from Redding in the north to just south of Bakersfield.

The two-mile-long profile of the University Arborehtm itself, parallel to Interstate 80, is a common first impression of Davis. Many visitors reach Davis via I-80, on the 75-mile drive northeast from San Francisco, across the San Francisco Bay, past San Pablo Bay, across the Straits of Carquinez at Vallejo, and through the grassy hills of the Coast Range into the Valley. Under the broad hazy sky of the Sacramento Valley, the freeway is bordered with fields and orchards and hand-written signs for fruit, vegetable and nut stands, and billboards for shopping centers and new subdivisions and for Reno casinos. After the long drive, the trees at UC Davis promise shade in the hot, dry Mediterranean summers and almost lush greenery in the rainy, foggy winters.

The Arborerum, which occupies 125 acres (95 developed)1 along a two-mile stretch of a former channel of Putah Creek, has long been touted by srudents, faculty, staff, administration and townspeople as the favorite narural fearure and recreation site on campus. However, since its founding in 1936, the Arborerum received more lip service than adequate financial support from the University, including the official elimination of its budget for the fiscal year 1971-72. For many years, the Arborehtm relied heavily on volunteers and private donations, especially through the Friends of the Davis Arborerum, for basic maintenance and development.

Since Mexican and American settlement of the Davis area, the stretch of creek channel now occupied by the Arborerum has been, variously, an occasional home to native Americans, an established stop on the difficult route of mail and pioneers across the Central Valley to San Francisco, a home to Chinese laborers, a setting for town picnics, and an unofficial dump. The history of the Arborerum tells the story of how difficult it can be to set aside and maintain green space for the free enjoyment of all, amid the rapid development of a university community, and, at the same time, how important small parks, gardens and arboreta are to many people, especially in California.

The Arborerum's collections, developed over seven decades, also tell a story of familiar but remarkable changes in thinking about the environment, particularly in the relative value of native versus exotic plants in landscape horticulrure. While maintaining more conventional taxonomic collections, the Arborerum has long favored California native plants, and in the Central Valley, the Arborehtm has led the way in encouraging efforts to preserve and reestablish native plants that are suited to regional climates and play significant roles in native ecosystems. As Joann Larkey wrote in a column for *The Davis Enterprise* in 1971, six days before the Arborerum lost its budget for a year,

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1 According to Paul Graham, landscape manager of the Arboretum.

> Today, not only' the remaining vestiges of the native environment, but the extensive and unique plant collections in the Davis Arboretum face an uncertain future... Californians, in general, are only beginning to be aware of the varied attributes of drought-resistant native plants previously appreciated only by the native Indian populations and by a few knowledgeable botanists and "native plant buffs."2

The Arboretum has had a significant role in changing this perception of native plants.

Arboretum superintendent Warren Roberts broadly defines an arboretum as "a collection of trees and other woody plants for education, research, enjoyment and conservation." The role of the Arboretum itself has changed; T. Elliot Weier, a Davis botany professor among those involved earliest in the Arboretum, defined it as "a collection of exotic plants in a park-like setting... plants you can't go down to the lumber yard and buy... and if you put them in a park-like setting, it means that you're trying to teach people."J

Today the Arboretum is known all over the world by other botanical gardens and arboreta, and it is certainly unique in the Central Valley. It participates in the international seed exchange and boasts the world's finest collection of oaks as well as the largest documented collection of native California plants in the interior of the state. There is also evidence that the Arboretum's fortunes are improving with the University. In an update to the UC Davis Long Range Development Plan in 1989, the University proposed a "Campus as Arboretum" theme to visually unify a campus composed of buildings that do not follow any particular architectural style. And in 1998, after a national search, the Arboretum hired its first full-time director, Kathleen Socolofsky, whose-energetic leadership has made the deeply committed Arboretum staff more hopeful about the future. In August of 1999, the University agreed to add $60,000 to the Arboretum's operating budget, and to pay the salaries of three full-time employees whose wages, in whole or in part, have relied for more than 15 years on grants or funds from the Friends of the Davis Arboretum.[4]

This history, researched and written at the request of David Robertson, professor of English and Ecology at UC Davis, with funding from the John Muir Institute for the Environment and the Putah Cache Bioregion Project, provides a sketch of the human, ecological, horticultural and political history of the Arboretum. It begins with a brief glance at the complicated history of the Davis area before the founding of the University, and ends with the Arboretum's plans for the future and descriptions of the Arboretum's botanical collections. Throughout this project, present and former members of the Arboretum staff, the Friends of the Davis Arboretum, and other members of the UC Davis community have been extremely helpful and informative.

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2 Joann Leach Larkey. "Portraits of the Past." *The Davis Enterprise,* June 24, 1971: pp. 10. Provided by Larkey.

3 A history of the University Arboretum, Davis Campus, University of California, T. Elliot Weier, pp. 1. These notes to a slide show Weier gave at an undesignated time, with a transcript of his comments attached, is available in the book of archival photographs and slides in the Arboretum library.

4 According to Kathleen Socolofsky, director of the Arboretum.

Pre-Columbian Ecology of the Arboretum Site

. v n as recently as 150 years ago, thick woods along the streams and rivers of Califo a s Central Valley were common. It is hard to overstate how utterly European expansion transformed the landscape of the Valley, first for the raising of cattle in the Mexican era and then for the large-scale cultivation of fruits, vegetables and nuts.

Dense riparian forests once bordered watercourses throughout the Valley, especially where natural levees developed, for example within the present Arboretum site. With canopies of Fremont cottonwood, California sycamore, and California black walnut, and several layers of dense understories of poison oak, willows, box elder, Mexican elder berry, Oregon ash, California wild grape, California pipe vine and other plants, the riparian forest ecosystem was rich in number and variety of both plant and animal species. Further from streams, on higher banks and natural levees, valley oaks dominated the forest.[5] "Beyond the woodlands were swamps covering an estimated 125,000 to 500,000 acres of the Sacramento Valley, with vast spreads of tule [rushes], cattail and other aquatic plants."6

According to a local history, "major waterways of the Great Valley originally had bordering woodlands two to five miles wide" and "as late as 1865, a U.S. Survey map showed large areas of 'impenetrable thickets' and 'dense growth of small willows'" along Putah Creek.7 Putah Creek itself once supported an estimated 22,000 acres of riparian forest, from its headwaters at the summit of Mt. Cobb through the present Arboreturn Waterway and out to Putah Creek Sinks (now in the Yolo Bypass).[8]

In this part of California, where seasonal drought severely limits the survival of many animals, twenty-five percent of the native land mammals of California were restricted to or largely dependent on riparian forests. The riparian forest was also home to eighty-three percent of the amphibian species of California, and forty percent of its reptiles.[9]

Animals that depended on the riparian forest to some degree included white footed mice, woodrats, cottontails, pocket gophers, gray squirrels, racoons, mink, otters, weasels, coyotes, gray foxes, bobcats, pumas, tule elk, mule deer, black bears and the fearsome California grizzly bear, now extinct. Birds such as valley quail, woodpeckers, hawks and owls lived alongside waterbirds, some of which lived here year round - grebes, herons, shorebirds, egrets and wood ducks - while other ducks, geese, swans, and more shorebirds, some from as far as the Arctic, came here to winter. In the waters lived salmon, steelhead trout, sturgeon and other fish, and mud turtles and garter snakes.[10]

In the Putah Creek watershed no truly intact examples of riparian forest exist. Though there are restoration efforts underway at UC Davis and elsewhere, only an estimated two percent of this native forest still exists in even fragmentary form in California, where farms and subdivisions occupy what was formerly woodland.[11]

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s According to a brief paper, "Natural and Cultural History of the Arboretum Site," developed by Mary Burke, curator of the Arboretum.

6 Joann Leach Larkey. Davisville '68: The History and Heritage of The City of Davis. Yolo County. California. Davis, California: Davis Historical and Landmarks Commission, 1969: pp. 8.

7 Davisville '68: pp. 31.

s "Natural and Cultural History of the Arboretum Site," Burke.

9 Ibid.

10 Davisville '68, pg. 8-10.

11 "Natural and Cultural History of the Arboretum Site," Burke.

Many, if not most, of the original woodland trees in the Sacramento Valley were harvested to fuel Sacramento River steamships, which began to operate around the time of the Gold Rush in 1849, and later locomotives.12

Remnants of the pre-Columbian ecosystem survive along the Arboretum Waterway (a former channel of Putah Creek now dammed at both ends), though, as Arboretum Superintendent Warren Roberts points out, "the California valley riparian woodland has mostly short-lived trees, except oaks." Some valley oaks *(Quercus lobata)* estimated to be more than 400 years old still stand in the Arboretum, concentrated near California Avenue but also spread out from the east to the west end. Also known as California white oak or roble, this most massive of all American oaks is native only to California, and is characterized by a broad crown and lobed leaves. Its acorns are edible after a leaching process and were a food source for native Americans in the area. Other trees native to the site include a Fremont cottonwood of some 100 years of age near the Ericaceae Collection, as well as some older Oregon ash, willow, California box elder, California black walnut and elderberry trees. The Arboretum also cultivates other plants native to the site, including virgin's bower or pipestems, saltgrass, horsetail, rushes, sedges, creeping wild rye, Davis golden lupine (now extinct in the wild), alkali mallow, big mistletoe, tule, snowberry, broad-leaved cattail, California wild rose, poppy, blackberry, wild grape, manroot California pipe vine and other plants.[13]

Individuals in the university community and private citizens have observed the animals, listed in Appendix I, which presently inhabit the Arboretum seasonally and year round.

Native American Habitation of the Arboretum Site: the Wintun

Human beings have occupied the Central Valley for at least 28,000 and perhaps as long as 48,000 years. Native Americans may have lived periodically on the site of the Davis campus as early as 4,000 years ago, but the Spanish missions of the early nineteenth century provide the first written records of the native people of the region. These people, historically referred to as the Patwin, called themselves the Wintun.
Speaking a branch of the Penutian language family, the Wintun controlled a 90-rnile stretch of land extending from Suisun Bay to Princeton on the west side of the Sacramento River, and as far west as Long Valley-San Pablo Bay.[14]

Within the Arboretum grounds are traces of an important east-west transportation route used by native Americans, where a high natural levee remained dry most of the year. Marked with wild valley oaks, some more than 350 years old that were probably planted by scrub jays, this high terrace still persists. For centuries travelers in the north Central Valley have gladly sighted and headed for the trees in present-day Davis, though Wintun settlements on the prairie were few and seasonal because of the threat of floods in winter and drought in summer. Within the Arboretum grounds, a natural ford of the north fork of Putah Creek made an attractive temporary settlement site. Both a village and cemetery site have been recorded on campus, in the general vicinity of the old A Street Bridge, with houses m a d e o f tules. Politically organized into a primary village with several satellite villages nearby, settlements consisted of earth-covered and subterranean struchlres. Cooking tools and household

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12 Davisville '68: pp. 8.
13 "Natural and Cultural History of the Arboretum Site," Burke.
14 Ibid.

baskets were made fr m willow, rushes and grasses. Fish, waterfowl, deer, elk and antelope were all important foods for the Wintun.is

Today there is an 800-foot archeological buffer zone on either side of the creek on camp':s including the grounds of the Arboretum, and a prohibition on some kinds of construction there, because of archeological value of artifacts and human remains in the ground.16

1806 - 1849: Spanish Explorers and French Canadian Trappers Appear in the Sacramento Valley; the Wintun Perish; Mexican Land Grants Are Issued along Putah Creek; and the Gold Rush and Agricultural Prospects Bring More Americans to the **Valley**

The Wintun persisted in the area until the 1830s, when malaria, perhaps brought by hunters and trappers from Canada, decimated the native populations. Others were moved to mission settlements for labor, and the discovery of gold in 1849 precipitated further genocide and disease. In 1883, a great malaria epidemic "swept through the Sacramento Valley and killed an estimated seventy-five percent of the Wintun population."[17] Spanish and Mexican rancheros succeeded the Wintun as the dominant inhabitants of present-day Davis along Putah Creek. "From the first recorded Spanish expedition into the Davis area in 1806, until the large influx of the mining population in 1849, the Spanish rancheros were the dominant influence on regional land patterns and settlements."[18]

Putah Creek itself has gone through several different names and spellings. The meaning of the name of Putah Creek is disputed. According to Mary Norton, a Wintun descendant, it comes from a word puh-ta, meaning dusty place, and refers to the settlement site, Puta-toi, now beneath a reservoir, Lake Berryessa.[19] William Wolfskill, an early American settler, called it Rio de los Putos, for the natives he was told lived there.[20]

Some of the first American settlers of the Sacramento Valley, following accounts of trappers, came with the Bartleson-Bidwell Party from Sapling Grove, Missouri in 1841. Among these was Colonel Joseph B. Chiles, who received a Mexican land grant in Napa County in 1844 and in 1850 bought land on the north side of Putah Creek and on the west bank of the Sacramento River. Another major settlement group came with the Rowland-Workman Party in 1841, which was organized by William Workman and John Rowland in New Mexico, where the American traders had married Mexican women. William Gordon, who also came with the Rowland-Workman Party, and another American who became a Mexican citizen by marriage, also became the first resident of Yolo County when he settled northwest of Woodland on the Quesesosi Grant.[21]

Two men from the Santa Fe area, Juan Manuel Vaca (Baca) (his mother's name?), a widower with eight children, and Juan Felipe Pena (Armijo), with his wife Isabela and six children, also left New Mexico with the Rowland-Workman Party, and, by prior

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15 Jbid.

16 According to Warren Roberts, superintendent of the Arboretum.

11 Environmental Impact Report, 1994-2005 UC Davis Long Range Development Plan.

18 Jbid.

19 According to Roberts.

20 Davisville '68: pp. 4.

21 Davisville '68: pp. 13-14.

arrangement with General Marian_0 V 11 • C
f mill . a eJ o omandante of the Sonoma District, these
a . es receiveda land grant of 42,000 acres south of Putah Creek in 1842. Other
M x can land ants along Putah Creek were awarded between 1842 and 1846 to
William wo lfskill Mareos Va ca V t p d, (P
. . ' , ic or ru on rudhomme), and Jo' se de Je' sus and
S to Antoruo Berryessa. (In 1934, Frances Wilson, daughter of John Wolfskill, left in her will 107 acres of orchards on the Wolfskill land to UC Davis.)22

1850 -1905: California Becomes the 31st State in the Union· American Farms Replace exican Ra ches. in Yo_I County; the Pony Express Trots ;hrough the Arboretum Site; the California Pacific Railroad Is Laid and Davis(ville) Is Founded

. ' When Ca o a became a state [on September 9,] 1850, Yolo County was one of the ongmal counties. The county's name "is a derivation of a Native American word 'yoloy,' meaning a land abundant in rushes or tules."23

Although Davisville, later shortened to Davis, was not founded until 1868, farms and other ventures were developed earlier on the land presently occupied by the UC Davis campus. In about 1850, Colonel Chiles relinquished his lands to his two sons-in law, **Jerome C. Davis** and Gabriel Brown. Davis paid $4,000 for the land, "with all stock and improvements thereon," and established a successful farm, whose land would be purchased by the state in 1905 to establish the University Farm. Early on there was evidence that this area was a good site for agriculture; in 1858 Davis won the award for best farm from the state agricultural society.2[4]

After California statehood, which occurred two and a half years after the end of the Mexican-American war, all claims to Spanish and Mexican land grants had to be confirmed by the U.S. Land Commission, which reviewed some 813 private claims granted between 1833 and 1846. Notwithstanding numerous appeals to higher courts, only 521 of these grants were finally confirmed. Even before this, owners of Mexican land grants along Putah Creek, whose boundaries were measured by old valley oaks that still stand (say which, with reference, see Larkey) in the Arboretum, were beset by squatters. Jerome Davis made at least one trip east to appeal to the U.S. Senate for his own holdings and those of other landowners in the area.[25]

Miners and farmers brought increased traffic across the Sacramento Valley to San Francisco, and the new Californians followed the same practical routes that native Americans had, along the old main channel of Putah Creek and through the Arboretum site. Travel, transport and communication were still difficult due to winter flooding in the Sacramento Valley. The Old Benicia Road, which runs through much of the south side of the Arboretum and is still marked in places by the remains of a post and wire fence, was the main wagon road between Sacramento and Benicia, and one of the few passable routes west in pioneer days because its higher ground escaped the winter floods. Where the Old Davis Road bridge is, there was a ferry in the winter. This first bridge over the creek was constructed in the 1860s.[26]

Along Old Benicia Road, Solano House was built within the present Arboretum grounds sometime after 1855. Solano House served several purposes at once -- it was a

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22 Davisville '68: pp. 14-15.
231994-2005 UC Davis Long Range Development Plan.
2[4] Davisville '68: pp. 22, 28.
25 Davisville '68: pp. 18.
26 According to Roberts.

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Wedlls Farg o age coach ouse, a livery stable, a general store, a saloona blacksmith ,
an sometimes a post office until 1868.27 p .
Old Benicia Road was a l o th
. s e way ony Express r iders took from then
Washin gt on, now West Sacramento, to Silveyville and t B · · M nn· d
0a k l ,d e b tw een p il 23, 1860 and September 8, 1861. The Pony Express route, which
beganm St. Joseph, M souri, g:nerally went to San Francisco by way of a steamship from Sacramento, but if the mail missed the boat, which it did about 25 times, the o:erland route in the wet ':inters traveled through Davis on the higher ground of the higher natural levee, stoppmg at an official Pony Express Station in Solano House.2s

The former site of Solano House, near the present Armstrong Walnut Grove, is marked by a few large old wild valley oaks and by two old planted trees, a C::hinaberry that grew from the stump of the original tree, and an olive, which were probably planted on the Robert Armstrong homestead.29 A monument to the Pony Express station was dedicated near the site of Solano House in the Arboretum on April 23, 1999. Sponsors included the UC Davis Cal Aggie Alumni, the Yolo County Historical Society, and Friends of the Davis Arboretum.

In 1867 Isaac Davis, father of Jerome, sold a portion of the Davis farm lands to the California Pacific Railroad, which completed the Railroad Depot in 1868, when Davisville was founded at the junction.Jo

Another man who farmed within the present boundaries of the Arboretum and the UC Davis campus was **George G. Briggs,** a native of New York. Briggs was an extremely energetic entrepreneur and farmer who recognized the potential of the Central Valley for agriculture to sustain a rapidly growing population. In a paper for the State Agriculture Society in 1887, he wrote:

> When I arrived in California I saw at once that there were other means of accumulating gold besides digging it from the mines; that the miners and all other classes w uld n_eed turnips and cabbage and products of the soil; that even then many were suffering with the scurvy and other diseases for want of fresh vegetable food [.....]
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> And now let me say, I believe in California as a fruit-growing and raisin producing country. We have the climate and soil in many localities to make the best fruit-growing and raisin-making country in the world.[31]

Briggs planted his orchards and vineyards in 1875 on the sou bank of ti:ie north for of Putah Creek, raising peaches and grapes for raisins, deve lopmg a te que for drying 32
grapes into raisins that was used up un 20 years ago. Bn?gs also built one o the earliest subterranean irrigation systems m the area. It_consISted of a po er-dnven. pump, well and some 200 miles of concrete pipes, which unfortunat:ly f l:d _up 1th silt, the remains of which still lie within the Arboretum grounds. Bnggs s 1IT1gation system included a concrete reservoir, which still stands in the Arboretum near the Pony

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[27] According to Roberts.

[26] According to Roberts.

[29] According to Roberts.

[30] First pubbshe d m Davisville '68 : P P· 4 9. *Te h S mento Daily Record-Uni on,* Jan. 2, 1887: pp. 1 8 p rovi 'd db J y oann e Larkey.

[32] Davisville '68: PP· 61.

Express monument, though it is not in good enough condition to be declared a historical landmark.[33]

The Briggs house was situated near the Forked Oak Station, which marked the northeast corner of Rancho de los Putos, belonging to the Vaca and Pena families.
Cypress and deodar cedar trees that Briggs planted are still growing there today. The oldest well on campus, probably dug in the 1850s for Solano House and the Briggs omeste d, is als near the Pony Express monument. Other remnants of early farms mclude fig and olive trees roughly 150 years old, planted on the Davis farm, now near Sproul and Olson Halls. These trees are the only survivors from two rows of trees, which may lined a road west from the site of the Davis farmhouse.[34]

In the 1870s another pioneer, Robert B. Armstrong, a farmer from New York who owned 320 acres on the south side of Putah Creek, planted California walnuts that are still growing in the Arboretum today. (See Botanical Collections section below, Armstrong Walnut Grove.) He never followed through on his plan to graft English walnuts onto these trees, which is a common practice in orchards because the California variety make good disease-resistant rootstock for the English walnut, a valuable crop.[35]

The walnut grove has hosted picnics for more than one hundred years. A. photograph from 1896, for instance, shows a group of well-dressed people gathered under the walnut trees for the Annual Band Boys' Picnic.[36]

In 1871, with the help of Chinese laborers who had worked on the railroad, farmers (including Armstrong) dug a west-east channel on lower ground, known as the south fork of Putah Creek, which lies south and east of the present University airport. The north fork, which runs through the Arboretum and had been the main channel, had become unstable due to deposition and natural levees, often flooding and ruining crops.[37]

Chinese laborers had a camp near the present-day Sierra Woodland and Acacia grove. In the nineteenth century, Chinese brought into California the tree of heaven *(Alanthus altissima),* which is native to China.and still grows in large numbers at the western end of the Arboretum. The trees have proven to be weedy.[38]

Sometime in the 1870s a Chinese man was allegedly lynched, hung from a valley oak that still stands in the Arboretum, after he was allegedly caught looking in the bedroom window of Mrs. Briggs at the Briggs homestead.[39] As Davisville grew, relations between the Chinese and other settlers continued to be tense and distant, as exemplified by a photograph of six patrons in front of the Yolo Saloon in 1890, w ere a man called" 'China' Joe" stands off to the right, about ten feet away from the white men.[40]

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33 According to Roberts.
34 According to Roberts.
35 According to Roberts.
36 Photograph available in the book of archival phot gr Fhs and shdes m the Arboretum hbrary.
37 "Natural and Cultural History of the Arboretum Site, Burke.
38 According to Roberts.
39 According to Roberts.
40 Davisville '68: PP· 77.

1905 -1935: Th Founding of the University Farm and Plans for an Arboretum Peter Shields, Secretary of the State Agricultural Society at the turn of the cen ,re e ber_ed at the age of 100 that "the College of Agriculture at Davis was con eiv d his rrund on a day in 1899," after he realized that the University of Califo a didnotha 'e much of an agricultural program on any campus at that time.[41]

In Aprjl of 1906, Davis was chosen, from 69 proposed sites, as the site for the University Farm.[42]

Although most of the trees growing on the Davis campus today were planted since the founding of the University Farm, the large wild trees that still grow here along the old channel of Putah Creek, and the Creek itself, were an aesthetic argument for choosing Davis as the site of the University Farm. Citizens of Davisville who successfully courted the State Farm Commission emphasized the tree-lined creek as a unique natural asset in the flat and geographically featureless Central Valley, Joann Larkey said; on May 18, 1905, the selection committee went for a walk along the banks of Putah Creek during a tour of the prospective University Farm.43

From the beginning, faculty and administration made plans to plant more trees along Putah Creek for shade, recreation and research. Although the Arboretum itself was not founded until 1936, as early as 1907, E.M. Major, manager of the University Farm, and UC Berkeley Professor Clark, a landscape designer for the original campus, were making plans to plan forest trees, including redwoods, along the creek.[44] As Larkey concluded in 1971, "the idea of an arboretum is as old as the Davis campus itself,*II*45

In the late 1920s W.L. Howard, director of the University Farm in Davis, and Dean Merrill of the College of Agriculture, proposed that an area along Putah Creek be set aside for an Arboretum. In 1935, it was agreed that the Campus Improvement Fund would provide $200 a year for landscaping the Putah Creek area, and the first trees and shrubs were entered into the earliest accession records. John W. Gregg, a professor in landscape design at Berkeley, drew up planting plans for most of the area along the creek between the Old County Road bridge, just east of 1st and A Streets (Aggie Villa Bridge, no longer used by cars) and the present California Avenue bridge.[46]

At the time that landscaping for the Davis campus in general was being planned, Dean Knowles Ryerson, who was campus dean from 1937 to 1952, "stood up to the boys from Berkeley, pointing out that this was no eastern campus, and that we should emphasize what does well here," remembered Maxine Schrnalenberger, a long-time

41 UC Davis Charter Day Program, April 5, 1962, as cited in Gayle Matteson, A History of the Site of the Davis Arboretum, unpublished, 1997: pp. 88. Available in the Arboretum library. Written by a former administrative assistant of the Arboretum, this history provides some useful information, but more than half of it concerns the early history of California, and the remainder does not offer a continuous narrative about the Arboretum.

42 Davisville '68: 93.

43Interview with Joann Larkey, July 1999.

44 *The Davis Enterprise,* December 28, 1907, provided by Larkey.

45 Joann Leach Larkey. "Portraits of the Past."

461959 University Arboretum Report, compiled by Arboretum Committee consisting of: S.F. Bailey, R.M. Brooks, B. Cram ton, P.H. Cushing, R.D. Danielson, R.W. Harris, C.C. J a yn d J.M. Tucker, chairman. Available m the Arboretum File, 1959-1960, Box 26 of the Chancellors Files, Special Collections, Shields Library, UC Davis. Also available in the Arboretum's files at Arboretum Headquarters.

Arboretum docent.[47] As Ryerson related in an oral history, it was extremely difficult early on to persuade landscapers and the UCR Regents, not to plant poplars and privet hedges on the Davis campus, even though this led to many a "poplar cemetery."[48]

193-6 1942: The Founding of the Arboretum and the First Plantings

On Cal Aggie Labor Day, February 29, 1936, John Stahl of the landscape gardening program led students and faculty in cleaning up and putting in the first plantings between California Avenue and Old County Road bridges. The initial purposes of the Arboretum were to preserve natural features, including the native valley oaks, along the banks of the North Fork of Putah Creek where it ran south of campus, and establish some plantings that would be useful for teaching and research in the plant sciences at UC Davis.[49]

Conservation became a primary concern because the north fork of Putah Creek, along which the Arboretum was established, had been treated like a dump almost as long as there had been a town near it: "Considerable difficulties attended these earliest efforts" to establish the Arboretum, according to the Arboretum Committee's report of 1959, "for much of the old stream channel had been used for years as a dump, and was littered with rubbish, old tires, broken chunks of concrete, etc. Cattails and other water weeds choked the stream channel, creating pools of stagnant water and perpetuating a grave mosquito problem."

The first plantings, many of them California natives, were donated by the Gill Tract Nursery near Berkeley, which was associated with the Civil Conservation Corps (CCC) established in the Works Progress Administration (WPA) under President Franklin D. Roosevelt as part of the Depression recovery effort.

According to Roberts and the Arboretum's accession records, 114 species were planted that day, including Jeffrey and grey pines, incense cedar, tassel bush, native Californian oaks (canyon live oak and coast live oak), juniper, hollyleaf cherry, ironwood, California bay, snowberry, oak gooseberry, redberry, Santa Cruz Island buckwheat, coffeeberry, California fan palm (the only palm native to California), San Fernando barberry, Casuarina, California buckeye, laurel swnac, sugar bush, redbud, Carpentria (native only to the mid-elevations of Fresno County) and toyon (a large shrub, the only California native plant whose name comes from the original language of native Americans, in this case the Chwnash language).

For a year after the first plantings, landscape gardening students and grounds workers watered the young plants with buckets, but later this minimal care was not always provided. The tale of inadequate funding for the Arboretum begins at the beginning; hardly had the first plantings been established when, in 1937 the Campus Improvement Fund discontinued the $200 budget for Putah Creek landscaping.[50] It would be decades before many students, faculty, staff or townspeople would recognize that Davis even had an arboretum.

Several professors, however, worked hard to develop the Arboretum in its early years. T. Elliot **Weier,** a botany professor who would be involved in the Arboretum in

[47] Interview with Maxine Schrnalenberger, September 1999.
[48] Knowles A. Ryerson. The World Is My Campus: Interviews Conducted by Joann L. Larkey. Oral History Program, Shields Library, UC Davis, 1977: pp. 288.
[49] 1959 Arboretum Report.
[50] Ibid.

some capaci until his death in 1991, formed the Arboreh.µn Committee in 1937 to plan for e st e ablis :nt of plant collections for teaching, a research area to be closed to the public, and pro 1s1ons for recreation such as bridle paths and picnic areas, and possibly dams to create small lakes or lagoons."s1

. Le by eier, faculty in the botany department made extensive plantings of nativ Califo a trees and shrubs, including Ceanothus and pines, in 1939 and 1940. Charlie M. Rick, Jr., a plant geneticist known affectionately as Mr. Tomato for his important work in tomato research, was also involved in these plantings, as was W.W. "Doc" Robbins, who had started the botany department at Davis in the early 1920s.s2 These trees came from Forest Service nurseries that had been set up for the CCC camps during the Depression and were closing down, and perhaps in particular from Ed Kotoc's nurseries.[53]

Although chance was involved when so many of the plants were donated, it seems clear that some efforts were made to represent native plant ecoystems of California within the Arboreh.Im from its earliest years, though with perhaps less concern for plants' suitability to the Davis climate than the staff feels today. Some trees and shrubs of the **North Coast Area,** the **California Foothill Section,** the **American Deserts Section** and the **Sierra Woodland Area** date from the 1930s and '40s (see **Botanical Collections** section below). Such geographical groupings, especially of plants native to California if not the Central Valley, were rather progressive in those days, when taxonomic collections of exotic flora were often favored, as Roberts and others have observed.

In 1941 a redwood grove was planted, now the largest cultivated redwood grove in the interior of California, which is outside of its native range. (In 1969 the grove was dedicated to Weier, who supervised the plantings.) As Weier observed, "If we'd known better, we probably wouldn't have put any [redwoods] in. We didn't know any better so we put them all in. It is true quite a number of them couldn't take summers without water, and it wasn't until, I don't know, ten years later before they had summer water. As soon as they did, they did very well."[54] The trees have done very well, and today the Weier Redwood Grove, with its cool damp shady atmosphere, is a popular area in the Arboreh.Im.

John Tucker, who came to Davis in 1947 as a graduate student from Berkeley and would later serve as Arboreh.Im director for many years, remembered visiting Weier on a weekend in the fall of 1941 when he took a group of people to see the Arboretum plantings.

"On Saturday morning he had us trumping up and down the Arboreh.Im. The trees in the little redwood grove were just out of gallon cans, about a foot high," Tucker said. "I've never seen anyone so enthusiastic over a project. He'd taken it on himself, no one had told him to do it, and I guess his enthusiasm was infectious."

In 1941, the campus budgeted $2,000 for the Arboretum, and campus Dean Knowles A. Ryerson formally appointed an Arboretum Committee that included himself and eleven other members·from the departments of pomology, poultry husbandry, irrigation, zoology, plant pathology, landscape gardening, grounds and

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51 Ibid.

52 Interview with John Tucker, August 2000.

53 According to Roberts and John Tucker.

54 Weier's slide show notes, PP·6.

botany and the truck corps. Weier was named chairman, and "was as active as one person could be without funds to do much," remembers Dick Harris, later Arboretum Committee chairman.[56]

As an early champion of the Arboretum and, after his retirement in 1969, the first teacher in the Arboretum's docent program, Weier is remembered by many for his enthusiasm, generosity and leadership. He was born in Harlem, New York, and began teaching in the botany department in Davis in 1936. He was a popular teacher, Tucker remembers, "superb at explaining things clearly."

"He was a genius as a teacher," Maxine Schmalenberger said, an Arboretum docent who was trained by Weier. "He could reduce a complicated subject to layman's terms, and simplify material so that it was useful and understandable, very congenial."

For many years Weier taught the general botany course at Davis, and with other Davis faculty Doc Robbins, Ralph Stocking and later Michael Barbour, co-authored a best-selling general textbook, simply titled *Botany,* which was published by John Wiley & Sons in a number of editions, from 1924 until 1982.[57]

With his own house, Weier set a progressive environmental example. His former home on a double lot on Oak Avenue, built in 1949, is perhaps the oldest solar powered house in Davis, with insulation six inches thick, a solar-powered water heater, no windows on the north or west sides, and no air conditioning or need for it, even in the hottest summer weather.[58]

He was a connoisseur of wines and a devoted photographer, with a darkroom at home. In his home, he held weekly discussion groups for graduate students on assigned reading in recent scientific literature. He was also known to make personal loans to young faculty and graduate students. He and his wife Katrina, a weaver, also hosted frequent outdoor evening gatherings for the botany department in their elaborate garden.[59]

"He had a fantastic garden with everything in it, including dawnredwoods," Schmalenberger said. "And he was a man of taste and discrimination." Every evening, Weier read *The New York Times* with a glass of sherry, Tucker remembered, after a walk around town with his wife and one of a succession of Scottish terriers.

Research on chloroplasts using the electron microscope took Weier's attention away from the Arboretum to some degree in the 1950s and '60s, Tucker said, though he returned to teach Arboretum docents in the 1970s. As environmental horticulture professor Michael Barbour observed, "the early success with the Arboretum was due to Elliot, to his charming personality and enthusiasm. He was upbeat, and he set an example, always doing things on time and gently prodding others to remind them if something needed to be done."

55 1959 Arboretum Report.

56 Interview with Dick Harris, August 2000.

57 According to John Tucker, and interview with Michael Barbour, August 2000. The textbook was discontinued when the publishers decided it was too expensive to publish the full-color edition; another version of the book was published by Wadsworth in 1998, with Tom Rost, Stocking, Barbour and Terry Murphy as authors.

58 Article in *The Daily Enterprise,* no date, perhaps 1970s. Scrapbook of the Arboretum on the Davis campus of the University of California, designed and made by Eleanor Roosevelt, unpublished in 4 volumes, 1974 [and added to since]. Available in the Arboretum library.

59 According to Tucker.

1943 -1950: World War II Closes the Davis Campus and the Arboretum Is Stalled

. Considerable lantings were made in the Arboretum in 1941 and early 1942, but dunng_World War II progress came to a virtual halt," according to the 1959 Arboretum Comrrutte Report. In 1943 instruction was discontinued at Davis when the Army's Western Signal Corps took over the campus and turned it into Camp Kohler, a wartime training school for the Corps. Some cork oaks were planted at that time near what is now Mrak Hall, because of fear that supplies of cork would run out before the end of the war. (Now, almost 60 years later, these trees have matured to a harvestable size.)[60]

Soldiers were trained to float weapons in order to infiltrate behind enemy lines, and they tested explosives in Putah Creek near Stephenson Bridge, outside of the Arboretum. Near the present site of Davis Commons and the Arboretum's UC Davis Home Demonstration Garden at 1st and E Streets and Richards Boulevard, a Victory Garden was planted. Camp Kohler closed on October 31, 1944. In March of 1945 non degree courses resumed, and degree work officially resumed in October.6i

In 1947, when John Tucker came to Davis, there were about 2,000 students, and the ratio of men to women was at least 6:1. Students in those days, Tucker remembered, were farm boys in faded blue jeans, denim jackets, and muddy boots. Soon after Tucker arrived, English professor Celeste Turner Wright, the first female professor at Davis, helped Tucker find a house for himself and his pregnant wife, and Weier lent him money to help purchase the house.

The years between 1945 and 1950 were a Dark Age for the Arboretum, with an inactive Arboretum Committee and virtually no new plantings. Limited funds went ahnost entirely to maintenance, carried out by the grounds department, including weed control and clean-up of fallen trees and other debris.[62]

In the 1940s seasonal rain still flowed rapidly within the Arboretum, until in 1948 the Army Corps of Engineers dammed the north fork of Putah Creek at both ends, which left the South Fork as the only flowing channel. This finished the natural life of the north fork, which farmers had begun to force the creek to abandon in 1871 (see page 9). The water in the dammed north fork became stagnant in the summer, though it continued to accumulate in the winter, and the mosquito and midge populations increased. (In 1952, on Cal Aggie Labor Day, students dredged up dead trees in the creek, but the problems associated with stagnant water have persisted up to the present.)[63]

1950 - 1959: The Arboretum Comes Back to Life

From the start, hardy plants did best in the Arboretum simply because they had to be tough to survive years of neglect and the local climate, with its hot dry summers and wet cool winters. Little money was generally available to hire anyone to look after the first plants in their early years. Weed control was carried out by a part-time grounds worker known now only by his first name, Otto, who was a member of the Farm Division, farm laborers who lived in dorms in the other Temporary Buildings near

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[60] Sue Coggins, "Puta-Toi to the North Fork of Putah Creek," 1969-70: pp. 4. pam hlet. prepared by a UC Davis student abo t the Arboretum and Putah Creek. Available m Special Collections, Shields Library, UC Davis.

[61] Jbid.

[62] 1959 Arboretum Committee Report.

[63] Coggins, PP· 4.

the present Arb?reh.un Headquarters. Otto would set his horse to disking out the old stream terraces m the Arboreh.un in the spring, at the end of the rainy season, to cut down weeds and turn them under.64

. Around this time Doc Robbins, founder of the botany department, was the chairman and sole active member of the Arboretum Committee, Tucker said. Robbins was "an autocratic individual," according to Tucker, who worked under him in the botany department for five years. "Robbins came late in the Weier administration [of the Arboreh.un Committee]. He would make suggestions, and then he was running the show," Tucker said. "Participation dropped off. Robbins *was* the Arboretum Committee. He did wheedle some money from the Administration. He wanted to clean up the place [the Arboretum]." Under Robbins, the two priorities were 1) weed control by Otto's method and 2) removing junk from stream channel -- old furnirure, broken classroom chairs, etc.65

Robbins retired in 1952 and died of cancer that same year, Tucker said. In 1953 the Arboreh.un Committee was reconstituted, with Robert Deering as chairman, who was the one-man department of landscape management, now environmental horticulhlre.[66] Deering appointed Tucker to the Arboretum Committee in 1953. Also on the committee was Beecher Crampton, who had a faculty position in agronomy but was mainly responsible for plant identification in the grass herbarium, Tucker said.

In 1954, the Arboretum received its first grant for an area of research that it would see as increasingly important in its role as a demonstration garden for the Central Valley, when the California Foundation for Horticulrural Research awarded $3,000 to the Arboretum for the study of drought-resistant plants. At this time Lawrence Halprin, an award-winning landscape architect, was hired to draw up plans to link the Arboretum to campus, but there was no money as yet to realize them.[67]

Dick Harris, who served later on the Arboretum Committee, said he thought that the "Campus as Arboretum" idea originated with the Campus Beautification Committee, on which he also served in the 1950s.[68] The Committee had representatives from the sciences and the humanities, and was chaired by Richard Nelson, who was then head of the art department, and hired such outstanding artists as Wayne Thiebaud and Roland Peterson.

"[Nelson] wanted to see rivers of trees, not grids of streets and buildings," Harris remembered. The Committee didn't manage to do much more than talk; "budgets were tight, few new buildings were being built," he said. As od_das it sounds, "the grounds department didn't want us to use native plants that might not do well. They wanted all cast-iron plants that required the same kind of care, or lack of care."[69]

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64 According to the 1959 Arboretum Committee Report, and to Roberts and Tucker.

65 1959 Arboretum Committee Report.

66 Ibid.

67 Ibid.

68 Interview with Dick Harris, August 2000.

69 This may have been linked to the experience of the grounds department "':ith the 1;,1a tenance of lawns. "There's a connection between lawns and the trees you can grow m them, said Michael Barbour. "Only trees that can stand to be heavily watered do well." And in fact, many of the plants in the Arboretum over the years have suffered from overwatering, according to Paul Graham, present landscape manager, because of uniform maintenance and rather primitive irrigation.

In 1955 with Weier as Arboretum Committee chairman, a survey was made of the plantsm the Arboretum, and in 1957, the Arboretum hired its first full-time staff member, **Don K. Sexton,** as Botanic Garden Botanist in the Arboretum though his salary was aid by the grounds department. Sexton developed a schedule of tours, a system of signs and put in gravel paths. The university budget provided $3,500 for Sexton $1,200 for the support of one horse to help him. Plantings began according to Halprin s plan, and Tucker, a professor of botany who would be formally involved with the Arboretum off and on for more than 30 years, became chairman of the Arboretum Committee from 1957 to 1959.70

During this time, the Davis campus, which the Regents upgraded from the University Farm to a general campus of the UC system in 1959, began to slowly expand towards the Arboretum. In the late 5Os, the University considered constructing a high voltage line through the Arboretum across the old Briggs concrete reservoir (see pages 8-9), which would then perhaps be destroyed. Tucker talked to some older Davis residents and collected signatures to stop the project. He remembered that John Rogers, probably the oldest resident of Davis at that time, had said the reservoir was still in use in the teens and early twenties, and used to swim in it on hot summer days as a boy.
Chancellor Emil Mrak agreed to put in the line elsewhere, but asked Tucker to see that plantings were put in around the reservoir to prettify it.

In 1959, administration of the Arboretum budget was switched from botany to the department of landscape management (now environmental horticulture). Dick Harris, a professor in landscape management, served as Arboretum Committee chairman from 1959 until 1961, and after his retirement, occasionally gave lectures to docents.

Harris first came to Davis as a student in 1939, graduating in 1942. After three and a half years in military service, he returned to get a Master's at Davis and a Ph.D. at Cornell University, both in horticulture with a specialty in pomology. In 1950 he came back to Davis as a professor in pomology, switching to landscape management in 1957.

Harris was asked by his department to head the Arboretum Committee, and he took on the task with a sense of duty because he felt the Arboretum "was an important asset to the campus and to this part of the state." During Harris's years as Arboretum Committee chairman, badly needed waterlines and some signs were installed and more plantings were made, especially in the exotic section east of the Old County Road Bridge. More effective weed control was dlso developed.

Until the late '5Os, Harris remembered, "there wasn't much to look at in the Arboretum, and many people who weren't familiar with the campus didn't know it was there, even if they had driven by it or across it. It just looked like a dry, weedy, abandoned streambed, especially in late spring, summer and early fall. It just looked like the rest of Putah Creek, to the east and west. There were no signs, it was just designated as the Arboretum on paper."

"It was the southern boundary of campus, and people didn't venture across it," Harris said. Trying to develop the Arboretum was "discouraging, because there weren't really funds to do much, even though the Administration was sympathetic."

Mary Major, who would help form the Frie d of the Davis Arboretum in 1971, had similar memories of the Arboretum around this time. In 1955, when she came to

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70 Ibid.

Davis with her husb d J ac k h t h b o aug t otany and plant ecology, "most of the Arboretum was flooded, Just a thicket," she said.71

In the 1950s, to make itself more valuable to teaching and research the Arboretum wa s divided into geogr ap hi c an d taxonomi c sect ions, and beg an to develop mo e !axonomic collections, including the **Australian Section,** which includes many vaneties of u alypts, and the **Conifer Grove** (see **Botanical Collections** section below). Due to th diffic ty of obtaining living research materials from a broad sample of geographic_ally d1Stant plants within a taxonomic group, complex genetic, biochemical and ecological studies sometimes had to be conducted on a very limited research sample from e Arbor tum. The Arboretum's taxonomic collections of slowly-maturing but long-lived species were thus invaluable to scientists. As research interest in the Arboretum increased, a long-term goal was instituted to increase the breadth of the collection within certain taxonomic groups, notably oaks, acacias, and eucalypts.72

1959 - 1963: **The Arboretum Makes** Itself **Heard**

On March 2, 1959, when the Arboretum Committee (appointed by Chancellor Mrak, and compris.ed of Harris, S.F. Bailey, R.M. Brook, Beecher Crampton, P.H. Cushing, Robert Danielson, and Cliff Jay, with Tucker as chairman) made the first exhaustive report on the Arboretum, usefully looking back on its history and-including ambitious requests to the Buildings and Campus Development Committee. Danielson, of the landscape architecture department, did a rough plan of the topography of the area, Harris remembers. The report described the Arboretum's physical area of 19 acres, running from the Southern Pacific Railroad bridge at the eastern edge of University property, to the crossing of the County Road and Highway 40, south of the University sewage plant. The Committee formulated four "Objectives and Functions of the Arboretum," which emphasized teaching and research uses:

> 1. To preserve the one unique topographic feature of the Davis Campus -- the old Putah Creek channel - and its natural vegetation.
> 2. To determine the suitability of native California woody plants, as well as exotics from a similar climate, for use as horticultural subjects in the Central Valley, especially under conditions of minimum maintenance. [There is] no other Arboretum in the Central Valley where such a program is being carried out.
> 3. To provide plant material of species not otherwise readily obtainable, for classroom study and research in various departments of the University.
> 4. To provide an area which will combine beauty with instructive value and include facilities for certain types of recreation (e.g., picnic areas).

The aims were familiar, and coherently presented the different interests that would conflict over the Arboretum's role and value in future years: Should the Arboretum try to restore the native ecosystem, as a nature reserve? Should it be primarily a demonstration garden for environmentally viable plants_in the Central :'alley? A resource for teaching and research, cut off from the pubhc? Or a park-like area for public andcampus recreation? At different times: staff and ad:ocates of th Arb?retum would emphasize different uses, often to try to w more funding and cons1dera_tion. from the University administration, while the official home department and designation

71 Interview with Mary Major, August 2000.
n 1959 Arboretum Committee Report.

of e Arboretum also changed accordingly. What finally seemed to work best is the philosophy of the present Arboretum Director Kathleen Socolofsky: "My theory is that the Arboretum is a lot of things to a lot of people."

The 1959 Report also requested the assignment of more land to the Arborehun, alon? the ol P tah Creek channel all the way to the University airport, for preservation and mtegration mto the Arborehun collections. Parts of that land were, in 1959, assigned to Animal Husbandry and Zoology, but the Arborehun Committee argued that

> the greatest ultimate benefit to the Davis Campus as a whole -- for future generations of students, staff members, visitors, and townspeople - will come from development and augmentation of the natural beauty of this area, rather than attempts to utilize the land for other purposes (e.g., feed lots for live stock). The course of development proposed will enhance and augment the natural beauty of the area; current usage -- if not actually detracting from - adds little to its natural charm.
>
> Increases in enrollment on the Davis Campus as well as population increases in this general area will result in a marked increased need for and use of the Arboretum by University classes, student clubs, youth groups... and the interested public... for public displays and lectures, instruction in the use of drought-resistant plant materials in landscaping, and propagation techniques. [These uses will also] necessitate the establishment of picnic areas, headquarters, water pipe for irrigation, and the construction of paths.

The Report was accurate in its projection of future use of the Arborehun, and many of its goals were realized, though much more slowly than the Committee wished. And <!,lthough the Arboretum was not awarded land out to the University Airport, its acreage has increased over the years to the present 125.

The following are some of the detailed requests and plans in the Report, some of which still have not been realized:

> - Improve the Old Putah Creek.Channel... [which] serves as a spillway for waste water from... 1) winter run-off from the campus, 2) storm drainage from the Highway 40 underpass, 3) seepage from irrigation during summer, etc. Trus fact, plus the presence of depressions... results in numerous pools of stagnant water rank with cattails and other aquatic weeds, breeding grounds for mosquitoes.
>
> - Request that area in the creek bed (now held by Animal Husbandry) currently used as horse corrals be re-assigned to the Arboretum. Install pipe and hose bibs. Cost: $10,970.
>
> - Construct path to run the length of the Arboretum., of decomposed granite gravel. Cost: $19,175 To complete [this project, develop the stream bed west of the picnic area as a permanent pond. Cost: $5,000.
>
> - Develop the oak grove across from the sewage plant as a picnic and recreation area. Cost: $10,500.
>
> _ Start development of Central Headquarters Area. Request that one acre of area now occupied by Farm Division buildings nearest the California Avenue bridge be reassigned to Arboretum. Cost: $37,000. Complete development of Central HQ Area. Cost: $33,500.

As it turned out, the Old Putah Creek Channel, or the Arborehun Waterway, was improved in the late 1960s, as part of a face-lift for the south entrance to campus when

the University Admin istrati d ·
. on move into Mrak Hall. Paths extending the length of the
.
Arboretum were also installed t f th f ace-l ift, and the oak grove was developed.
. as par o e
Problems with stagnant water • t h .
persI S, owever, and the horse corrals sti ll abut the Arboretum.
The Arboretum Headquarters is now housed in Temporary Building 32,
:ird: enter of the Arboretum itself, but the staff would still like a larger, better

Altho_ug the Arboretum did not get the funding to realize all of its plans for many years, it did have strong advocates in the University administration. Chancellor Mra sent the 1959 report of the Arboretum Committee to University of California President Kerr on June 28, 1960, with his own recommendations that the Arboretum's plans be realized:

> the old PC Channel winding for almost two miles through the campus presents unusual opportunities for developing a demonstration, teaching and research collection of trees and shrubs suitable for the interior valley, for home ornamentation as well as public landscaping. The area offers also an excellent opportunity for providing a unique recreational area for the use of students and faculty, as well as campus visitors...
>
> The Arboretum program would provide much needed recreational facilities on this rapidly expanding Davis Campus, and at the same time provide an excellent teaching and demonstration facility in which home owners of the entire interior valley could share.

A plan for such improvements was approved by the UC Regents in 1964 (see below).

By 1960, the Arboretum occupied 60 acres with 5,400 individual plants or trees growing, with the redwood grove, native wildflower and exotic areas under development. The Friends of the Arboretum was also established in 1960 under Dean Ryerson, with 27 private individuals and eight organizations as pioneer members.[73] This was the earliest show of organized private support for the Arboretum, on which it would come increasingly to rely. The organization raised about $5,000 in its first year, contributing to the creation of Shields Grove, which was dedicated on April 5, 1962, to honor the founder of the Davis campus the day after his 100th birthday.[74] The oak grove has been developed considerably since, into one of the Arboretum's finest collections. In 1961, Sexton initiated the seed exchange program, but the first seed list, which included many California native plants, was not sent out until 1963.[75]

In 1962, one of the Arboretum's most famous collections was dedicated. The **Peter Shields Oak Grove** was dedicated to the founder of the campus on April 5, 1962 in honor of Shields' 100th birthday the day before. U.S. Chief Justice Earl Warren, Governor Edmund G. Brown, University President Clark Kerr, Chancellor Emil Mrak and Knowles Ryerson all spoke at the dedication.[76] Since then it has been developed by Tucker, a specialist in oak taxonomy, and others into one of finest, and most varied,

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73 Arboretum File, 1959-1960, Box 26, Chancellor's Files.

74 Arboretum File, 1962-63, Box 34, Chancellor's Files.

Is Ibid. Participation in the worldwide mutual seed exchange, which involves about 500 gardens today, Roberts said, is an honorable activi that operate ':"ithout any exchange of money. Seeds are collected and a list is published and mailed, and participants can order seeds from any participating garden.

76 Matteson, 88.

collections of oaks in °the world d 1 covers e even acres near the west end of the an

Arboretum. The oak grove is des 'b d furth · en e er m the **Botanical** Collections section be1ow.

1963 -1965: The Arboretum Hire s p· to· . . . . i rs irector, and a Profess1 0nal Horh cultun st 1 t s

anda New Botanist; the University Looks to the Arboretum for Student Recreation· UC Regents Approve a Plan to Improve the Old Putah Creek Channel in the ' Arboretum

1963, the r?ore Committee made a significant accomplishment in persuadmg the a tration to appoint a director, according to John Tucker. The first was **Rolf Berg,** nativ of Norway who was teaching in the botany department, hired as Arboretum director m September of 1964.[77] (The position of Arboretum director, until 1998, was a 50% appointment of a faculty member, who was to devote half his time to his department and half to the Arboretum, Tucker said. There was no remuneration for the position in addition to the professor's regular salary until 1985.78)

The management of the Arboretum by committee never worked well, Tucker felt. "It's the dumb way the university does things, ineffectively. We [the committee] were outstanding at pinpointing problems, but we had very little money, so we would wring our hands and not accomplish much."

A forceful advocate for the Arboretum, Berg was only director for one year, from September 1964 to September 1965, because the King of Norway asked him to come home to take charge of the national botanical gardens in Oslo.[79] Two other significant employees who would stay with the Arboretum longer than Berg were also hired in the early sixties, botanist **Roman Gankin** and horticulturist **Dick Hildreth.**

Gankin, who replaced Don Sexton in 1963, got his bachelor's and master's degrees in botany at Berkeley and Davis, respectively. At Davis he worked in the botany department with plant ecologist Jack Major, whose wife Mary would be instrumental in rallying support for the Arboretum in the budget crisis of 1971-72. Hildreth, who received his bachelor's and master's degrees in horticulture at Ohio State and had come to Davis to work toward a Ph.D., officially joined the Arboretum staff as superintendent of cultivations in 1964, and had been involved with the Arboretum since 1961.80 With Director **Grady Webster,** who came on in 1966, Gankin and Hildreth would extensively develop the Arboretum's seed and botanical collections until the budget crisis of 1971.

Facing the persistent lack of funding and facilities, Berg and the Arboretum Committee openly discussed and tried to balance competing ideas of the Arboretum's role in the University, including student recreation, research and teaching. Discussion of these competing ideas intensified in the early sixties, before Berg's arrival, as the Arboretum looked for ways to procure and justify more funding for the Arboretum.

In the 1960s, the University administration increasingly emphasized the recreational role of the Arboretum. Lawrence Halprin's planning report for the campus in 1961 had advocated "active and passive recreation on the campus, with the

77 Arboretum Committee File, 1963-1964, Box 38, Chancellor's Files.

78 According to Michael Barbour.

79 Arboretum Committee File, Box 63, Chancellor s Files.

so Arboretum Committee File, 1963-1964, Box 38, Chancellor's Files, and telephone interview with Dick Hildreth, August 2000.

Arbore asthe prime example of the passive style."Bt On the one hand, there was a real pe:ce1ved need for recreation on campus, and casting the Arboretum as a recrea onal program meant student fees could be used to support it. On the other hand, [1] was not clear just what recreational opportunities the Arboretum was expected to provide, and some advocates of the Arboretum feared that recreation would compromise other teaching and research activities.

. In a general letter on October 11, 1963, Dean J.H. Meyer of the College of Agriculture wrote that the Land Assignment and Development Committee had recently dis sed, "very briefly, a request for land by the Arboretum Committee," and a dec1S1on was needed very soon because "the present Arboretum area will probably be taken over soon for student recreation." Recreational use would allow for expansion of the Arboretum, but what such a takeover would mean for the botanical collections was unclear. One possibility for land assignment to the Arboretum was

> land along the creek south of the future Primate Center... Development of the Arboretum in conjunction with Landscape Horticulture has advantages in common use of machinery, labor, management, etc.
>
> It seems that it would be possible that certain aspects of the Arboretum which would simulate wild or natural conditions might be jointly used by those interested in wildlife or at least be contiguous. This latter point might be particularly important because of edge effects on wildlife. Furthermore, I imagine a very pleasing landscaping idea could be formed from the phasing of an Arboretum into a wild area.[82]

Although these ideas sound somewhat like later plans for the Davis Greenway, at the time such speculation must have sounded rather threatening to the Arboretum as a botanical collection.

This attitude toward using the Arboretum for student recreation and enjoyment of nature may have arisen from a trend against funds for research in the state, as well as from a real desire for recreation, since the Arboretum's use for research was another way to argue for funding. As the Arboretum Committee continued to look for more funding for development and maintenance, it sometimes turned its attention to research. But, as Dean Meyer wrote to Drs. Lloyd Ingraham and Dick Harris of the Arboretum Committee on March 10, 1964, research funds were an unlikely source of money for the expansion and maintenance of the Arboretum: "The present attitude of the finance group in Sacramento is that there are too many funds going into research at the University at the present time. Naturally we do not agree with this prernise."[83]

Although the administration could not change the attitude of the state government, it did continue to voice support for the Arboretum, and managed to get funding for the development of certain aspects of the Arboretum when it was construed as an aesthetic and recreational resource. On March 4, 1964, Chancellor Mrak commented to the Arboretum Committee that the Arboretum had the status of a "common-law wife -- never legally blessed," but that now that the Regents had formally approved its budget, it had legal status and the recognition of the Regents, some of whom had been present at the dedication of Shields Grove.[84] In 1964 and 1965, Tucker

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81 Landscape, Arboretum File, to 1967, Box 62, C an ellor's Files.

82 Arboretum File, 1962-1963, Box 34, Chancellor s Files.

83 Arboretum Committee File, 1963-1964, Box 38, Chancellor's Files.

84 Ibid.

had a grant to collect oak acorn fr M . added to the coll ti . .s om exic? all the way to Panama, some of which ec ?ns m Shields Grove. Hildreth and Gankin accompanied Tucker on par[ts] o[f] A[th]ese co[ll] ecting expeditions Gankin sa[id].

- ve rmportant development for the Arboretum occurred on September 15 1964, when m a Campus P1a n n ; . . . . C • . ' • u u , . . g ommi ttee, 1 t was announced that the Regents ha d ap roved the plan to survey and grade the old Putah Creek channel in the Arboretum (a proJect that would be completed in 1968), and a reservoir was to be designed for recreational use.ss This new concern for the appearance of the Arboretum was linked to the growth of the campus towards the south, including administration buildings in the late sixties, and the more frequent use of the southern entrance.

In 965 the Arboretum received funding fr_om the College of Letters 'and Sciences and the Fnends of the Arboretum, and for the first time the Sh1dent Activities Fund provided support, which was justified by recreational use of the Arboretum. On March 4, the Regents approved the appropriation of $17,500 for the construction of paths and the extension of waterlines to Shields Grove.s6 On May 4, 1965, the Carolee Shields **White Flower Garden** was dedicated to the wife of Peter Shields, with Dean Emeritus Knowles Ryerson and Judge MacBride attending. The elderly Mrs. Shields visited the site the day before.[87] This garden would be more fully developed in the 1970s (see **Botanical Collections** section below).

In mid 1960s, the Arboretum Committee, which advised and worked with Director Berg, drew up a Proposed Development Plan for the Arboretum that gives a good picture of its condition at that point:

> At present the Arboretum is at a critical point because the-jerry-built and interim arrangements under which it has been operated are becoming increasingly inefficient... the Arboretum has gained considerable status as a botanical institution, with excellent collections of manzanita and ceanothus, and [more recently] oak and acacia of scientific importance. Shields Grove could become one of the most important collection of oaks in the world, if adequately supported.[88]

This report also laments the fact that as yet, the Arboretum has no major role in the educational process, and suggests ways to generate public education use and technical botanical training, such as extension courses in botany, taxonomy and horticulture for the public.

As in 1959, the Arboretum Committee drew up ambitious plans, some of which have yet to be realized. Plans mentioned in this repor were to establish a . phytogeographical center, launch gr duate progr_ams m ec?logy, t_axonomy, evolution, and study of California flora, includmg_a v getation n:iappm? pro1ect, an atlas, d historical analysis of California flora, with field work m Mexico to make comparisons to species in the south. The Arboretum Committ e also oted a need for more land and funds the construction of headquarters for offices, a library, classrooms and a lab, and the hiring of a taxonomist and plant geographer, groundsmen, secretaries and tea g assistants with operating funds in the annual campus budget. The report emphas12ed that the .Arboretum should not rely too much on student recreation funds.

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85 Arboretum Committee File, 1963-1964, Box 38, Chancellor's Files.

86 Landscape, Arboretum File, to 1967, Box 62, Chancellor's Files.

87 Matteson, 93.

88 Committee, Arboretum File, Box 63, Chancellor s Files.

Certainly the ambitious scope and detail of some of these plans can be attributed to Berg's energy and enthusiasm as director, casting improvement and support of the Arboretum as moral, academic and aesthetic imperatives for the development of the University. The following is an excerpt from the letter Berg wrote Chancellor Mrak on November 3, 1964, requesting more maintenance staff:

> . . . Since certain aspects of an Arboretum are incompatible with recreational activities, the Arboretum was promised new land near the airport when recreation moved m along creek. However, a decided increase in the number of maintenance personnel under the jurisdiction of the Arboretum will completely change the unsatisfactory conditions, so that our dwarfish and sickly Arboretum can grow into the real thing. A full-fledged Arboretum has recreational as well as purely scientific and educational aspects. With sufficient staff it would be unthinkable to give up the old, valuable plantings along the creek as well as... provisions for passive and active recreation.
>
> There is no reason why an arboretum of beauty and superior scientific quality should not be developed on this campus. There is a definite need for an experimental arboretum in the Central Valley, and at the moment at least, Davis is ahead. Our existing plantings have been developed over a period of nearly 30 years. We ... maintain seed exchange programs with leading arboreta and botanical gardens in all parts of the world. This campus holds a truly unusual concentration of plant scientists, many of whom have unique knowledge of great value to the Arboretum. We are very fortunate in having on our campus a topograhic feature, the Putah Creek Channel, that lends itself ideally to many kinds of Arboretum plantings. The present Arboretum staff, although much too small, consists of men with interest, enthusiasm and knowledge...
>
> However, unless some means of support for 3 added FfE can be found very soon, we will be in very bad shape.....Also the general appearance of the Arboretum will of necessity get worse, lowering both the esthetic, recreational and scientific value of the place.[89]

And in fact, the 1964-65 Grounds budget provided two new FTEs to work in the Arboretum for basic routine maintenance, though not as Arboretum staff.

Berg seemed to have a strong effect on the administration's perception of the Arboretum, emphasizing its realistic recreational aspect once he recognized the administration's interest in it. In this letter to Mrak, of May 24, 1965, he prefaces a request for funds for a nursery with an idealistic vision of the Arboretum's significance as a progressive environmental institution.[90]

> With your permission, I would once more like to stress the exciting nature and unusual potential of the Putah Creek Recreational complex. Today, when the large-scale destruction of the natural recreational components in the human environment is a matter of gravest concern to everybody, we here in Davis plan to create, in the middle of a large university campus, an area where active recreation can be combined with walks through peaceful groves of trees, meditation on open glens, and the pleasure of observing plant life in its endless variety and beauty. As seen it, our local solution to the general problem of the human environment is close to ideal and full of promise, and might

[89] Arboretum Committee File, 1963-1964, Box 38, Chancellor'sFiles..

[90] Up to this point and beyond the Arboretum had to borrow space in greenhouses of academic departments.

become a mod el fo r othe t rs o copy. It d oes the enti re campus credit that this kind of development is bemg conte mp 1 a t e d ma period of such rapid growth and multiple needs.

. Howevera, large and beautiful park, a fifty-acre plant collection a model recreational landscap e cann o t b e b u il t w1 'th out a plantsman s basi c tool a nursery. It 1 s absolutel_y unrealistic to assume that real progress can be made withou(one... To borrow a co erm somebody_'se s 's greenhouse is no solution. Not only will this seriously re tnct or.preve t acqms1hon and propagation of new material, it will also dwarf the mmds, rum the mterest, and cool the enthusiasm of those who are expected to transform our great dreams and elaborate plans into reality.

During this year's meetings in the Campus Recreation Committee, I have several times stressed the importance of nursery facilities for the Arboretum and the Putah Creek Complex, and it is my understanding that $27,500 of the 1965/66 capital improvement budget [will go] for this purpose.[91]

That sum was not allotted for a greenhouse, and in fact the Arboretum did not get one at the Arborehun Headquarters until 1983.[92]

With the departure of Berg in September of 1965, John Tucker became acting director for one year, and conducted a search to find a replacement for Berg. Roman Gankin, who began working at the Arboretum as a botanist in 1963, first met Berg in 1955 when he spent a year in California on sabbatical, and remembered him with respect.

"It's hard to say what would have happened if Rolf had stayed," Gankin said. "He was a master of what was going on the grounds, and he was suited for making decisions on the collections. He was very tidy in how he dealt with things, and he was a very pleasant person. But he was just getting his feet wet. We felt tremendous sadness when he said he had a call to take over the national ga_rdens in Norway, but when you get called by the King to return, you return. We lost a good man there."[93]

Although many of Berg's plans for the Arboretum were not carried out until years later, many of his preliminary recommendations on the Arboretum's future, discussed with the Arborehun Committee and written on May 27, 1965, were followed in the years to come. Berg also stopped in California on his way back to Norway from Australia in July of 1972, and demonstrated a persistent interest in the Arboretum when he visited Knowles Ryerson and went over the development plans of the Arboretum.[94]

Berg's recommendations from 1965, drawing on work and plans of the Arboretum staff and committee, included the basic propositions [that]

1. Old plantings shall be retained as far as possible an om the backbone.of the future Arboretum [and] 2. Plantings shall be somewhat specialized, ecogeographically to California natives and exotics from areas with a Mediterranean type climate, taxonomically to selected families and genera of great variation, scientific interest, and horticultural promise.[95]

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91 Committee, Arboretum File, Box 63, Chancellor's Files.

92 According to John Tucker.

93 Telephone interview with Roman Gankm, August 2000.

94 Arboretum File, Box 4, Papers of Dean Knowles Ryerson, Special Collections, Shields Library, UC Davis.

95 Landscape, Arboretum File, to 1967, Box 62, Chancellor's Files.

Among erg's recommendations were a California native section to extend from the A Street bndge to the California Avenue bridge; ecogeographic native collections included a north coast area, a redwood grove, areas representing the Sierra Nevada, California deser , ch parral, and _the foothill woodlands. Suggestions for taxonomic native coll ctions mcluded *Encaceae* (heath family), *Arctostaphylos* (manzanita) *Lupinus* (lupmes), *Ceanothus* California lilac), and various California collections of *Eriogonunz* (wild buckwheat), *Rzbes* (currants and gooseberries), *Mimulus* (monkey flower) *Penst l on* (b_eard- ongue), woody *Compositae,* and woody *Rosaceae.* For both sides of the Adrrurustration bndge, Berg suggested "California garden gems, plants of outstanding beauty and horticultural value, a beauty exhibit."96

For general ecogeographic collections, Berg suggested a western Australian section with acacias, a Mediterranean section with *Salvia* (sage) and *Phlomis* Gerusalem sage) and "macchia" and "gaerrigue", Mediterranean parallels to chaparral, and a world desert garden, with succulents and other xerophytes in a stony, gravely and sandy landscape. For taxonomic general collections, Berg recommended *Myrtaceae* (Myrtle), *Eucalyptus, Callistemon* and *Calothamnus* (bottlebrushes); *Proteacea* and *Casuarinaceae; Protea, Hakeci,* and *Grevillea; Coniferae;* and expansion of the oak collection in Shields Grove. He also suggested a paleobotanical garden just east of the Putah Creek Lodge area, "a collection of plants famous for their paleobotanical importance. A *Metasequoia* grove, which will be a replica of a Tertiary forest type, is already initiated."[97]

A comparison between Berg's plans and the present botanical collections, described in the Botanical Collections sections below, shows that many of the plans have been realized, partly due to the continuous dedication of Gankin and Hildreth.

1965 -1971: A New Director Is Hired; Staff Gathers Seeds Far and Wide; the Putah **Creek Channel Improvement Project Is Completed; the Arboretum Field Headquarters Bums Down; Rapid Development Conflicts with Persistent Funding Problems**

In 1966 Grady Webster, who grew up in south Texas and came to the botany department at Davis from Purdue University, became director, a position he would hold until 1972.98 The achievements of the Arboretum in this era reflect the idea that, to be taken seriously as a botanical institution, it was important to have extensive taxonomic collections, by definition including a number of exotics. The Arboretum also began_ to take very seriously its role as a demonstration garden fo the Central Valley, c?llecting and propagating many California natives as well as exotic plants that were swted to a Mediterranean climate.

During Webster's tenure, the taxonomic collections of ericaceae (heath)_, acacias, eucalypts oaks conifers and ceanothus (California lilac) were developed considerably, among others, Ga and Hildreth said: Webster took seriously the Arboretum's official designation as a research unit, Tucker remembered, and _to add to e . Arboretum's seed collections, he went on a number seed-collecting expeditionsm California and abroad, and encouraged his staff to go on even more.

[96] Ibid.
[97] Ibid.
[98] According to Tucker and Gankin.

"He wasa wonderful person with whom to work, with a lot of knm ledge about P '-extreme y centered on the *Euphorbin* family," Gankin said. "He was the definiti n of field botanist, fi:e kind you rarely meet anymore."

ankin had been workmg on a seed collection and exchange for the botany depar ent when e a_s hired by the Arboretum, and he brought it with him, he said.

"!e hada significant set of addresses from around the world," he said. "It was easy to nck ese things up." The Arboretum began to exchange seeds with gardens in the Sov1 t U on, South Africa, Australia, and England, among others. Gankin, whose parents rmnugrated to California from Russia and who speaks Russian, particularly purs e ga dens the Soviet Union. The international seed exchange has a history of ovemdmg mternational politics,[99] and the Cold War between the U.S. and the U.S.S.R. created no problems for seed exchange with Soviet gardens, Gankin said.

"There were no political difficulties; everything came freely both ways. Each republic had its own botanical garden, usually connected with the capital city. They were very active in collecting plants from their area."

Gankin tried to accommodate the desires of Davis faculty in developing the Arboretum's seed exchange program, he said. For instance, he got grasses for Beecher Crampton, then curator of the agronomy herbarium (now combined with the Tucker Herbarium, in plant biology), acacias for Eric Conn, safflower for Paul Knowles strawberry seeds for a strawberry breeder in pomology from a garden in Russia that had 100 different varieties of strawberry, and weeds, including yellow star thistle, for Alden Crafts, then chairman of the botany departme t.

As well as developing more exotic taxonomic collections, in these years, the Arboretum began to take seriously its role as a demonstration garden for the Central Valley.

"I always felt this, that I was not an employee of the University, but of the state. I was there as a public servant to the taxpayers, growing plants that were suitable for the Central Valley. No one else was doing it. And I think we had an impact. No one else was doing plant introduction. We tried to work collaboratively with environmental horticulture and get [the plants] into the trade, through specialty nurseries first.

"There was never anything the Arboretum introduced that became rampant and weedy," like pampas grass, brooms, and gorse, which were originally introduced by nurseries and have weedily driven out native plants in many areas of the state, Gankin said. "We were interested in diversity, and in plants that do well, and not require a lot of water, or manicuring or spraying, and look pretty and last a reasonable length of time. This takes a lot of hunting and trying. We did all we could to bring in native plants. We collected for the seed exchange program in almost every county in state, except Modoc."

Hildreth also enthusiastically participated in collecting for the Arboretum's collections and seed exchange .program.

"I was so involved and passionate about the Arboretum, I spent virtually all my waking hours there. We had a staff of 12 to 15 people, mostly work-study students. The

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99 Roberts likes to tell the story of Empress Josephine, who throu?hout her ascendancy was trying

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By anti ·-N 1 forces. Even during the Napoleoru c ars, roses wou e I e t pass rom
d . hin • t t · th
apo eon ·d "People recogruz· ed that she was oi ng somet g 1 mpo r an , sav ing e

England, Roberts sa1 .
roses and bringing them together for study."

fi eld work itself was a marv l • th · ·
. e ous experi ence, ough 1 t was tough on marri ages and
kids. v were gone_ so much, two iays to two weeks every month, year round, collecting. We published a number of our discoveries." These included *Lewisia Stebbensii,* or Stebbins bitter root, named for the Davis genetics professor who was also a fo er of the _C ornia Native Plant Society100, Hildreth said. They found this plant in Devil s Rock Pile m Mendocino County, near Hull Mountain.

A the same e that the Arboretum staff were so enthusiastically developing the botarucal collections and seed exchange program, there were arguments in the Arboretum Committee and with the administration about the Arboretum's function. Vexed discussions of funding sources also foreshadowed the budget crisis of 1971.

The Arboretum Committee, which continued as an advisory group to the director, had several members who showed strong interest in the fortunes of the Arboretum under the new director, Tucker remembered, including himself, Paul Stumpf, Lloyd Ingraham and Merton Love. In 1967 the committee submitted another detailed report to Chancellor Emil Mrak regarding the aims and role of the Arboretum in campus development. In the late 196Os, considerable debate arose around the question of how the Arboretum should be administered, and what designation it should have within the University.

"Ingraham tended to think that it should just be for pure research, whereas Stumpf was on the other end, feeling more practical [about recreation and teaching]," Tucker said. "And Andrew Leiser was one of Webster's critics," because he directed the Arboretum's limited budget towards things like seed-collecting expeditions abroad.

Misunderstanding of the Arboretum's operations complicated matters. One proposal (it is not clear whose), for instance, was to transfer Student Recreation funds that supported the Arboretum to the Physical Plant in 1967-68, and to make the grounds department directly responsible for the maintenance of the 43 acres of the Arboretum.[101] Dean L. J. Andrews of the College of Letters and Sciences, to whom the Arboretum reported at that time, immediately objected to this proposal in a letter to Chancellor Mrak on May 8, 1967:

> This is some ways a very bad arrangement... the Arboretum is concerned since some of those funds are not for simple maintenance but also for the acquisition and planting of specimens and related functions. In fact the maint_enance is sufficien ly highly specialized so that I question whether it can be satisfactonly accomplished without th involvement of the Arboretum staff. This is not a routine campus garden. It is more hke a plant museum. It contains a large number of rare specimens, many of which have unusual requirements for maintenance.[102]

This lack of awareness about the Arboretum's role as a demonstration garden for environmentally appropriate plants recalls horticulturist Dick Harris's comment that the

100 Another founder of the Plant Society was John Anderson, a farmer and a surgeon at the UC Davis School of Veterinary Medicine, Barbour said. Anderson helped found the Society after he looked for, and could not find, native vegetation to plant in strips a ong ls arm or w l l e o se Such organizations already existed in the Midwest, Anderson found.

1 Landscape Arboretum File, 1967-70, Box 112, Chancellor's Files. N w retired, Webster still does research in the plant biology department, Tucker said. Webster did not respond to a request for an interview for this history.

102 Ibid.

foun_ds department in the 1950s would have preferred to landscape the campus with cast-rron plants that required the same kind of care, or lack of care." The notion that the_gro ds department, without direction from an Arboretum staff, could adequately mamtam the Arboretum's collections was a misconception that would come back to haunt the Arboretum in its fiscal year without a budget, 1972-73.

In 1967, the Arboretum received funding from three different accounting sources within the University, according to a March 23rd memo to Chancellor Mrak from R.E. Padden: one budget item in the University budget, designating the Arboretum as an organized research unit, provided $21,159 in state funds; another source was in the Student Service category, in the General Recreation account, providing $21,610 in Incidental Fees; the third funding source was the Botany department, which paid the (as usual, half-time) director's salary of $10,050,[103] which was not an additional expense, since it was half of a professor's regular salary-- at this time Grady Webster's -- and not particularly reflective of his directorship of the Arboretum.

Paddens's memo also reported that in 1965-66, incidental fees were used to augment resources of the Arboretum for more intensive maintenance than the Physical Plant could provide, though even this level was still considerably less than funding for comparable areas at other UC campuses and universities. Perhaps feeling that the Arboretum's recreational use by students did not justify much expense on the part of students, Vice Chancellor Wiggins decided that in 1967-68, any requests for increases in the Arboretum budget should be in State Funds rather than Incidental Fees. The University requested an increase of $49,709 for 1967-68 to bring the Arboretum up to a level of reasonable maintenance standards, which would provide one FTE per 9.5 acres rather than one FTE per 21.3 acres, for a total of 48 developed of the 93 assigned to the Arboretum at that time. This compared more favorably with the Berkeley and Los Angeles campuses, where each FTE was responsible for an average of five acres for their botanical gardens.[104]

The Regents Budget further reduced the Arboretum request to an increase of $21,462, and the Department of Finance allocation, prior to the Governor's ten percent reduction, allocated no increase to the Arboretum, or for that matter to any other Organized Research activity. Padden's memo also reported that incidental fees for the Arboretum would be reduced by $1,800 as of July 1, 1967, based on a decision by Vice Chancellor Baumhoff. Sympathetic to the Arboretum's bad luck with funding, Padden himself said he would request an increase in fees of $2.50 per student, which to him

> did not appear excessive in view of the potential recreation use planned along the Arboretum and Putah Creek, and would provide $29,400 in Incidental Fees, close to the $29,834 requested by Dr. Webster. [Padden] also promised to request a $2,000 increase over [the amount] requested in the Regents Budget for 1967-68.

Recognizing that, again, stude t recre_ation in the Arboretum might be its be t se g point, Webster emphasized this function on behalf of the Arboretum Corrumttee m the following Statement of General Policy, on June 15, 1967:

[103] Ibid.
[IM] Ibid.

28

> A:ter the completion of the Putah Creek development project, the Arboretum grounds will clearly serve the dual functions of recreation (largely passive recreation) and education. The educational function of the Arboretum will involve teaching, research, and public service aspects and will be the main concern of the administration staff of the Arboretum.1os

Yet Webster was concerned that the improvement of the Putah Creek channel, while benefiting the Arboretum in many ways, would also require more development and maintenance of the Arboretum than current funding and staff could accomplish. He said as much the next day in a letter to Chancellor Mark:

> The basic problem with the Arboretum, as I see it, is that it has thus far failed to attain 'critical mass' with respect to either staff or operating budget. The lack of physical facilities, while serious, is almost irrelevant as long as the staff and budgetary deficiencies last. The Putah Creek development plan, however, is in effect pulling the cart before the horse by providing many of the facilities for the Arboretum before any provision is made for increases in staff and operating expenses.
>
> In the opinion of the Arboretum Committee, the Administration of the Davis campus, by approving the Putah Creek plan, has voted in favor of an expanded and permanent Arboretum.106

Trying to position the Arboretum to get more funding, Chancellor Mrak suggested that it would make more sense to classify the Arboretum as a teaching lab, not an organized research unit, in a letter to Stumpf on July 14, 1967. Mrak wrote, "I see no difference 1:?etween it and service units such as the Electron Microscope Lab and the Computer Center."[107] Late in 1967 the Arboretum Committee seemed to lack adequate direction, according to Mrak, as he wrote to John Tucker on December 6th:

> It dawned on me after the Campus Planning Committee meeting that I may have slurred your good name with my comments about the lack of program for the Arboretum. This was not my intention. I appreciate your willingness to serve as an interim director, and I thought you did carry on very well what had been started by Dr. Berg. I have been unhappy with the Arboretum Committee's approach and lack of direction, and I hope with closer communication we can correct this.[108]

A week later, the Arboretum was reclassified. It remained an organized research unit, but was transferred from the College of Agriculture to the Botany department in the College of Letters and Sciences.[109]

Such tensions may have arisen from Director Webster's use of Arboretum funds, Tucker suggested. "He spent Arboretum money on things the Arboretum Committee thought inappropriate, and received a lot of flak, some justifiably perhaps." Gankin, Hildreth and Webster were developing the Arboretum's seed program, and seeds for the international seed exchange should be collected in the wild, Tucker said. "He would often go off collecting in the boonies, and he encouraged Hildreth and Roman [Gankin]

10s Ibid.
106 Ibid.
107 Ibid.
10s Ibid.
1 0 9
Ibid.

to do this too." In e summer of 1969, Webster went on a collecting expedition of two anda h lf months m_the South Pacific to Hawaii, Fiji, New Guinea, New Caledonia and Australia, accomparued by Gankin for part of the trip and Hildreth for all of it. But it was no lazy vacation, Hildreth remembered.

"It was the hardest work I'd ever done--18 hour days, seven days a week. And we had $_8 per diem for room *and* board. In Australia Grady and I made out on crackers and sardines. We collected a lot-- I remember getting on a plane with 18 pieces of luggage, $176 worth of extra poundage -- plants presses, dryers, catalytic heaters, a 40- foot extendable pole pruner, vials, notebooks, chemicals. Little by little we'd lose it all, giving [the equipment] to various arboreta along the way. We shipped back 22 boxes of pressed dried plant material from New Caledonia alone, and we sent material to nine different herbariums."

Such focus on research seemed to bother the administration, and when Webster and the Arboretum Committee tried to push the Arboretum further in an academic direction, the administration balked. In a letter from administrator Chet McCorkle to Dean Meyer on April 17, 1968, in response to concern that the Arboretum would enter into the academic sphere, McCorkle reported that he had talked to Stumpf and Webster with Chancellor Mrak, and,

> As I suspected, they have not thought through what they are really proposing, and it has been made abundantly clear to them that any teaching or research program must be worked through the Department of Botany and of Environmental Horticulture. We want more detailed plan of future developments.

Again, the problem of what exactly the Arboretum's function should be arose. "We recognized differing points of view for what the Arboretum was supposed to provide," Gankin remembered. The challenge was to "show, as time went on, that the arboretum had a research and teaching value that was enormous, and that its programs of growing new and interesting plants as well as providing access to a world of plants via the seed exchange program was important." The Friends of the Davis Arboretum, formed in 1971, went a lot further towards accomplishing this goal than the Arboretum had managed to before, Gankin felt.

On August 8th, 1968, when Stumpf resigned as Arboretum Committee chairman to go on sabbatical, he expressed the gen ral feelings of the Arboretum Committee when he told Executive Vice Chancellor Ed Spafford that

> progress made during the past two years was not enormous. However, we did re examine the Master Plan, obtained approval for the usual commitment for land usage, established liaisons with the redevelopment plan of the Putah Creek area...
>
> Comments that can be made include a... further pursuit of the Arboretum in terms of reality, not wishful thinking, and the establishment of a building w ch c uld be the research and teaching center of the Arboretum.....It was a pleasure working with the Arboretum... although there have been periods of excessive frustration.[110]

The dedication and enthusiasm of the Arboretum staff, as usual, was coming up against the reality of inadequate funding. Morale on the Arboretum Committee could not have been high at this point. In October of 1968, in response to fears on the part of Merton

[110] Ibid.

Love, future Arborehun Committee chairman, that the number of Committee members (eleven faculty and staff, five students and the chairman) would make for inefficient meetings, McCorkle offered assurances that attendance was not large.111

In 1968, the Arboretum's territory increased when it acquired another tract of land to the west, planted with almond and walnut orchards, which had been occupied by herd of dwarf cattle,[112] and now taken up by Shields Grove. The improvement proJect for the old Putah Creek channel, or the Arboretum Waterway, was also finished; the Waterway was dredged and expanded in three sections to create scenic lagoons. A system of paths, footbridges and picnic areas were also installed, with some leveling on the north bank to create park-like expanses. Putah Creek Lodge, a boathouse, and a footbridge were also built in 1968. These projects were funded by student fees, which was again justified by recreational use.m (Aside from this leveling, the topography of the south side of the Arboretum Waterway remains much as it has for thousands of years, with paths following natural flat terraces above the steep banks, according to Roberts.)

The Arboretum staff was excited but rather overwhelmed at the prospect of developing and maintaining these new areas in the Arboretum without more assistance. Gankin remembered thinking, "How in heaven's name is my staff of three nurserymen and a groundsmen and myself going to manage all this new acreage? A member of the administration would pat me on the back and say it would take care of itself. Those kinds of things irritated me. And of course, with university budgets, it takes a year or two to get what you want.

"[I didn't know] what was in the heads of the administration. All I knew is they were doing things, putting in bridges, and we were doing the landscaping, to get things to fit together. That part of campus [the southern part] became the front door. We weren't just growing anything there, but what would be and continue to be attractive, plants that could withstand conditions of the Davis climate. Many things from central Asia, China and Australia came in."

It seemed that the first real impetus to spruce up the creek channel and the Arboretum was linked to the new proximity to a more frequented entrance to campus, and to the University administration buildings. In 1966 the University administration moved into Mrak Hall, near the center of the Arboretum, and King Hall, affiliated with the law school, was completed in 1967, both on former Arboretum land.[114]

"Putah Creek was no longer just an arboretum," Weier observed. "It was the front door to the campus; it was student recreation and it was part of the campus system."[115]

Along with increased concern for the appearance of the Arboretum, b_ureaucracy plagued its management. Tensions betwee e Arbo etum taff and Comrmtte and the University administration, and the inefficiency of mvolvmg so many peoplem

111 Ibid.

112 The idea of miniature grazing animals comes from some aest h • "d f E l· h d emng, which suggeste d th t a landscape could be made to look bigger if small horses and cattle grazed on the farthest reaches of it, according to Roberts.

113 Landscape-Arboretum File, 1967-70, Box 112, Chancellors Files.

114 Matteson, 96.

115 Weier slide show notes, PP· 11.

routine maintenance decisio • ct· d by the energy put mto a minor dispute en, about the removal of rocks from th l • G d w ch has also s mce been removed.

Letter of January 10, 1969, from Spafford to Webster:

. l as have all of the rocks in the iris planting area of the Arboretum removed. This decision is base? on aesthetic reasons after consultation with the appropriate staff members and committees responsible for the planning and aesthetic aspects of the campus.

Letter of March 21, 1969, from Webster to Spafford:

I and the Arboretum Committee and the Campus Beautification Committee disagree with your insistence to remove rocks. I will return the issue to the Arboretum Committee. To remove rocks immediately would disturb the plantings.

Letter of March 27, 1969, from Spafford to Webster:

I'm glad to hear that Roman is agreeable to removing the rocks out of the iris garden section of the Arboretum. Hopefully, this will be done before Picnic Day.

Unfortunately, it is the unhappy lot of administrators to insist that certain actions be taken, and the happier task of committees to comment and advise.

Please emphasize to your staff that it is responsible only for plantings within the approved planting plan, and that other items such as placement of rocks, fences or structures are definitely not within their scope of authority without prior approval by the Campus Planning Committee and the Campus and Consulting Architects.[116]

Also around this time, financial problems and disagreements about how the Arboretum's limited funds should be spent were intensifying.

In submitting the annual report of the Arboretum Committee in June of 1969, this time to the Dean Meyer, of the College of Agriculture and Environmental Sciences, who was to become chancellor, Webster referred to the continuing lack of sufficient funds for the Arboretum, which still lacked a greenhouse and a headquarters, observing that "since the Arboretum has always operated on a shoestring, we are being rather philosophic about the current financial crisis."[117] But the financial crisis would get worse.

In response to this report, perhaps with concerns about the staff's seed-collesting expeditions, Meyer wrote this note to Arboretum Committee chairman Merton Love: "The definition of the Arboretum is needed. For example, if it is a botanical garden having plants for botanists, this is one item, while a collection of plants for citizens is another, which then might justify the use of the registration fees." Meyer also wanted to know how much the departments of Environmental Horticulture and Botany used the Arboretum for teaching.[118]

Responses from those departments told that, as of 1969, three botany courses regularly used the Arboretum -- Botany 2, Biology 10 (Evolution in Acacia) and Botany 141 (Plant geography of Proteaceae). Five profes ors d o e graduate_ stude t in the Botany department were using Arboretum plantings m therr research, mcludmg *Myoporum, Protoeaceae, Arctostaphylos, Ceanothus, Quercus, Cercis,* and *Calycanthus.* Two visitors from Stanford and University College, London, had also recently done research

116 Landscape Arboretum File, 1967-70, Box 112, Chancellor's Files.

117 Ibid..

118 Ibid.

on *Eucalyptus* and *Aesculus californica* in the Arboretum. The Environmental Horticulture deparhnent reported in 1969 that two classes used the Arboretum each quar er, to teach plant identification and systematics and ornamental uses. Research was info al, butlabsessions were often scheduled in the Arboretum, and requests for plant specrmens from e Arboretum were always granted.119

On October 14 and 15, 1969, the Arboretum's inadequate facilities suffered a major loss when a fire set by a hot plate burned down the Arboretum field headquarters in HB-4, at the south edge of campus under the present freeway. "We lost all our textbooks, reference works, all our research materials and equipment," Hildreth remembered. "I literally had nighhnares about it for a month."

A great deal of equipment was lost, including pots, beakers, axes, vises, desks, tables, camping equipment, and cameras, as well a·s the primary plant records, though duplicates of the records, which Gankin had insisted on making, were safe elsewhere. Photographs and slides recording the development of the Arboretum were also lost, along with the entire seed collection, Gankin said.

As the sixties ended, the Arboretum's problems were soon to get worse, as it continued to scramble for more adequate funding. In a draft of an annual report to the chancellor on July 25, 1970, Arboretum Committee chairman Merton Love wrote:

> The development and even maintenance of the Arboretum is severely handicapped by budget limitations. The Committee agreed that the use of student fees to raise 50% of the total budget is justified because of 1) the aesthetics of the area 2) general student interest in the names of the species planted and 3) recreational and meditative opportunities provided by the Arboretum. The Committee welcomed the budgetary support and labor provided by the Physical Plant beginning this year.

Soon, support from the grounds department would be the only maintenance the Arboretum would get. In the fiscal year 1971-72, early Reaganomics trickled down to the Arboretum.

The Financial Crisis of 1971- 1972: in the Year of No Budget, Governor Reagan Takes Away and Mrs. Reagan Gives; the Friends of the Davis Arboretum Come to the **Rescue**

The Arboretum's budget was officially eliminated in fiscal year 1971-72, leading to the forced departure of Gankin and Hildreth and the voluntary resignation of Director Webster.120 Although some funding was still allocated to the Physical Plant for minimal maintenance of the Arboretum by the grounds department, the collections suffered from neglect and the loss of the committed staff. The ultimate reason was that in 1971, California Governor Ronald Reagan responded to campus unrest at Berkeley by reducing financial support for the entire University of California system, as Hildreth remembered.

"Reagan chopped up the University, and left Roman and me on the street," he s d.

The elimination of the Arboretum's official budget surpnsed and angered Director Webster, as his letter shows, dated March 26, 1971, to Chancellor James Meyer:

119 Jbid.
120 Landscape Arboretum File, 1971, Box 121, Chancellors Files.

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> To my omplete astonishment, I have just been informed that the Arboretum budg t is _being eliminated for 71-72, that the Arboretum is being terminated as an orga ation, and that the staff are to be deprived of their jobs as of June 30, and that I am to be divested of my title as Director of the Arboretum ...
>
> . (T]his administrative decision is financially unwarranted, scientifically uninformed, and furthermore illegal under the provisions of campus government. No one has ever suggested to me that the Arboretum budget might be entirely eliminated or that the Arboretum would be wiped out as an institution... an administration which hopes to retain the support of its faculty and staff in these critical times can ill afford to resort to such deceptive maneuvers...
>
> I cannot approve of the Physical Plant maintaining the Arboretum... Are we expected to sacrifice both the past and the future of the Arboretum collection for questionable reasons of budget expediency?...
>
> In closing, I ask you to reconsider the fate of the Arboretum, and to reverse this misguided administrative decision... If the Arboretum is to be executed, let it first be judged unworthy of support by the University on the basis of its lack of accomplishment - but I am certain that its worth would be sustained by a proper unbiased review.[121]

In his reply to Webster on March 31st, Meyer, who had generally been supportive of the Arboretum, explained that finances were difficult all over the university and the administration was doing its best to maintain programs. "Basically," Meyer wrote, "your letter contained items which were incorrect interpretations of alleged actions, and hence I have to reject this appeal."[122] Meyer defended the administration more explicitly in a letter to Knowles Ryerson on March 29, when he said that the present Arboretum would be intact and maintained, under the supervision of Vice Chancellor Spafford and the Grounds department, with Harry Kohl and the department of Environmental Horticulture providing necessary scientific advice. Deflecting the blame from the UC Davis administration, Meyer tried to make the situation sound less dire, and suggested that the administration's strategy was to keep funding for the Arboretum from being eliminated completely by hiding it in other parts of the University's budget:

> We have, however, had to cut down on the expenditures of the Arboretum and remove the funds identified as Arboretum. If we did not do this as this time, they would become subject to a line item veto by the Legislature or the Governor's office. Other items of a similar nature have been eliminated because they were so apparent.[123]

Ln the spring a newly formed Friends of the Davis Arboretum, a different group with different members than Ryerson's Friends of the Arboretum, came to the rescue of the Arboretum, although Ryerson himself was very much involved in efforts to help the Arboretum. With considerable publicity, the Friends raised money and volunteer support to get the Arboretum through one year without a formal budget, and campaigned successfully to get its budget officially reinstated in 1972-73.[124] For more than twenty years, in fact, the Friends would be the Arboretum's most important source of moral, and often financial, support. Original members of this group included Jack

121 Landscape Arboretum File, 1971, Box 121, Chancellor's Files.

122 Ibid.

123 Ibid.

124 Landscape Arboretum File, 1972-73, Box 128, Chancellor's Files.

and Mary Major, June McCaskill, Arthur and Winifred Spurr, among others, Mrs. Major remembered.

"Th;, ad tr tion decided the Arboretum was a frill, and the local people got up m arms, she said[1]. The Arboretum was the only landscape feature in the area." For all e _damage that the budget elimination did to the Arboretum, the crisis gave it more publicity than it ever had before.

Webster took heart when it appeared that the community and students in particular were devoted to the cause of the Arboretum, and might donate funds and volunteer labor to help save it, as indicated by an article in *The Cal Aggie* on April 2nd. On April 10th, *The Sacramento Bee* published an article, "Budget cuts endanger arboretum at Davis," that gained more attention and provoked many letters of concern and support to the Friends of the Davis Arboretum and to the UC Davis administration. Also in April, *The California Horticultural Journal* published a protest against the elimination of the Davis Arboretum in the Editor's Notes, and editor Owen Pearce joined the Friends of the Arboretum on June 29, 1971.125

Students showed considerable support. On May 18, the ASUCD Committee to Save the Arboretum presented the following petition, with 825 signatures, to the chancellor:

> We, the undersigned members of the Davis academic community, hereby express our concern overt any budget cuts which may lead to a deterioration in the University Arboretum. We implore the Chancellor to personally intervene and seek adequate funds to maintain the Arboretum as both a recreational resource and an instructional facility for the entire community to enjoy.[126]

On July 6th, Ingraham reported to Executive Vice Chancellor Ed Spafford that the Friends of the Davis Arboretum "have now received around 500 letters containing donations, making a total of about $3,000 to date."[127]

None of public support would persuade the administration to reinstate the Arboretum's official budget. As of April 30th, the University's plan to maintain the Arboretum, as Meyer explained it to Stumpf, was to leave $35,000 in the physical plant budget for maintenance of the Arboretum, and to maintain the half-time salary (and full-time in summer) for the director. What this meant, in effect, was a cut of 30% in the Arboretum's budget and the elimination of 1.75 full-time employees, Hildreth and Gankin. Ina separate letter to Dean Andrews of the College of Agriculture, Meyer[128] suggested that Webster may not have devoted enough time to theArboretum.

With the fate of the Arboretum in question, the real threat of budget cuts provokeda great deal of soul-searching, criticism, evaluation and debate about the purpose of the Arboretum, and how to fund it. The frank report of the Arboretum Subcommittee from May of 1971 provides a glimpse into different perceptions and goals

125 Task Force, Arboretum, File, 1971-74, Box 162, Chancellor'sFiles.

126 Ibid.

127 Aft r the dredging of the old Putah Creek channel, Lake Spafford was d dic ted to Ed 5 ff d who Roberts felt, always had the best interests of the Arboretumm mind, and was u f us ;y blam d for the troubles of the Arboretum. He was pragmatic andhonest, and he and his wife were supportive of the Arboretum.

128 Landscape Arboretum File, 1971, Box 121, ChancellorsFiles.

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of the rboretum, including renewed debate about the question of recreation, as the following ex erpts s ow. Among the most outspoken advocates of the Arboretum was Dr. Andy Leiser, chalTillan of the Campus Landscape Committee.

Concern about th future *o:* Arboretum was directly precipitated by reduced State support f r organized services. The Arboretum has 4 functions: 1) Introduction and propaga_hon of new plants in the Sacramento Valley 2) Laboratory instruction in botany and environmental horticulture 3) Education for visitors to the [Arboretum] 4) Recreation for student and faculty.

"Tours are a good idea, but the labeling machine was lost in a fire, so many new plants are unlabeled" - Grady Webster, director

"The Arboretum was always an orphan but a good idea and many people use it. During the present financial crisis some things requiring individual care must be lost. The trees, shrubs, for the most part, will survive. There is too much investment to abandon it in spite of reductions. The Arboretum staff has continued to plant in the face of reductions Support could come from outside groups; many campus departments have used the Arboretum without assisting. The administration has never supported the Arboretum with enthusiasm, and the area boundaries have never been defined." - Gerald Henderson, Architects and Engineers

"[The Arboretum has] no recreation function except in the future, if Environmental Horticulture develops a parks and recreation major."- Dr. Harry Kohl, Environmental Horticulture

"During 1964 - 67, the Arboretum Committee was mostly talk with little action. Contrasted with Berkeley and UCLA this Arboretum has never been recognized by the Regents; thus it is not called a botanical garden. There has never been a formal allocation or assignment of land such as there is to Environmental Horticulture. Three or four years ago, the committee asked the administration for acknowledgment that the Arboretum existed. There has been precious little support either moral or financial from the Botany Department. [The Arboretum] is too little to gain popular support, and it's too late to save it We should either get in or get out; it is a fraud to pretend to have an Arboretum that does not exist; if the administration does not have conviction that the program must be kept viable, if it is only a sop to public opinion, then declare it as a park like part of the campus. A credibility gap will ensue if the lack of funding continues, and we won't really have an Arboretum, just a name." - Dr. Leiser

"From the beginning the Arboretum has been designed with the recreational function as a central consideration .....The Arboretum never would have been built without recreation as a central consideration." - Dean Knowles Ryerson [notes from an interview]

"The recreation function is clearly one of the principal reasons why the Arboretum exists. The Arboretum is considerably more elaborate than is needed for teaching and research functions. The main reason why these exotic plants and trees were strung out along the creek banks, instead of beu:'g planted in neat rows in a field, w_as so that students could enjoy the plants as a recreational resource as well as a lab teaching and research resource." -Dr. Kohl

"It will be very hard to start up the Seed Exchange Program again.....If we continue as we have, and as is currently planned, it will make a mockery of the Arboretum. It will mislead and deceive other Arboretums and Botanical Gardens with whom we have contact.

"If Arboretum staff is laid off it will be hard to get competent staff in the future because of a real scarcity of good botanists, and because Davis's reputation for im c o nsistent support and the consequent fear of chronic financial chaos. The current M h b u d g e t of $35,000 is only token support, barely enough to maintai n t e program. uc

> of Gankin's and Hildreth's work is just now coming to fruition and is about to be complete! lost. You might analogize their situation to a rocket on the launching pad whose engines are started, but then shut down just as the engine begins to leave the ground. The maintenance crew [Grounds department] is semi-skilled at best." - Dr. Leiser
>
> [Predicted] Survival of Plants in the Arboretum, rated factors 0-10: O for Carolee Shields Garden, Ground cover project, Iris garden, 6 for Shields grove, 5 for Acacia, 8 for conifers, 3 for Salvia, 2 for Desert, 9 for Weier Redwoods, 2 for Ceanothus, 3 for Arctostaphylos, 8 for Myrtaceae, 7 exotic area, 8, Mrak conifer grove

Gankin and Hildreth both were very upset, not only by the prospect of losing their jobs, but of the neglect and damage the Arboretum's collections would surely suffer without professional staff.

"I tried to put the Arboretum on the map globally, and I think I succeeded to some degree, but when it was closed I was very disturbed and depressed about it for a while," Gankin said. "We were told it would just be a part of the grounds, a park."

"Tucker, [Lloyd] Ingraham and I tried to save it up until the very last, after Roman and I both received our dismissals," Hildreth remembered. They even appealed to the Governor's wife herself, Nancy Reagan (see below). On May 28, the Arboretum staff met with members of the grounds department to give continuing technical instruction and guidance in the care and maintenance of Arboretum plantings.[29]

In June, Governor Reagan's staff was still defending the reduction of UC support, indeed arguing that there were no such cuts. In an explanation of a speech Governor Reagan gave at the Commonwealth Club, Earl Coke, Secretary of Agriculture and Services Agency, wrote on June 23 to Mr. Austin Armer, who had inquired about the Arboretum:

> The State administration in no way allocates funds for particular projects of the University. How much they spend on research is entirely up to the University administration. The point the Governor is trying to get over is that all this talk of reduction of State- appropriated funds to the University is completely untrue. There have been substantial increases each year until the fiscal year '71-72, and even then there was no reduction in the budget of the University.[130]

Nevertheless, the University continued to feel the reality of budget cuts.

Also in June, Nancy Crosby took charge of the volunteer workers for the Fnends of the Davis Arboretum.m On July 14, *The Davis Enterprise* published a notice that the Friends of the Arboretum were seeking volunteer help "to help care for certain more critical areas of the University Arboretum-- weeding, cultivating around new plantings, and removing dead leaves and blossoms from plants.."[132]

Meanwhile Lloyd Ingraham, president of the Fnends of the Davis Arbore , hadappealed to the Governor's wife, Nancy Reagan, for help. Ingraham, Dick Hildreth and John Tucker made a presentation with slides about the Arboretum to Mrs. Reagan

· M k H 11 one afternoon in June. She showed up on a very hot afternoon, :aJ:eure bay state trooper in a red Chrysler convertible, Hildreth remembered.

[129] Ibid.
[130] Ibid.
[131] Matteson, 102.
[132] Clipped in the Scrapbook of the Arboretum.

"We met her on the steps of Mrak Hall, and we had reserved a small conference room on the third floor [Chancellor's Suite]. It must have been 68 degrees inside, and she was wearing a sleeveless dress, and she jumped up when leaned against the cold metal back of her chair," he remembered, laughing. "Anyway, she was appreciative of the Arboretums story, and she said she wasn't sure what she could do, but she'd do what she could."

On June 9, Mrs. Reagan offered her general support for the Arboretum in a letter. She promised to seek financial support for the Arboretum, and initiated a project with the Department of Public Works to plant selections from the Arboretum along state highways. On August 3rd, she wrote to Ingraham to say that James A. Moe, Director of Public Works, would come to the Arboretum to discuss the highway planting project: "Mr. Moe was particularly interested--as was I--in using some of your wonderful plantings along our highways," she wrote. On August 6th, Moe wrote that

> Mrs. Reagan personally informed me of her impression of the value of the Davis Arboretum. To take advantage of the information she obtained, we are looking forward to the visit by representatives of the Department of Public Works to review the possible utilization of low maintenance plants identified there as having potential use along highway rights of way.[133]

Hildreth remembered that Mrs. Reagan "seemed to see the unique value of the Arboretum, and the direct benefit for state highway beautification. We gave the presentation to her on Friday, and on Monday we got a call from Cal Trans," which eventually resulted in a three-year research project on highway plantings, from January 1973 to June 1975 (see below).

Meanwhile, as of June 30, 1971, Gankin and Hildreth were out of work.

"I looked all over for work," Hildreth remembered. "Roman and I, sadly, were competing for the same jobs. I attended workshops in Sacramento the state had set up for all the professionals who were laid off. There were hundreds of us. There were pep talks and help sessions, and they were helpful for keeping your spirits up if nothing else." Luckily, Hildreth became director of the Saratoga Horticultural Foundation.[134]

"There was no safety net at all, no compensation," Gankin said. "Grady told us the end has come, I have to give you your marching orders." Gankin found work as a resource planner for San Mateo County, including habitat conservation and planning.[135]

The community continued to gather volunteer support and funding to get the Arboretum through the fiscal year.

"The Friends got strong, by '72. We were trying to keep the Arboretum going with help from Mark Cary, a botanist and a conscientious objector. We struggled along until Warren [Roperts] arrived," Mary Major said. On January 6, 1972, ASUCD gave an unconditional grant of $1,500 to the Arboretum, in care of the Friends of the Davis

133.Landscape Arboretum File, 1971, Box 121, Chancellor's Files.

134.Hildreth went on to direct the State Arboretum at the University of Utah, and is now retired in Tucson, Arizona.

135.Gankin continued in this work for San Mateo County until his retirement four years ago, with a brief stint in environmental consulting on wetlands in Chesapeake Bay in the early seventies. He now lives in Redwood City.

Arb retum, mailed direc_tly to Grady Webster. As of July 1 of that year, the Friends of Davis Arboretum_ha raised $5,705.89, including the ASUCD grant.136

Careful_ t:hinkmg about the future of the Arborehun again raised the issue of its different functions. On January 24, 1972, the Arborehun Task Force considered the "Recreational Function of the Arboretum" and determined that there were

> virtually no restrictions on the range of recreational activities welcomed on Arboretum grounds. This raises an important point: If there is one theme that has emerged again and again throughout the Task Force's deliberations, it is the imperative need for formulation of a mission-declaration which recognizes 1) the mixed functions 2) disparate publics and 3) shared responsibilities of the Arboretum.137

Perhaps because of concerns about the way Director Webster had used the Arboretum's limited funds in the past for research, on March 31, 1972, the administration suggested that a review be conducted of Webster, on the basis that it was typical for organized research unit directors to be reviewed every five years or less. On the same day, Ingraham recommended that Fred Addicott become director. On April 10, members of the Botany department argued for retaining direction of the Arboretum in that department, and announced that no review of Dr. Webster would be necessary, as he was resigning as of July 1. On May 18, Chancellor Meyer appointed John Tucker acting director as of July 1. As it turned out, Tucker would serve as director of the Arboretum for 12 years, until 1984.138

1972 -1984: Volunteer and Educational Programs Are Developed; Funding Slowly Improves as Staff Grows and Develops Collections

In fiscal year 1972-73, campus funding for the Arboretum had been officially reinstated at a low level, with $16,360 from the Botany department's operating budget.139 Tucker set about finding staff to help the plants recover from a year of inadequate care, and to salvage and continue the work that Gankin and Hildreth had begun.

On October *;i.,* 1972, the Arboretum received a great blessing and a curse. The curse was a storm that wrought considerable damage in the Arboretum -- six trees were uprooted or broken (two oaks, two eucalyptus, one acacia, and one box elder) and ten other trees lost major branches. The blessing was that Tucker hired a man whose expertise and enthusiasm have helped the Arboretum weather 26 years of recurrent financial crises. That day **Warren G. Roberts** was hired as superintendent of the Arboretum, a position he has held ever since.

Hildreth and Gankin were very pleased with this choice. "I picked Warren as my successor," Hildreth said. And Gankin, who visited the Arboretum again in 1974, felt that it was in good hands. "He came in and took over a situation that was very tough and deserves a lot of praise," he said. "Some of the plants had really suffered.I was upset when I went back; some plants were no longer there, mature ees that had been in good condition. There was a Guadalupe cypress, one of the few m the U.S. that

136.Task Force, Arboretum, File, 1971-74, Box 162, Chancellor's Files.

137.Ibi
d. 13s
Ibid.
1 3 9
Ibid.

set cones, nd e could distribute them. After a couple of years of disastrous overwa enng, it as cut in half. Warren got at it right aw y."140

y 11:?st nnport":11t accomplishment as Arboretum Director was getting Warren hired, Tucker said, half-seriously, 28 years later. Tucker had taught Roberts in both undergraduate and graduate courses in plant taxonomy and had always been very impressed with him. "He's always been a natural botanist in,the field."

At Davis Rober_ts took a bachelor's degree in landscape horticulture and a master's degree m horticulture. He worked as an intern for six months at the Saratoga Hortic ture Foundation, and taught at Cal Poly-Pomona for several years and at UCLA extension for one quarter before coming to the Arboretum.

More than any other present member of the staff, Roberts embodies the history of the Arboretum. He knows more than anyone else does about the Arboretum's collections and the natural and cultural history of the site, far before his own time, and a considerable amount about the history of the University of California and California in general. Born in San Francisco and raised in Burlingame, Roberts also spent time as a child in Kern, Santa Cruz and Monterey counties, and grew up knowing different parts of California and noticing how they differed.

Roberts comes from a long line of plant lovers and California natives of several generations. His father and grandfather were professionals in horticulture, his great grandmother knew the healing powers of herbs, and her father-in-law was a doctor who applied botanical science in his practice. Visiting family, for Roberts, meant visiting their gardens, learning about plants and getting quizzed about them. Roberts also was a protege of horticulturist Lester Rountree in Carmel, who is well-known for introducing California native plants into California horticulture, and would take Roberts on excursions to the high Sierra.

When Tucker hired Roberts, he was the only full-time employee. Like all Arboretum directors until the present one, Kathleen Socolofsky, Tucker had a 50% teaching appointment and a 50% appointment to the Arboretum. This was difficult because departmental reviews still looked for research, for which he had little time, nor did he have enough time for the Arboretum. The salary of the director was the same as a full-time appointment as a professor, without any additional compensation. "You assumed more responsibility, without much credit," Tucker observes.

Roberts had some help from grounds department staff, who did maintenance, and one student assistant, Mark Cary, the same botanist and conscientious objector who had helped out during the year of no budget, and continued work in the Arboretum as community service. In 1972 and 1973, Roberts began instruction for 47 members of the grounds department, "in identification and ecology of campus trees and shrubs, pruning, irrigation, soils, plant nutrition (and weed control, by Clyde Elmore, Ag. Extension). The objective of the course was to upgrade the skills of the groundsmen m the Arboretum (who are personnel from the Grounds Dept.)," Tucker wrote in his

1405 dl T er wro m his director's report of 1973-74:"the l arg e G uadalupe C ypr ess flan king k a y e f t uc ,

the on dg e k ll l wly dying -- by all indications a victim o overwatenng m recen to H a s o f

ears There seems to b i e pr d the only one anywhere recorded to have set cones an npene d seed in the country.

1 5 l ttl aspect of saving the tree. Thi•s was one of the fi•nest o its species d

m cul t ivati on m Ca1i omi a, an

director's report.[141] Bermuda
times the rather toxic Roundugras wasa p_articul r pest in the Arboretum. Several
an[d] woo[d] chi ps were put m agamst other weeds 142
Immediate pro ble ms the fir t th A b.
th s ye r e r oretum's budget was reinstated were
ones at would persi[st.] L need to stabilize the stream banks and check erosion. 2. to
develop an adequate and efficient irrigation system," and, with continued attention to the
fron t door of campu s "3. to <level op more mtensi ve[1]y, and wi th more concern for aesthetic
va ues, ar a from entrance bridge to Mrak, east to Wyatt Snack bar."143 Problems with
erosion of stream banks and archaic irrigation systems persist to the present in some areas
of the Arboretum.

One cause of the erosion of the banks of the creek was ducks which are both pets and pests in the Arboretum. Many visitors, especially children: enjoy feeding them. Tucker described the problem in a letter on December 15, 1972 to Robert Kelleher in the Physical Plant:

> bank erosion along Putah Creek in the Arboretum is of increasing concern... the whole process of erosion and collapse of the bank starts, apparently, by ducks probing for burrowing worms and insects in the bank at the water line. Soft soil begins to crumble and collapse -- Lippia isn't helping. Since the ducks are a major contributor to the problem, I highly recommend the population be reduced to a manageable number.144

For a while in the 1970s, around Easter, Warren Roberts conducted an informal adopt-a duck program, which he called an introduck-tory offer.

"People were coming all the way from Yuba City to get ducks," he said. "Some people stuffed them in gunny sacks, and then there was trouble, with baby ducks screaming."

Spafford eventually ordered the Arboretum to cease using the duck give away as a method of controlling the population.[145]

On February 26, 1973, the Arboretum hired Mai K. Arbegast, landscape architect, to do planning studies on the Arboretum, particularly of Shields Grove, and on May 24 of that year a statewide conference was held on the development program for the Davis Arboretum.146 Tucker noted that"Arbegast's plans for Shields Grove undoubtedly the biggest event since the great 'face-lift" of 67-68.[147] Reflecting that the Arboretum had more clearly articulated its functions as both a demonstration garden and an area for recreation, Dean Ryerson was quoted in a University press release on December 13, 1973, commenting on the further development of Shields' Grove and the Arboretum in general:

141 Annual Report of the Director, 1972-73. The Annual Reports of the Director are available in the Arboretum's files at Arboretum Headquarters.

142 Annual Reports of the Director, 1975-76 and 1978-79.

143 fuid

144 Landscape Arboretum File, 1972-73, Box 128, Chancellor's Files.

145 lbid.

146 lbid.

141 Annual Report of the Director, 1973-74.

> The ultimate objective is to put the Arboretum to work as arboretums around the world areuse_d -- t? how residents of the general central valley what plants grow well in this area with minimal upkeep. [Peter] Shields' interest in students and trees, in that order, enables us to create a pleasant place for students to sit and perhaps study. His concept for the Arboretu was to ave a place of quiet and enjoyment for the students of this campus and that is our obJective.148

Along with other improvements and changes to the Arboretum in 1973 the controversial ! ris Garden was removed. Since the early 1960s, the Iris Garden had been very popular m the community, and in the late 1960s the staff of the Arboretum had cooperated in pl ting and planning the Iris Garden for the American Iris Society's national convention. But the garden was not particularly in line with the Arboretum's general preference for low-maintenance, hardy plants, as the irises required a great deal of attention in exchange for a brief blooming season.149

The Iris Garden dated from an era when Arboretum staff had been choosing some plantings on a rather haphazard plan. "There was some indecision from above, as to what would or wouldn't be grown in the Arboretum," Gankin remembered. "Everything seemed fair game, including irises, which turned out to be an ill-gotten issue. But we had thought, why not? They might get us more funding."

On October 4, 1973, Spafford wrote to Rol;Jerts that "permission has been granted for the Friends of the Arboretum to sell the Iris bulbs at the Oct. festival. Please do not advertise them as University bulbs, or corning from the University, but merely as Iris bulbs with the proceeds to go to Friends of the Arboretum."iso

At this time the volunteer support that the Friends of the Davis Arboretum had gathered in the year of no budget continued to grow, and has helped make up for an inadequate paid staff ever since. In the 1972-73 Report of the Director, Tucker reported the "total volunteer labor this year is 472 man hours (mostly woman hours!)."

Mary Major was working part-time at the Arboretum in the seventies, nominally as a secretary at first, but she quickly took on more ambitious projects.

"We were starting programs, trying to find money, raising grants," she said. At first, the Arboretum did not win much grant money, but the staff gained experience in how to apply. For the 1974-75 fiscal year, the California Crop Improvement Association, a private growers organization, gave $600 to the Arboretum to fund the international seed exchange program.1s1 In 1976, Major's efforts paid off when the Arboretum won an Elvenia J. Slosson grant of $8,500, to fund "a short course for home gardeners, the publication of Arboretum pamphlets and an Arboretum docent training program." In 152

the 1970s, a number of educational programs were also developed at the Arboretum. The Friends, which serves at least two distinct constituencies, gardeners and naturalists, initiated a public lecture series in 1971, with six evening le_ctures a fear and ten noon lectures. Topics over the years have included plant xplora on,_ o chi s, bulbs native Americans of California, native plants, home gardening advice, irrigation, bota nical travel reports, edible mushrooms, an an scape es1 gri.

148 Jbid.
149 Landscape Arboretum File, 1972-73, Box 128, ChancellorsFiles.
150 Ibid.
151 Annual Report of the Director, 1974-75.
152 Matteson, 110.
153 Arboretum scrap book, Arboretum library.

The Arboretum Outdoor Education Program, which used the Arboretum as an ou_tdoor clas_sroom for children from the area, was started by Kay Pratt and JoAnn Wildenradt 1111973. Pratt had studied the beginnings of elementary nature education, from 1890 to 1930 for a Master's degree in applied behavioral science, and as an undergraduate at Cornell University she studied bacteriology. One outdoor education program, called "The Nose Knows," taught children the scents of plants. In 1974, Roberts also sta ted an internship program in the Arboretum with the Bixby Work Learn program 111 Botany and Environmental Horticulture.154

In the 1974-75 academic year, 900 visitors participated in 25 tours of the Arboretum, and 1400 students from kindergarten through seventh grade used the Arboretum as an outdoor classroom in the spring of 1975. In the same year, 24 Davis classes used the Arboretum, all with instruction or supervision by Roberts, who is also a lecturer in botany and environmental horticulture. On January 26, 1975, Hillel House volunteers planted 22 *Ceanothus rigi.dus* plants in celebration of Jewish Arbor Day, Tu'b'shevat, on the west side of the bridge near Mrak Hall entrance.1ss

One of the most successful and reliable fundraisers for the Arboretum was begun in 1974, the Plant Faire. The Faire serves several purposes, according to Ellen Zagory, presently collections development rnanager.156 As a major fundraiser, it brings people out to the Arboretum, which gives it better visibility in the community, and it encourages the use of environmentally appropriate plants in local horticulture, she said. The Plant Faire is held in October, on the first Saturday of the month, because fall is the best time to plant in this area, just before the rainy season.

In 1973, the research project with funding from Cal Trans, the result of Mrs. Reagan's visit, also got underway and continued until 1975. Staff from Public Works came to the Arboretum to see "our trees and shrubs," Tucker said. "They had very specific requirements. For instance, no shrubs with berries, because the berries ferment and robins eat them and you don't want half-drunken robins flying across the highway. They also didn't want leaves with woolly surfaces, because they pick up dust particles, and in a highway environment, the vast majority are microscopic particles of rubber, which make the leaves black."

Ralph Stocking, Tucker, and a graduate student of Grady Webster's in horticulture, Bijan Dehgan, had a conference with landscape architects fr m Cal Trans to decide on a project to propagate plants for the California highways. Cal Trans gave the Arboretum funds for a lath house, a holding area, and a small tool shed,_which were put in at the northwest corner of the campus in Range 3. Dehgan directed the project, which lasted two and half years, from January 1973 to June 1975, with the help of an assistant, Balbir S. Takher. A report was published in 1977: "Propagation and culture of new species of drought-tolerant plants for highways," by Bijan Deghan, John M. Tucker, & Balbir S. Takher.[157]

As explained in the abstract, the project was intended

154 Jbid.

155 Annual Report of the Director, 1974-75.

156 Interview with Ellen Zagory, August 1999.

157 D tm t of Botany and UC Davis Arboretum, Interim Report January 1973 - June 1975. ponsonng genc y d ·t h th US Department of Transportati on, Fe ra H h way Ad m1strah on. m Cooperation w1 e . A copy of this report is in the Arboretum library.

for highways in Car1£ • • M d '
rarely or never introduced omi a m e l, terranean climate areas... Ninety-two cultivated but
v . speci es me u mg a few that are shade-tolerant) were
e aluated on si e a:1d.selected on the basis of several criteria. In addition to drought
tole ance the cntena m luded aesthetic quality, "ground hugging" to reduce weeds,
av idance (where possible) of taxa with colorful fruits or berries that attract birds, or with res
ous-gland lar or pubescent foliage that collects dust, oil and rubber particles, resistance to soil
and/or water salinity, resistance to insects and diseases resistance to c o1d etc., all o which
collectively lead to minimum maintenance require ents.

Techniqu_es for vegetative propagation of the majority of these species by means of leafy stem cuttin s were wo ked out. Hypothetical and often factual explanations of suc ess s well as_ fa1l res are gwen. Seeds of 127 species, obtained through the ruver 1ty of Cahfom1 at Davis (UCO) Arboretum seed exchange program or collected m the field, were germinated. Their evaluation for highway plantings, however, was hampered by the time limitations of the project. Plantings of these seedlings in the UCD Arboretum and selected sites by the California Department of Transportation should prove their feasibility in the future.iss

Among the plants highly recommended were: *Acacia byoeana,* var. *latifolia, Acacia beauverdiana, Acacia obtusata, Acacia sophorae, Berberis lempergiana, Ceanothus megacarpus, Correa alba, Cotoneaster conspicua, Dendromecon harfordii, Ehertia dicksonii, Hakea eriantha, Maesa parvifolium, Myrtus communis, Phyllyrea latifolia, andVauquelinia californica.1s9*

The Arboretum got to keep the lath house and other equipment purchased for the project. "The project was a big boost for Arboretum morale," Tucker said.

In 1977 the Arboretum's third endowed garden or collection (after Shields Grove and Carolee Shields White Flower Garden), the **Mary Wattis Brown Garden of California Native Plants,** was established with an $18,000 endowment, which has since been added to, from Salt Lake City residents John W. and Helen Jarman, daughter of Mary Wallis Brown, who was involved with the Arboretum as a docent and was a close friend of Jack and Mary Major.160 This garden has since been developed extensively and fits very well into the Arboretum's role as a demonstration garden for the Central Valley (see **Botanical Collections** section below).

As the Arboretum began to see itself as having the public role of a living museum, it was necessary to create a program for tours and tour guides. A major development in this area was the beginning of the Arboretum docent[161] program in 1978, started by Mary Major, Roberts and T. Elliot Weier. Major persuaded Weier, who was retired to devote considerable time to training docents. The Arboretum's docent program offers free public tours, lectures, workshops and other informal educational programs.

"Roberts was the first teacher, and Dr. Weier gave us classroom work. He also wrote up something every week for *The Davis Enterprise,"* which was great for publicity, Major said. "I was supposed to develop programs, and we needed volunteers, but a lot of th • em never s tayed on. If they came in to learn about the Arboretum and plants, they either led tours or disappeared into the wood_work, whi many o t em 1 • vera,

158.Jbid.

159.Jbid., Appendix I.

160.Matteson, 111. h " · L tin' and the word 1 s use now s1 mp y to escn e vo un eers

161."Docent" means "teac er m a , who teach.

the docent program did get volunteers more involved d oce b ant
d propagators for the Arboretum, Major said. , some t s ecame
n l
p

Maxine S_chrnalenberger was a _charter member of the docent program. She began ?lunteenng at the Arboretum m 1972 and joined the Friends in 1976.

WhenI moved here to this terrifically hot place that's as flat as a pancake I fell in love with the Arboretum," she said.

She_ first came to Davis in 1956, when there were 3,000 students and 8,000 people m town, with her husband, a professor and administrator in the physical education program who also coached football, track and swimming. Schrnalenberger herself studied general education at UC Berkeley and human development at UC Davis.

There w re six people in the first docent class, taught by Weier: Schrnalenberger, Tom Vase (a retired Sacramento bureaucrat), Dick Blanchard (a retired librarian), Chris Schmidt, Kay Ogasawara, and Jackie Woodfill, the wife of a history professor. Later a few others joined the class, including Mary Wattis Brown. The docents have included faculty wives, Air Force retirees, librarians, teachers, and a retired editor from *The Sacramento Bee.*

Through 1982 Weier led the docent class, which met once a week for three hours, one hour in the classroom and two out in the Arboretum, with occasional botany lectures by Weier and visitors, often UC Davis professors, Schmalenberger sa-id.[162] The class was a survey of the whole Arboretum, focusing on major areas of plants. Weier had the docents make herbariurn samples -- pressed, dried plant specimens -- and note the Latin and common name, where it was found, characteristics, points of historical interest and anything else that would be interesting for tours, such as native American uses of a plant. After a year in this course, docents were turned loose to give tours, Schmalenberger said. She also worked with Roberts, who was teaching an introduction to the plants of the Arboretum class to docents.

"Warren is extremely knowledgeable and has a wonderful sense of humor, a great combination for a tour leader," she said.

Some potential docents have been intimidated by the _kno:-vledge they were expected to acquire, Schmalenberger said. Docents are rec i:ed m th,; fall, a d early on, "we cast a broad net, because there certainly was an attrition rate, she said. "People think they're learning gardening, but they're expected to learn about plants and the collection. Some are put off by the maps, some are overwhelmed -- Do I have to know the names of all these plants?' Few felt they could take this on, and the trend has been to simplify, because of the high attrition rate."

Continuing education trips for docents to other gardens and wilderness areas "contribute something to the body of knowledge,_for the big picture, and for tours, and foster a sense of camaraderie," Schmalenberger said.

Asa further ste in their education, some senior docents specialize m certain plant
. . th A Pb tum and give introductory lectures about them, and work on
secti ons m e r ore

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[162] In 1983, Weier limited his re ponsibih es otan rofessor, took over as the instructor of the still advised, and D r. Fred A dd icotta retire h be ynpno faculty member officially involved. In docent classes for six years. S me e then there as e the docent coordinator, which at that point was a full-1983 and 1984, Schmalenberger workeda_s d d gn the program with Weier and Roberts. ti me J ob for a volunteer, 1 to o rganize an de d Eleanor Buehler, Mary Wattl s Brown an e pi ng

After Schmalenberger, docent coo rd mato s meu Jesse Deutra, until Diane Cary was hiredm

pbrojetcts liketi.coulmpilinllg b ok lists, slide collections, herbarium specimens and maps

a ou a par c ar c o ection Schmalenbe f or i nstance, has no narrow specialty but kn t hin b th • rger,

. w_s some .g a out e whole Arboretum, particularly the Mrak Hall area. As ;n

md1v1d ual proJec t, she has eveloped a program about f · 1 uses o nati ve p ants. tr d 'ti H1 h 1 ful d a 1 ona

. . oweve e P an important the volunteers were for the Arboretum, it was d1 ficult to sustam 11 the educational programs without more paid staff, and the F ends of e Davis boretum again gave crucial help. In the 1980-81 fiscal year, the Fnends paid e salanes of the coordinators of the Outdoor and Adult Education ?rograms,_which Director Tucker, though he was very grateful, "felt [was] mappropnate, and would rather [the Friends be able to] focus on physical development of the Arboretum."163

In other areas, outside funding was forthcoming. Also in 1980, the Arboretum's fourth endowed garden, the **Ruth Risdon Storer Garden** of drought-'tolerant flowering shrubs and perennials, was founded on February 24, with a gift of $20,000 from the first female doctor in Yolo County and an avid gardener, the day before her 92nd birthday (see **Botanical Collections** section below).164 In the 1980s, the Mediterranean Collection was also developed, Roberts said, joining the numerous other collections in the Arboretum which are organized geographically.

Since the late '70s, the Arboretum has also sponsored garden-visiting trips in the U.S. and abroad, as fundraisers, led by Roberts and later by June McCaskill. Destinations have included gardens in Holland, Ireland, and England in 1979; French and Spanish Riviera gardens in 1982; Hawaii in 1984; British Columbia in 1985; the Mid Atlantic States in 1986; Texas in 1992; Sweden and Norway in 1994; and New Zealand in 1996.165

The Arboretum library was opened in 1982 with funds from the Friends of the Arboretum and is available for the use of all members. At present it has 1200 titles, inouding 20 periodicals, six to eight of which are active, including some ethnobotany periodicals. Norma Smith was the first volunteer librarian, and Judy Schneider took over until 1993. Since then Bill McCoy, who retired from administration at Shields Library in 1985, has been librarian at the Arboretum.166

Until 1982 Roberts was the Arboretum's only full-time profess10nal staff member who us:d student crews and a liaison arrangement with the grounds deparon'ent to do planting and maintenance work in the Arboretum. In 1982, th.e Arboretum was able to hire curator **Mary Burke,** who works half to three-qµarter time and also does some work for the Forest Service.

Burke holds bachelor's and master's degrees in bot y fro_m Davis_, ':1tha · 1iz ti • 1 ine plants As a student at Davis, she did an internshipm the sArpebcia a ofn map t m·1975 and remembered bicycling around to water plants oretum or one quar er th · 'th 'th d h il d round her neck 167 (She also worked at about at time w1 wl1 a gar den) Sohse co liz ad the finances of the Arboretum was still inadequate when p ant recor s. e rea e she had to bring her own pens and pencils.

163 Annual Report of the Director, 1980-81.

164 Matteson, 112.

165 Arboretum scrapbook. t 1999.

166 lnterview with Bill McCoy, AuguS

167. lnterview with Mary Burke, August1999.

. , "It's a fight to keep a high level of morale with such a crushing amount of work, but it s a fun place to work," she said. "I remember one of the students asked me 'Don't you want to s oot yourself in the head?' But it's like having a different job every three months, collecting seeds, then being a database person, etc., and I like that, and I lo e th people d the work environment. Work goes by like a big river, and you take a little m your Sierra Club cup and pour a cup of work on your desk and enjoy it while you're doing it."168

Soon the Arboretum would undergo a major change when a new diredor was selected to replace Tucker, who resigned June 30, 1984, two years before retiring from UC Davis. As he explained, his research had gone downhill while he was director, with almost no publications and no promotions other than cost of living since he'became director. As Tucker had observed, the position was one with a lot of responsibility and not much credit or compensation. The Arboretum tried to change that perception in looking for a new director.

1985 -1992: The New Director Bring a New Style; Staff Increases Considerably; the Arboretum Comes Further into the Public Eye and Wins Numerous Grants

After Tucker's resignation, **Michael Barbour,** professor of environmental horticulture, became acting director. While Barbour was acting director, the Arboretum also got funds to hire **Ellen Zagory** to make drawings and maps of the Arboretum and to design labels for the plants.

Zagory has a bachelor's and master's degree from Davis, in ornamental and environmental horticulture, respectively. She is now the collections development manager, in charge of the nursery and plant propagation. As a student in the horticulture program, she did a project in the Arboretum in 1984 and 1985.

Zagory remembered that, when she came to the Arboretum, it was still on the edge of the campus, with no buildings between it and the Office of Architects and Engineers. "The campus has grown up right next to us," she said.

One of Zagory's primary responsibilities is routine and experiment ! plant propagation. Some of the hardest things to grow in the Arboretum, she said, are plants from Asia which do not tolerate the hot summers well and suffer from the high boron level in the water. The pH in local water is high, which means the Arboretum cannot grow most dogwoods. Among the plants that grow best in the Arboretum are

168.These days Burke spends a lot of time in meeting with Arboretum neighbors and ad . . . tr ti" . . h . . . d her husband teases her that she works for the statedepartment. (See minis a on, As **boretum Neighbors** below.) As curator, her duties meu1ed k eepmg pan t

section e ow r tim" some maps and inventories of the collections, and es wn mg gran t

records for the Arbore, d d l t h d proposals analyzing the co e c w t n s, a d maintaining the seed exchange an a see l, s e sal h

Like all of the Arboretum staff, Burke tends to be overworked and has more duties than she can fully attend to. The most difficult task is probably maintaining the records. Recently the Arboretum hired a recent half-time computer support person, Dee Dee Schideler, an expert in Windows NT, to help with the 31 computers, printers and scanners and 40 programs which the Arboretum uses.

"The record system is cobbled together," Burke says. "We're still hand-writing labels." She has a long wish list: to be outside more, to work more closely with faculty, to have every plant labeled, and a database that works.

sto loniferous plants, hich grow bY spread mg stems out horizontally such as the Mex1can everung primrose, Zagory'said.169

Her other du ties including coll ec ti on d es1 gn and r mprovement, the coordination of construc tion pro1ects and s afety, electricity and plumb mg p ans, prepara ti on o f gran t proposa ls 1, ega_l of p sticides, reve tion of illness and injury plans, lectures to docents,_coordmation "':'1 the Calif? a Native Plant Society, planning for the annual P_lant Faire, and superv1s10n d trauung of four to five work-study students, three to six volunteers who help her with plant propagation, and fourteen volunteers who propagate pl nts for the Plant Faire all year. Although Zagory's salary has not been funded fully m the past by the University, she has never worried about job security. As she said, "They can't do without me."

As Zagory came on at the Arboretum, Acting Director Barbour was carefully looking for a permanent director. He felt that the position should be open not only to the botany department, and that there should be some sort of additional compensation for the directorship.

"All I accomplished was making the Arboretum director a paid position [with a $2,000 stipend], and getting it out of the botany department," he said. "There were some reservations [among the Arboretum staff] and uneasiness about going outside botany. It wasn't easy to get people to apply for director when we opened it up; we were happy we got two candidates," Andy Leiser, in environmental design, and **Kerry Dawson,** in landscape architecture. Dawson, a professor in landscape architecture, was asked by Chancellor Larry Vanderhoff to apply, he said.17° He was hired and began in 1985.

"Although Andy was more of a botanist, Kerry had more ambitious plans for the community," Barbour said.

With Director Dawson, who was very focused on publicity and increasing outside funding for the Arboretum, the Arboretum assumed more ofa campus-wide role and its reputation spread. He was educated at the Univ rsity of F orida and at UC Berkeley, where he got, respectively, a bachelor's and masters degreem lai:idscape architecture, and had worked as a senior planner for natural resources for J y C_art r when he was governor of Georgia. He had ls? worked at Louisiana State Umvers1tym environmental design, and came to UC Davism 1980.

Dawson was also manager of the Putah Creek Reserve, and hada half-time position ir1 landscae architecture as well as the half-time position of Ar ore . p p ls b an to report directly to the Chancellors office, instead director. The Arboretum a o eg. d ch e Dawson felt. "The more of the botany department first, which was also a goo to do anything layers you have above you, the harder it is

169A current pro1·ect Zagory is w or km go n is the cultivation of plants such as gum plants d hke f ' . I nd aesthetically pleasing insects goldenrod, which attract humm g ir . b · d s and bene 1c1 a a butterflies to bring wildlife back mto th e Ar orde tum and re-establish a fuller ecosystem. !ready attract hummingbirds to the California fuchsia manzaru ta, sage, 'Id ear rants an d m.i·Jkweed plants as larval foo d m t e h Arboretum. In the summer of 1999, Z ry was raising nursery and had some Monarch cater pillars fee d'mg o n them. Other insects the Arboretum t i e that eats mealy bugs, an some my f

' fl' C *ypto/a enus*, a ee . • 'd h
wants to encourage are hover' le s, h hip with aph ' d :"J·ecting thei r eggs ms1 et em.
wasps that have a parasitic relatwns August 2000.

170 Telephone interview with Kerry Dawson,

_"Kerry started out with a bang here," Tucker remembered. A significant project, begunm 1986 and completed in 1987, involved a $20,000 grant from the National ndowment for the Arts to fund a Design Arts Competition "for the design and rmproveme_nt of un ev loped lands in the Arboretum." The grant was "used to prepare, prmt and d1Stribute 16,000 posters internationally advertising the competition."[171]

The Arboretum received 750 inquiries, and 350 concept plans were submitted.[172] "Very prominent people applied," Tucker said, and the drawings were on display for several weeks on campus. One of the top three entries was for a hydrozone garden, Dawson said, which is under development in the Arboretum.

During the 1986-87 fiscal year, volunteer support continued to be strong; more than 8,000 hours of volunteer work was done, including 4,842 hours by plant propagators (48 hours on Plant Faire itself), 234 hours by docents in preparing for and leading tours, 205 hours by docents leading outdoor education, and 193 hours in docent training.[173] In the late '80s and early '90s, the Arboretum was being used by more elementary schools and University classes, and use by outside organizations showed the rise of its reputation.[174]

In 1987, program director **Diane Cary** was hired, at first for only ten hours a week, when she had just had a baby and wanted a minor job.[175] Her background is in anthropology. In the 1970s she worked at the Arboretum for one quarter as a student, and remembers typing on 3x5 cards in a dark, dusty room piled with stacks of papers, which she did not particularly enjoy. These days she works three-quarter time.

Like other staff, Cary did not express much frustration about the Arboretum's persistent financial difficulties.

171 Annual Report of the Director, 1986-87.

172 Annual Report of the Director, 1987-88.

173 Annual Report of the Director, 1986-87.

174 According to the Annual Report of the Director, 1988-89: Arbore°:1m Use: 3 bota y classes and botany seed exchange, 1 animal science, 3 entomology courses, 1 env1 onmental_des1gn, 3 environmental horticulture, 1 environmental studies, 3 landscape design & rch1!ecture, 1 land arr & water resources, 1 resource science, 1 zoology. From other cam use : Uru ers1ty of New H am p s ire, h • M" higan State University at East Lansig, Rutgers Uruvers1ty, Ar12ona State University, Lak e Tahoe Community College, University o f N d eva a, C l' f • p 1 t hn" c UC l orru a o y ec , 1 Berkeley, University of Utah State Arboretum, South Seattle Commuruty College Arboretum, and universities in England, Guam, and Canada. Native r ar ens, f" t aruz·ations, ·El Dorado City ·Saratoga Horticulture F a u n a on, G rudr c non-pro Tkorg Tennessee ·The Perennials Garden Club, Sacramento ounty; A b M 1 'chig an-Tree Haven Arboretum, l oy, a 1 orru a , Botanical Gardens, Ann r or, Z' .N them Nevada Native Plant Society; p k S ento· the Fresno oo, or Georget wn ar .' acram , n Elm California; California Ethnobotany for California. Qua_rI'):'hill Botaruca Garde;,h Braille books; California Native Plant Society, San Francisco Flonshcs; West Davis lm c f Garden Boulder, Colorado; Department of Bay Area chapter; Xenscope Demonstra 10n , Horticulture and F oricultu:e, I rae .S t Magazine and Hopkin Winery, Healdsburg, California. Commercial organizations. unse he Annual Report of the Director, 1989-90: utdoo: Ed cation And in 1989-90, accor mg tot with 100 about adults, from 13 schools m Davis, Dixon, Tours escorted 747 children, along y b Ct Woodland, West Sacramento, Winters, and u a 1 y.

175 Interview with Diane Cary, August 1999.

"I jus e joy mywork, even though we're invisible over here" shesaid. ary 15_m charge of educational programs, which includes t;urs for adults school field trips[176] a month '. . Y eveni ng ecture sen es, workshops two to three tim es a quar ter(o n the me s like culinary herbs, Christmas wreath s, and as lic gar d ening , fi ld b f th F d e

tnps or e nen s_ of the Davis Arboretum once a month, and longer ones a few times a year, as well as Fnends programs, membership and events. Technically Cary is also in charge of the volunteer programs, though each staff member has his or her own corps of volunteers, she said.

. Interpretation of the Arborehun collections, which simply means the signs and labels on and around plants, is also one of Cary's responsibilities. For several years there was a l t of vandalism of signs, perhaps don by one person -- signs were broken and thrown m the creek. The Arborehun uses laminated paper labels, which, Cary says, "are not elegant, but they're cheap and they hold up well."177

Another program Cary coordinates is a series for families called "Wild Things," which has monthly speakers almost exclusively from campus, to talk about local wildlife (including backyard wildlife), and sometimes to bring live animals; for example, owls from the raptor center, bats from the California Bat Conservancy, and i.Dsects for the Bohart Museum.

Cary also produces, writes for and edits the quarterly newsletter, and she has proven to be an outstandingly successful grant writer for the Arboretum (see below).

In addition to increasing the size of the Arboretum staff, Damson felt that one of his most important accomplishments was "getting across the Campus as Arboretum idea, and the idea that the whole landscape [of the campus, including the Arboretum] should be an educational resource. A lot of people were interested in these things," he said. "[The Arboretum] needed someone who was a good planner and designer."

The budget of the Arboretum doubled while he was director, Dawson said, and more staff were put on permanent salary, rather than relying on the Friends of the Davis Arboretum or short-term grants. The Arboretum also began to win a number of grants.

"We went into a mode trying to get a lot of grants, and we were fairly successful," Dawson said. Indeed, the list of grants that the Arboretum staff successfully applied for in the late '80s and early '90s is impressive.

In 1988-89 the Institute for Museum Services (IMS) Genetics Resource Conservation Pro am17s gave the Arboretum a grant of $2?07 to do work o ?enetic resource conservation on campus, which included work with *Ceanotltus marztzmus,* a California lilac from the Hearst Ranch in northwest San Luis Obispo County; the California State Department of Education, Math/Science/Environmental Education

176 In recent years there have been about 30 school field trips in the spring, and 30 in the fall, with a d wm·t er bringm· g almost 2,000 childr en to the Arboretum e very ye ar sprinklm g m summer an , . C ·d from a1.1over the Sacramento Vall ey as far as Stockton, Marysville and Grass Valley, . ary sa1 .

177 In 1999, with a grant from the local Glide Foundation Cary was worki ng on educah ona si gns w·ith text and grap hics a bout plant and animal relationships with the help of a student, Emily · d G · old did the research, and Cary the layout an d es1 gn.

15 wold, no_w gra uate rt :; ; "[T]his program, through its Rescue of Imperiled Genetic Resources Collections Project, aware d t reproduce plants of highest priority for Arboretum wit a gran • d and wild-collected status. The status of these plants was propagation based o e dangereR C nservation Plan as part of the Arboretum's Native determined by the ex1stmg Long ange Plant Conservation project."

Annual Direct r Rep 1 88 89 d d the California Native Plant Collection at the University .h t The funds were use

Unit[179] gave $3,000; and the Department of Water Resources Urban Streams Restoration Program, Friends of the River[1]so gave $12,500.

_In 1990-91, small r grants were awarded from within the University by the Committee on ystematics and Collections, Teaching Resources Center, of $500 each anda Coop ra ve Grant f $5,000 for Integrated Pest Management-Implementation and Education m the Davis Nursery.[181] In the same year, the Elvenia J. Slosson Endowment Fund for Signage and Interpretive Displays gave the Arboretum a grant of $15,715 for installation of interpretive signs in eight major gardens, and an application for a grant from the Institute for Museum Services (IMS) for a Conservation Monitoring System was finally awarded, in the amount of $19,727 to allow "the Arboretum Curator to design a data sheet to accept conservation data into a graphic database system."[182]

And in 1991-'92, the Undergraduate Instructional Improvement Fund of the Teaching Resources Center awarded $3,770 to the Arboretum for work in an outdoor classroom, in which "students take data, perform quantitative analyses and write brief individual reports." The IMS also awarded the Arboretum a continuing grant on the Conservation Monitoring System this year.[183] The IMS Grant was renewed through 1993-94.[184]

In August of 1992, Dawson went on leave to work on national parks plans in Indonesia and New Guinea. In 1994, he took a position at the University of Georgia, and today he works in New York City and Atlanta for a computer company, Virtual Magic, in conservation and on-line distance education.

"The Arboretum was pleased with [Dawson]," Barbour said. "Kerry tried to make the Arboretum more visible, with a wider mission, making the campus seamless with the Arboretum.

1992- Present: The Arboretum Continues to Grow; the First Full-time, Non-Academic Director Is Hired; Great Successes Ensue

When Dawson resigned, Roberts was officially acting drrecto until 1998, a osition he had unofficially occupied since Dawson left the campus 1992. The . PA b tum d th dministration decided together to open up a national search to find r ore an e a hi d . 1998 a director and the result was **Kathleen Socolofsky,** who was re m . • .

The search for and hiring of Socolofsky was definitely one of the highlights at • t the Arboretum m recen s according to Burke. Socolof sky has b oost e d mo rale and yea,r . ff th A b tum • kt 91 Ven the staff more wor d 0 hich Burke felt is worth 1t. Th e e ort e r ore o , w „ h 'd Th is ? - . . . . " ill get us where we want to be, s e sa1 . 1s putti ng m to strategi c p1ans w

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[179] Ibid.

180 For stream bank stabiliz tion of Put 1990 91 Cr -e Arboretum and Entomology Department set out

181.Annual Report of the Ouector, s of pest control in a pilot IPM program. No

• • d • rease the e ff t ec ivenes 'd f to reduce pesticide use an me d t tudent with experience in IPM was pa1 out o direct funding for the Arboretum, buat gra ut ;, ursery workers no longer complain of the fund through the Entomology Oepartme td carbamat insecticide spraying has been annoying levels of irlsects, and organoph ::r ;aet:als such as insecticidal soap and enclosed completely eliminated and replaced bys . , pesticide baits."

182 Ibid. The Arboretum had applied unsuccests f e Director in 1979-80, 1980-81 and 1981-82. full several times for IMS grants m the late 70s . th Annual Repor s o and early '80s, accordi ng to e

183.Annual Report of the Director, 1991-92.

184.Annual Administrative Report, 1993-94.

p lanni ng w il l also, Burke hop es ge t th e A b r oretum well beyond the worst days of financial cns1S, w hen Roberts would write overdraft ch ec k to s fr om his own b an k accoun t keep things going.

Socolof sky is the f irst full-tirn e, non- f ul ac d' ty rrector, and everyone seems to agree that she is the best thing that has happened to the Arboretum in years. Like Daw on, Socolofsky feels that publicity is very important for the Arboretum, and she is working hard and successfully with the Arboretum staff to increase funding from the University and outsides sources.

_Socolofsky waseducated at Louisiana State University and in Texas, in ed cahon, and got a aster's ineducational leadership from the University of Northern Arizona. She has had informal education in science. Her last job was in Phoenix, where she worked at the Desert Botanical Garden from 1985 to 1997. There she developed an educational program about the desert environment, interpreting the scientific collections.[85] She is especially interested in the work some museums and gardens have done to make scientific knowledge more understandable and accessible to the public through such educational programs.

"My theory is that the Arboretum is a-lot of things to a lot of people," Socolofsky says. "It involves academic research, public relations, the city of Davis -- it falls between the cracks, because it's not the most important thing to anyone, but so many people have a personal connection to it -- they come here for lunch, for walks, they bring their kids. It's important for the health and morale of employees of the University, but that doesn't translate into funding."

Today the Arboretum is a part of the College of Agriculture, and gets funding from the Provost. The University funds 4.25 FTEs with $200,000, and $100,000 of the grounds department budget goes toward maintenance of the Arboretum. Three grounds employees work full-time, one grounds leadsperson works 20% time, two more work part-time, and one grounds supervisor works about 20% in the Arboretum. 1:he Arboretum now has five full-time and two half-time employees, and the eqwvalent of three and a half full-time students.

Until August of 1999, the Friends of the Arboretum and grants ade p $100,000 for the rest of the salaries, but now, thanks largely to Socolofsky, the University has granted the Arboretum's equests to fully fund Burke's, Cary's and Zagory's positions permanently, and has added $60,000 to the Arboretum's operating budget.

Another major source of funding is the extremely successful Plant Faire, w ch m recen year s grosses $4 0 000 in one day Zagory said. The 25th Annual Plan t Fa ir e iffi u l find took place on October 2, 1999. Zagory tries to cultivate plants_ that ared c t t? but are appropn a e o the Central Valle y which will thrive with moderate or rrurumal watering and without pesticides.

Cul hvars fr om the Arboretum do better than many plants from commercial b ulti t l t horticulture establishments, Zagory says, because the Ar oretumc va esp ans 1:1 soil that 1S.a rrux o san y loam, which is closer to the clay loams natural to the Davis area. Ii h thy're planted", she says. "The scientific reality is that ve w e n e , d bli h "Our p lants '' fi don't want to leave it, so they re har er to esta s plants raised m a ruce arh cia rrux than ours."

iss Interview ith Kathleen Socolofsky, August1999.

One :-Vay Socolofsky hopes to draw more attention to the Arboretum is through the **C Davis Horne Demonstration Garden,** described in the **Botanical Collections** section below.

T he staff find that the Arb tum h h . , , ore as c ai:ged a lot s mce Socolofsky came.

None of [the rest of] us are very political or very good at making a case for ourselves," Cary_said. "People have always valued the Arboretum; they just haven't understood that it costs money to run it. It used to be a lot quieter [before Socolofsky came]. We've always had more ideas than resources."

. Although the Arboretum is becoming more financially stable, it still relies heavily on volunteers, according to Cary. More than 100 volunteers work regularly at the Arboretum, and another_100 or so help out with the Plant Faire and on work days. They ork on tours, gardenmg, nursery work, and some individual projects, like adopting an area of the garden, the library, or labeling.

Volunteers are also members of the Friends of the Arboretum, which continues to support the Arboretum and provide publicity for it in this more secure era. As of August of 1999, the Friends of the Davis Arboretum had 846 members, about 30 of whom live out of state, according to McCoy, who joined in 1980.

The Arboretum's landscape manager, **Paul Graham,** is the newest full-time employee at the Arboretum, hired in November of 1998. Graham grew up in Santa Barbara County and has worked extensively in the landscape business for fifteen years in southern California, Arizona and Illinois, including landscape design, urban forestry, landscape development and tree work. He has an associate's degree in physical science, and he is finishing a bachelor's in urban forestry at Davis in the fall of 2000.

Graham is responsible for maintenance and dev lopment of the infrastructure of the Arboretum, including irrigation, pathways, signs, tables and trash receptacles. He began working for the grounds department in December of 1996, and is now paid by the grounds department but is supervised by Roberts.

"I have two masters, which can be difficult but interesting, as the wants of each can differ greatly," he said.

The Arboretum has always relied, by necessity, on the grounds department for much of the practical maintenance and development of the collections. But grounds, as Graham points out, "has the entire campus to man ge, using set t ols and techniques," while the needs of the Arboretum can be more particular and detailed.

Soon after he arrived, Roberts gave him a half-inch thick stack of paper, which was 1400 requests to do work on various trees, w ch he d do':n to 620.

"There was a twelve-year backlog of work, he said. Nrnety-five percent of it was finding *which* trees to prune." Part of the work was also being "a translator between the Arboretum and grounds," he said. "Directions were verbose and ha d to understand 'remove that crazy limb on the east side.' Grounds need short, conc1Se, clear directions.

G ah amis e grnnr•n·g to address some of the most pers1Stent problems the Arboretum has had in maintenance, including tree-tr g rri?ation. o pare to the rest of th .e camp, us irrigation in the Arboretum is archaic, he said, and he 1s t t d turf t ms d determined to install better systems. For example, large un-au omae syse an inkl hich the Arboretum still uses over mos t areas, are inefficient and not ideally suited to the diverse needs ?f the collections, d am_agmg some. manually operated s p r ers, w plants with the force o f th e spray and with overwaterrng, and also overflowrng onto the paths for pedestrians and bicyclists.

Part of improving the irri ti
the needs of different l t Toga on system involves w tering more carefully, to suit
h G am
arrived he said wa P a ns. e Arboretum's plantin en r am
17o /4 d h . g success ratew
1 ¼ ' s an e is pleased to have developed new areas with a success
rate of 9 50 o.
th st
In la two yea s, he has helped to develop two areas at the east end of the
Arboretum,m the Au str alian Collections and the new UC Davis Home Demonstration
a.rde next to the Davis Commons. Both areas are moving toward automated
IIT1ga on sy st ems that work at night, raising sprinkler heads over the plants and
sp:aymg them from above, without much overflow and good soil penetration, Graham said.

Arboretum Neighbors

When the Arbore was founded, it was at the extreme southern edge of campus, and was long perceived as an outlying area; thus lands adjacent to the Arboretum w re assigned to such things as storage yards ringed with chain-link fence, garages, parking, recycling and the sewage treatment plant.

It seems unlikely that most of these facilities will move any time soon, but the University's 1994 Long Range Development Plan, under Section 4.11 Visual Quality/ Aesthetics, did declare that the Arboretum was the single most important natural feature in central campus and an important visual asset to be preserved, and the 2005 LRDP continues to emphasize "Campus as Arbqretum" as a landscaping theme to unify the campus. At the least, the Arboretum would like to extend several fingers of plantings through present barriers between it and the rest of campus.

Most of the buildings that border the Arboretum stand with their backs to it, as Burke points out, which is a contemporary extension of the attitude toward the creek that led it be used as a dump in earlier years. "When you go for a walk in the Arboretum, what you see of our neighbors are back doors, locked fences, and garbage cans," she said.

As the campus has grown toward the south, the Arboretum has to pay considerable attention to the activities of its neighbors. Situated between the Division of Nutrition and the Department of Environmental Healthy and Safety on La Rue Road, are the so-called Temporary Buildings 32, 35 and 36 (built in 1915), which the Arboretum uses for its headquarters, offices, greenhouse.[186]

The influence of the complicated neighborhood on management of the Arboretum's collections cannot be overstated. Non-university neighbors include I-80 and State Highway 113, Aggie Village (faculty and staff resid_ential development), the Davis Commons shopping area, businesses on Arboretum Dnve, and the Southern Pacific Railroad.

Eight parking lots and 34 separate facilities m naged by 26 administrative., academic recreation and maintenance departments directly border theArboretum. the Alumni d Visitor's Center (Cal Aggie Alumni Association); the alfalfa fi:lds and the Cole facility barns of the Animal Science department; the ASUCJ? Cal Aggie and

pracli ce ru·ty k Hall and the administrative annex; the Ch ild and Family Study
M
ac ; ra . . . .

C. · 1 des certified daycare and research facilities), the drama
t (hi h
c me u il . h d
en er w , · th t theater shop and Wyatt Pav 1 0n; t e a • • tr ti.
m1 m s a ve
d epartment s main ea er,

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b ·1d· e dormitories for unmarried farm workers, and in the 1960s
186 To start out with the UI mgs wer .
they were part of the Primate Center, Roberts said.

headquarters and waste handling facility of the environmental health and safety department; the departments of environmental horticulture, music, and grounds, the barns yards, polo field, cross country track, and horse pasture of the Equestrian Center (upwmd); the arr con ihonmg steam plant; an underground reservoir; the waste water treatment plant; the fine arts sculpture yard; the campus garage for Fleet Services; Wyatt Snack Bar; Solano Park (graduate student housing); the NIH laboratory of the Nutrition epartment; e st?rage yard, shops and administration of the Physical Plant; recreation fields; the Uruversity (faculty) Club; the Unitrans Bus Barn; King Hall of the School of Law; and the Schools of Medicine and Veterinary Medicine.ts7

In general, the Arboretum enjoys a good rapport with its many neighbors, and tries to cultivate collections that are useful to academic departments, Burke said. But it is difficult to stay current with the development plans of each neighbor, and the Arboretum staff is not large enough to maintain constant liaisons with all neighbors.

Building projects have often appeared on or within Arboretum borders without notice or coordination with the Arboretum, such as the recent installation of a gas pumping station for Unitrans buses, which made an unexpected addition to the Mediterranean Collection, Burke said. Often Zagory does last minute work to salvage plants that will be affected by an unforeseen project. Some neighbors incidentally pollute the Arboretum. An oil spill into the Arboretum Waterway was reported on July 27, 1987, in *The Davis Enterprise.* A 55-gallon drum in Solano Park was emptied into a gutter, which empties into the creek, killing carp and mosquito fish. The University contracted a company to clean up the spill with absorbent pillows.[188]

The most serious of routine pollution problems include the soil and water pollution caused by high nitrogen run-off from the Cole Facility animal barns, the large amounts of dust at the west end of the Arboretum from the corrals at the Equestrian Center, and exhaust and gas fumes from the Unitrans bus barn and Fle:t serv:ices campus garage. Odor pollution from the sewage treatment plant and lift station under California Avenue bridge, which pumps all the untreated sewage from south camp1:15 across the Arboretum Waterway, should fortunately cease this year when the plant is moved south, Burke said.

The University's 2005 Long Range Development Plan (LRDP) includes several ro·ects that will affect the Arboretum: a new building for th: Department of m!ironmental Design, a complex of buildings for a Perforrnmg Arts Centera, Ho el . and Conference Center at the campus entrance on Old Davis Road, and new dorrrutones fr th f V • Medicine also has expansion p ans. Burke said. The School O etennary f b d and has always had to defend

TI:1e Arboretum has noh ard:d-r st a= .U: epartments. "If Vet Med gets itself agamst encroachment from O er Pd fB k aid "It's a very weird situation, but money, they will take fifteen cres 0, ere:e rbo etum wants to plant a we've always been treated this :'ay. er is interested in installing a cross country track. hydrozone garden, the Equestnan Cent

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187 Information pr vided by Mary B ; Arboretum.

188 Article clipped m the Scrapbook

The Future

ch .h One of the strengths of the Arboretum staff has always been their tendency to

ens pfunipe . reams of rmprovmg and expanding the Arboretum well beyond what prese nt dmg co uld suppo rt mak" 11 mg sma movements toward progress whenever poss ble, and th t 15 the case today more than ever, with the exception that funding is commg more qwckly•.Socolofsky has encouraged the staff to imagine the ideal for the Arboretum and then find ways to fund it. The following are some of the Arboretum staff's ideal plans laid out by Burke.

For the Headquarters, the Arboretum would like a public meeting space with a class oom or lec e hall, and an impressive and beautiful high-ceiling hall entrance, openmg to the Wmter Garden. While the plant sciences have long found the Arboretum useful, Burke and others want to make appeal more to the humanities. The Garden of the Humanities: a Proposal for Collections in the Mediterranean Section includes plans for a Painters' Garden, which "in its very structure emphasizes the fleeting play of light on color in the open air." This garden would accommodate art students who would come to paint, and might include a small structure to store easels and paints. A Poets' Garden would have signs quoting "fragments from evocative texts near plants they mention," and would provide "a gathering place for poetry readings." Poems could be "walked through, or considered in quiet alcoves.

An Amphitheater for Music and Dramatic Arts would accommodate performances, graduates, awards events and weddings, with plants mentioned by Shakespeare and Aristophanes, including woodbine and lime, plane and ehn trees, and other playwrights. A Philosophers' Garden would have a courtyard with plane, poplar, olive, and bay laurel trees, which Plato's and Aristotle's strolled among and so were called the peripatetic philosophers. Hippocrates also taught his students in the shade of oriental plane trees. Plants mentioned by Lao Tzu and Confucius would also be included. This garden would adjoin a Garden of History, focusing on the origins of western horticulture and with plants that appeared in Greek and Roman Garden, including sycamore (plane tree), fig and mulberry, which was mentioned as a shade tree in the first actual record of a garden layout in Egypt in 2000 b.c.

There would-also be an Herb Garden focusing on medicinal and culinary plants and plants in the religious tradition of Christianity, Judaism and Isl m. Tuer would also be an Italian and a Moorish Garden, "paradise garden of the Mideast, with cool shade, running water, fruit and scent inside, protective wall, to co1:te_mp ate God and revere nature. Geometric paths, gravity-fed channels of water for 1mgation, garden f poetry and art in Islam. A Mediterranean Wildflower Meadow, a Gar en ?f il:e Iberian Peninsula and in the Asian Gardens focusing on native plants and cultivation m Central d East Asia. The Wedding Garden would have myrtle, which represents love and peace, and pomegranate for fertility.

A Kitch D o nstration Garden would provide instruction in basic techniques f ful end em• including the design and installation o a n p i m gati on or succes: gar er:img l sses tree planting and care, recycling garden and kitchen system, wmter prurung e a , waste and mam 1 ompost systems the prepar ation o ower arrangemen s tau u ng s unp e c .t ths A Garden Cafe would provide a fundmg source. an d wm er wrea f l th at cou ed ouh e . by visitors. Plants wo uldb e c hosen for their odiferous quabties and the soun st ey make in the wind, and would be accompanied by signsm B ra1e.

A Garden of the Senses would have raised beds o_pa ts Id b t ch d

Landscape manager Paul Grah ama so hada lot of ideas for practical improvement of the Arboretum.

"I came here two years ago with the in tention f rmprovmg the aesthetic value of the Arboretum, and I was not fully aw are h ow arcane it was h d Th punst mmdset at the helm [of the Arb tum]f , e. sa1 • ere's beena detriment of the Arboretum itself." ore ora very long time, to the benefit and

Graham feels that the University ad • • Arboretum himself includedw t h mn:115trahon and some members of the low water use plants which , an lus p antings and variety w hil es till emp h as12mg

"If you rea11y want a Mediterranean look d d newer watering systems would maintain better throw away 90% of the plants ,, he said "Aroun'd tfus not£green[/oud have to Mediterranean landscape is olive drab brown and tan W o tryve r ate August]a

"Th l f • e re mg to counteract that ere are a ot o options that haven't been considered. This is a great research university that se_es the Arbor as_ the crowning jewel of the campus. So do students and the commuruty. The administration would like to see it be more palatable to the ye yea round. 'W_e have a variety of plants, which with care could give a very rmpress1ve color dISplay."

However, r asaid there are $3.5 million repairs to be done, to the banks of the Waterway, the rrngahon systems, buildings, lighting, and pathways.

"To really deve_lop a well-maintained Arboretum would free up time for people who spend so much of it setting up irrigation systems," Graham observes. Instead of g around moving sprinklers and turning them on and off, they would have more time to maintain plantings.

Graham estimated that Arboretum uses roughly 1.5 million gallons of water per year. At present, irrigation systems put out 20 gallons a minute, six hours a day, five days a week. The Arboretum uses well water now, but would like to get recycled water from the University's waste water treatment plant eventually. The UC Davis Demonstration Garden at the Davis Commons will be using recycled water.

"The newer irrigation systems will be far more efficient than the present methods, but in the future, more water will be used to irrigate the entire arboretum at a calculated rate with minimal waste by not irrigating pathways," Graham explained. "At present, the irrigation systems do not cover all the collections, and the newer systems will." Though with newer systems and fuller coverage of the collection, water use will probably increase, it should be with less waste.

To avoid the problems of stagnant water, mosquitoes, and unsightly algae blooms, everyone would like to see the water in the Arboretum Waterway moving, and there have been promising experiments with recirculating water in the east end in the summer of 2000. But it will probably be five to seven years before the entire Waterway is moving, Graham estimated, to plan how to deal with erosion and the volume of water that would be going out of the Arboretum.

When the water is circulated, "we'd be movmg 10 million gallons through every 10 days, out into the watershed, through the pumping station into the South Fork of Putah Creek," he said. "Erosion would be a problem, as, ell a_s low volume for long periods of time. But the waterway is our central feature, and 1t makes sense to maintain it well, he said.

The banks of the Waterway were stabilized with gabrnns, which are now d t · tin' b G ah 's predecessor, Roger Edberg. The banks could be more e enora g, y r am • d hich Id b h'dd 'th permanently stabilized with concrete, Graham sa,i w cou e ı en w1

plantings and placed at different hei ht thr th
another alternative that would be i tn: .;ughout t e Arboretum. Terracing is
All of these plans would wi e Mediterranean theme.

reqwre more money of p Arboretum
has augmented its small t t course. or years the
and endowments, and some help fros a o e ating budget with grants, bequests, gifts

Institute of Museum and Libra S 11: ed e eral government. For instance, the
$110,000 to the Arboretum thre7 r;;cesawa e a two-year operations grant of
Socolofsky seesh mos ly while Roberts was acting director.
er main proJect as finding more fund. f th A b
Two major endowments for • d · d• . g or e r oretum.
interest-- the Mary Wattis Bin iv1 ua1 gardens pw':'1des some annual income in •
. rown garden funds, which can only be used for native
i o o:ield $SO,OOO a year in interest, and the Storer garden funds yield interest of

"People want o give restricted gifts," she said, and the Arboretum lacks two maJor sources of funding that museums draw on: admission fees and membership

. The answer to the funding problem, Socolofsky feels, will be to raise a majo operating endowment. To g t an income of $2 million a year, for example, the Arboretum would need to ra1Se $40 million. A handful of successful university gardens operate on endowments, such as the University of Minnesota Landscape Arboretum the Cornell Plantatio1:5, the Arnold Arboretum at Harvard University, the Red Butte' Arboretum at the Uruversity of Utah, and the gardens and arboretum at Swarthmore Co ege.. Socolofsky does not consider any of the arboreta or botanical gardens in Califorrua t b mode for this Arboretum. Berkeley's botanical gardens will soon charge adnuss1on, which she would like to avoid for Davis.

What's sure is that, with its largest staff and biggest budget ever, the Arboretum will grow and change considerably in the future.

The Botanical Collections and Gardens1s9

The Arboretum contains California native plants and plants adapted to Mediterranean-like climates in other parts of the world, where warm dry summers and rainy winters predominate. Many of the plants in the Arboretum can tolerate heavy frost, which is rare in Davis, occurring approximately every 40 years. Winter temperatures can drop to 14°F, and two recent freezes occurred only 18 years apart, in December of 1972 and 1990, most seriously damaging Australian trees, acacias and eucalyptus. Thus some cold hardiness is a.fl important characteristic of plants chosen for the Arboretum, which must also be tolerant of both drought and extreme summer heat, when temperatures can reach 120°F. In the early years of low maintenance and neglect, the hardiest, most drought-resistant plants in the Arboretum have done best by default.

At present, the Arboretum's collections contain about 21,000 specimens of more than 4,000 taxa for use in a water-scarce environment. There are at least 56 plants growing in the Arboretum that are rare or endangered, including six spe ies of *Ceanothus* (Hearst's, island, maritime, Napa, o nterey, wa t-ste ed); _1s!and mountain-mahogany; five species of manzaruta (Bakers, Vine ill, Pres1d10, Paiaro, and shagbark)· five species of cypress (Santa Cruz, Tecate, Gowen, Pmte, and pygmy), two of buckwheat (San Clemente Island and large red), two of flannelbush (Pine Hill and

1s9 Inf on ti f th 1s ti o n was provided by Roberts and Burke, including maps and summaries of the Arboretum collections and proposed or sec collections.

Mexican), three of barberry (Higgins', Nevin's and Santa Cruz), two of bush mallow (San Clemente Island and Santa Cruz Island), two of pine (Monterey and Torrey), two of sage (fragrant pitcher and Munz's).

Many of the plants growing in the Arboretum are not available in commercial horticulture, though some are sold at the Arboretum's Annual Plant Faire. About 70 of the Arboretum's 125 acres are developed with horticultural themes. The remainder is grouped by taxonomy, geographic origin, or agricultural areas used by other University departments. In the future, Arboretum lands will be developed in the same manner.

As Roberts said of the Arboretum "We have a natural site, modified by 200 plus years of European influence." The fact that the Arboretum is called an Arboretum and not a Botanical Garden is somewhat arbitrary as far as Roberts is concerned. Trees are planted in arboretums, and shrubs and herbs are planted in botanical gardens, and smaller plants are planted in arboreta, but the designation of a botanical garden is generally more prestigious and was reserved for that reason, in Roberts' opinion for the Berkeley and Los Angeles campuses.

"We are the first of the University of California's arboreta," Roberts pointed out. In fact this is one of the older arboretums in the western U.S.A. For example, we are a year older than San Francisco's Strybing Arboretum."

The layout of the Arboretum is somewhat unusual, even progressive given the current fashions in botarucal gardens and ecology, in that most of the collections are planted according to geographical origin, rather than according to taxonomy. Most newer arboreta and botarucal gardens are arranged this way now. The Arboretum is also quite unusual in that it is long and narrow, and its property lies along a natural topographical feature, the old channel of Putah Creek, and in that it contains a considerable number of wild and cultivated plantings that precede the existence of the Arboretum and even the University. It is also unusual in that it is unfenced.

"Since we serve the largest plant science institution in the world, we try to grow whatever we can -- plants that do well but not too well. We try to be all things to all people, since we serve a great university in its full definition," Roberts said.

When a plant comes to the Arboretum, it is recorded in a log book; an accession number is assigned, and its Latin and common names are recorded, as well as its family, whether it is wild or cultivated, donated by another garden or collected in the wild by so-and-so, whether it is a California native or not, along with a brief physical description and other collection comments -- type and number, cuttings, number to plant, intended location and ideal conditions of light and temperature. In the past, the staff, particularly Roman Gankin and Dick Hildreth (see above, 196-5 1971 section), often collected seeds from the wild.

The plantings in the Arboretum have come from far and wide, often from friends and acquaintances of Arboretum staff, from UC Berkeley Botarucal Garden, UC Santa Cruz Arboretum (a source for plants from Australia), nurseries all over the state, and from gardens worldwide through the international seedexchange. The motto of the seed exchange is *pro mutuo commutatione* -- for mutual exchange -- and Roberts cited several examples of the Arboretum giving away seeds or plants to people who cultivated them and later, when the Arboretum had lost the original source, gave back to the Arboretum. James Lockman for instance, got a Salvia (sage) with specimens back to the Arboretum which it then lost and went back to him for seeds later. blue flowers from the Arboretum

"Most horticulturists are glad to sh „R .
lost and regained that way." are, oberts said. "They realize things can be

California nurseries, gardens and arks h
from and trades seeds with include· W tp t. at th e Arboretum has received

plants

East Bay Regional Parks District andG es;m HillsRare_Plant Nursery in Occidental,
Co the mfl F arms an d N ursery in Oak Grove, the Saratoga Horticultural Foundation ar, an th e Botanic Garden at Tilden Park,

Ranc ho S a n t a Ana Botanical Garden Yerba Buena Nur an C '
. ' t h ' ' sery M ateo ounty and
· S Nevin Srru .s gardens and nursery in Santa Cruz
m
Cbunty.

In Arizona, the rboretum has ties with the Mountain States Nursery in

Glendale, Star Nursery m Tucson, and the late Rodney England' s e d en m .
pn va · t Tucson.. gar

lndi:7iduals (and their gardens) who have contributed plant material to the Arboretum mclude: Roberts's grandmother's garden near Granite Station, in the foo north of Baker field in em County; his parents' gardens in P uma Valley in San Diego County and m Sun City West in Arizona; Ruth Storer; the garden of Brother James Lockman, a former student who worked in the Arboretum and later joined the Franciscan order at St. Elizabeth's in Oakland, and his parents' garden in Lucas Valley; the garden of Betsy Clebsch, an expert in sages, in the Santa Cruz mountains; the late Margaret Williams of Sparks, Nevada, a retired schoolteacher and gardener who founded the Northern Nevada Native Plant Society; Wayne Roderick, horticulturist at the Berkeley gardens and later at Tilden; and Roger Raiche, also at the Berkeley gardens.

Descriptions of the Arboretum's present collections, more or less from east to west, follow. Weekend tours of the collections are offered in fall, winter and spring on most weekends.

• The **UC Davis Home Demonstration Garden** has recently been planted in the Davis Commons, next to Border's Books. The land for the demonstration garden, worth
$50,000, was donated by Mark Friedman, a local developer, and the garden is a jo t venture of public and private interests. The site may be available for rental, or wine tastings for instance. Nursery sales will also be held there. The demonstration garden, Socolof ky said "will educate amateur gardeners about plants, horticulture practices, and garden design appropriate for the Central Valley. We' e.taking the best plants, those best adapted to the region. There will be classes, exhibits and rograms_ for the

• t lly friendly gardening. It wi l l
average homeowner, to teach them envr ronmena
be a is no otaruca ga ' Th
· b • l rden for Central Valley plants.
regional resource also offer instruction on 1PM, integrated pest manageme t.
The arboretum will
e

plaza in the arden is a venue for spec al even d t! th a;:: :: t:it:::;:: ::
labeling of plants.. Some f the plantsm :g uince, otentilla, manzanita, olive, forsythia, rose, Chinese fringe trees, flowermgl ql depr and Ceanothus
. d lil chita pa, aven ,
barberry, ISiand bush poppy, ay y, d fr th eastern boundary of the Arboretum

The **Australian Collections** exten 60 trees that were planted sometime
to Old County R ad bridge, with matur :s as planted in the 1950s and later.
before the founding of the Arboretun:• li genus the trees vary from tall,

erect . This native

With more than 50 speci es o small er t

specimens to broadly sprea mg . th 'bbn gum *(Eucalyptus v1 mz na t s* , pee s

camphor and the tan bark of one valpety, dey w hite bark beneath. Bottlebrush

off in ribbons in the swnmer to revea *l*) 1.;ne the path near the old bn dge.

(Callistemon) trees and honey myr es tl *(Mela euca* .... Australian plants grow old

among er

flowering Across the creek, recent p anttngs l of

Plantings from va. rious reo$_{o}$-ions of the world wi'th Med'it erranean CLllua tes. Extensi•ve d velopment of this _area is expected because a new housing development, Aggie Village, has been built on adjacent land and a new campus bikeway will be put in to
connect the Arboretum to south Davis. Some proposed additions to this area include a Sustainable Landscape Garden and a Children's Garden.

. West of **Old County Road Bridge** is a small but striking taxonomic collection of **Encaceae,** members of the heath family, which grow well in acidic soils. This area was plant d_in e 196 s. bo the north and south sides of the creek grow specimens of the d1S ctive Califorrua native manzanitas *(Arctostaphylos),* with pretty reddish bark and typically small pale green leaves, which occurs in chaparral regions throughout California. Manzanita is Spanish for "little apple/' which refers to the mealy berries that can be made into a cider or jelly. Bearing ivory or pinkish bell-shaped flowers, these shrubs accompany related trees in the family, the native California madrone or Pacific madrone *(Arbutus menziesii)* and the Turkish madrone *(A. andrachne).* The thin, elegant limbs of both manzanita and madrone are characterized by exceptionally smooth, reddish bark that peels annually. Mediterranean heath shrubs are also planted here. A large old Fremont cottonwood, native to the site, shades the north bank in this area.

The Weier Redwood Grove is one of the largest collections of coast redwood trees *(Sequoia sempervirens),* now more than 50 years old, outside of their native range. These trees, which are famous for their height, were named for the Cherokee teacher Sequoya, who devised the alphabet for that language. Sempervirens is Latin for "always green." It was planted in 1941 and 1942 under the direction of T. Elliot Weier, to whom it was formally dedicated on May 14, 1969, when Weier was professor
emeritus of botany.

Specimens of the giant sequoia and the deciduous dawn redwood, which was thought to be extinct but was rediscovered in China around 1945 bya Berkeley professor of paleontology, also grow here. An unusual colle tion for inl d California, these tall trees create a shady, cathedral-like atmosphere. Willows, red osier dogwoods, rushes and other shade-loving plants native to the California redwood forests form an
understory in this grove.

In the **North Coast Area,** across the creek from the redwood grove, an array of characteristic trees of the mixed evergreen woodlands of theCalifornia's north and central coast grow, first planted in the 1940s and added to in the 1970s. An unpaved footpath winds through more redwoods, California bay, Port Orford cedar (Lawson

cypress), which has ne w foliage ofa metallic blue and is often used as a formal hedge. 1 • th Big-leaf maples and willows that turn yellow in autumn reflect attractivey m e c ee• Tall tree-like specimens of the evergreen Catalina cherry grow at the east end of this area.

One of the Arboretum's four endowed co 1ections, • th e **M ary Wattis Brown** . .

Gar de n of Ca 1 om1 nds from th e Wyatt Pavi li on deck to M ra k B n 'd ge. B rown wasa

a tration, and exte of the founder of the Utah Construction Company, later native of Utah and daughter D She left Utah and settled in Berkeley

U tah ti 1 on a, which built the H oo ver a m . T f B r o w n's daughters have also contributed to the ,

Int ema

where she got her doctorate. woo

endowment, Jane D. una way and Helen Brown Jarman.

The garden features drougd ht-tolerant species appropriate for landscaping aswell eciesto educate the public about habitat

as a n ber of rare_and endang re iological diversity. Some of these plants were
protection and ex situ conservation 0

planted before the endowment, in the 1930s. The Garden mcludes an extensive collection of Ceanothus species and · ulti s.

Channel Islands, anda planting ofbc ;ars, many lants native only to California's wild. Many of the plants are displa c ?1' ses native to the site which are rare in the illustrate adaptation to particular e:Veiro e broad geographic r habitat groupings to oal of instructing the publi · c m environmentally ap nts. In accordance with the Arboretum's gardening, there is an emphasis in this ar pr?pnae orticulture and available in the l:ative plant nursery tra e.den on particularly fine cultivars that are

Along with the Ruth Risdon Storer Ga d (b 1) • be developed asa site for horticultural trials en set e o w this garden continues to the Central Valley climate d d o ew Pants to determine their value for cultural techni , an asa e onstration garden illustrating landscape design, 'dW ques and plants appropriate for easy maintenance and low-water-use in the an est.

The Ar oreturn plantings extend out near Mrak Hall, which is named for former Chancellor Emil Mrak, a champion of the Arboretum. Mrak presided over the greatest grow m e camp - In his time, student enrollment from 2,000 to 11,000.190 Mrak, who was from e Midwest, liked trees "that worked all year," Roberts remembered. On Arbor Day m 1969, an evergreen was dedicated to him, and 40 redwoods were added to **Mrak Grove** in February of 1975.

Mrak Grove is situated in an open landscape of lawns, sweeping paths and planting beds. Some of the trees here dated from the 194Os and 196Os. Here there are plants from eastern Asia, which require regular irrigation in the summer. These include flm ering ch rries, c abapples, magnolias, and Chinese pistache and ginkgo trees, which show impressive fall color. The pistache *(Pistacia chinensis)* is a deciduous ornamental tree whose leaves tum bright red in fall. In China, the leaves and young shoots of the pistache are considered a delicacy. Flowering apricot, forsythia, and rambling roses border a pond, and coast redwoods shade walkways

There are also Mediterranean cork oaks *(Quercus suber)* here, trees with deeply fissured bark, which were planted during WWII to ensure a supply of cork in case European cork should become unavailable. These cork oaks, which tan live up to 500 years, have now grown up into a mature grove. A grove of the rare Guadalupe Island cypress also grows here, with an understory of other plants native to the Channel Islands of southern California. The Guadalupe cypress whose death Gankin and Tucker so lamented was replaced by new ones from the Arboretum nursery, grown from seed collected on Guadalupe Island by Bill Libby, a professor of forestry at UC Berkeley.

The **California Foothill Section,** begun in the 193Os, features a selection of woody plants and trees that occur on the low to mid-elevation slopes of the Sierra Nevada and the Coast and Transverse Ranges of California, such as foothill pines *(Pinus sabiniana),* which have heavy ten-inch cones and gray-green needles in bunches of three and generally sparse foliage. Native Americans traditionally gather the seeds of these pines for food, and in early summer they roast and eat the soft core of the green c ne. Some shrubby representatives from the California Islands and the coastal mountams are also cultivated here.

This collection is at its best in early spring, when the fragrant blue flowers of the California wild lilac bloom, as well as the bright yellow flannel bush*(Fremontodendron)*

190 Accordıng to article in *The Davis Enterprise,* March 10, 1969. Clipped in the Scrapbook of the Arboretum.

and the cream-colored tassels of Garrya p ul

planted here exemplify various adaptati o op a r fort e ch' g, many of the species t th a m

rainless summers of the California foo s . e ot, dry conditions of the long eriodically run through these dry lands s A, tmth particular to this wild fires that
Collection of native gooseberries and curr ant h . sec on l s an extensive

chaparral and golden currants and th . s, sue as th e Catalma, red-flowering, from golden yellow to pin k redm 5 e lerra gooseberry . With fl ower co or rangmg and some fall color, these plants add year-round whi tets p m y b th gb en: l esm summer,

large o l valley oa , some that may be more tha n 400 years o ld d omm ate this co11ection.

The **American Deserts Section** is one of the older collections, partly planted in

the late 1930s. It fea tures tre es and shrubs native to the de ser t s o f sou th em C a lif orru a

and the sou west, ilh. strating the many adaptations that evolved in plants to endure long dry penods. Typical plants of these regions include cacti, the mesquite *(Prosopis),* creosote bush *(Larrea),* bladderpod *(Isomeris arborea),* and the California fan palm *(Washingtonia filifera),* which has long-stalked leaves that bend down when mature to fo a p tticoat o: thatch, and is native to oases in the deserts of California, Baja Califorrua and Arizona. At the west end of this section, an old grove of native western redbuds displays bright pinkish-purple blossoms in spring near the California Avenue bridge, attracting honeybees.

The Conifer Grove was originally planted in the 1950s, and covers the south. facing slope behind the Arborehlrn headquarters. This collection includes nearly 100 different species of conifers not native to California. Among the many mature trees are ten species of *Callitris,* the cypress pine of the Cupressaceae native to Australia and Tasmania, as well as cypress trees from Europe, Asia, Mexico and the southwestern U.S.A. Firs *(Abies)* growing here include the Spanish fir, cµ1d European silver fir. The Cedar of Lebanon *(Cedrus libani),* famous from historical and biblical references and native to Asia minor and Lebanon, does well here. This cedar, cultivated since the origins of western civilization, supposedly provided the wood and spars for Phoenician ships and the massive timbers of Solomon's Temple. Pines include e Hin:alayan white pine *(Pinus wallichiana),* a soft-textured tree, and the lacebark pm *(Pmus bungeana),* native to northern and central China, named for the bark h1ch akes off to reveal smooth, silvery branches and tnmk. *A* collection of dwarf conifers swtable for home landscaping is also planned for this area.

In front of the **Arboretum Headquarters** grows a grove of Lo don plane trees or

sycamores *(Platanus hz spanz ca),* the h y b 'd n o f th e e astern North Amencan and eastern

Me ·t dı erranean p1ane tr ee. The lobed toothed leaves, paired seed balls, and blotchy pale fbark distin0 1 ic::h this hybrid and its progeny demonstrate the genetic segreg tion o fan later generations. Nearby stands a coast re d woo d. In front of TB-29 1s a Califorrua palm. Across the creek from the he c liforrua c d o e e rters is a **Valley Oak Grove,** with large old oaks spreadi ng over toyon, a qufa1b s lderberry California hibiscus, and buttonwillows, among other gs. grow along the path here and a

mapdearroyo willow at the edge of the creek

planting of sedges and rushes, mcludmg d ::al uses of native plants. *A* large provide

teaching material for classes on tr; f t is area, and at the east end, island California sycamore stands at theweS en of ast live oak. Aleppo pines, planted mountain

mahogany grow nex t t o a grove o co

before the Arb oretum was founded ls . g in thi .
. , are a o growm

trees, this section was planted in the d s area. Aside from the older
s an 1970s

The **Southwestern American andM e ican Area** features plants native to areas that get summer rainfall in the cordill

West as far south as Guatemala (Af eran region of th e North and Central American
birches.) A grove of Rocky Mountain bi ew exceptions a J
Guatemalan walnuts shade the water B ooh ma re errusa msage and European e cree , Montezuma cypresses and
Mexican pines and cypresses. Near the !d e of ples and Arizona pmes grow near

of salvias and Texas rangers *(Leucoph llu :)* : e area 1 ecies and horticultural selections
collection. Bladderpod coversa hillsi'de m this ngtht reds, corals, and blues to the
contains pieces of the old administration buil . .b 0th . . urnp ie an sti

ShieIds Li rary. er p1ants m this a th dmg at occupied the site of the present

• I d chi. .
.. rea me u e talpa, Ar izona rosewood box
elders, ages, lilies, evergreen, Philadelphus and jojoba. A massive gnarled v lley oak of considerable age, native to the site, also grows in this ' area.

The Eric E. Conn Acacia Grove, south of the horse barn, was begun in the 1960s. 1:'e Grove was named _for Conn, a_retired professor of biochemistry at Davis, to honor his work n the defensive production of cyanide in the genus Acacia. Conn, a member of _the National Academy of Sciences, still lives in Davis and has been active in the Fnends of the Arboretum, serving as president several tirnes.[191]

. ost of these acacias are from Australia (one is from Chile), which bloom in spnng_with flo ers of_many shades of yellow. Originally planted as a research coll:c n for bi chermc_al studies, this taxonomic collection of *Acacia* exemplifies the vanability of a single widespread genus that had extended into many habitats and now possesses distinct fonns of leaf type and habitat preferences. The blackwood acacia *(Acacia melanoxylon),* an Australian evergreen, has leaves which are actually enlarged and expanded leaf stalks. It is used in the building of furniture, boats, and musical instruments. Many of the species in this genus, familiar to California gardeners as the acacia, mimosa or wattle, are susceptible to frost; a fre_eze in 1990 killed some 90% of them. New hardier species, mostly acquired from plant collectors in Australia, have been added to the collection recently to replace the lost specimens.

The **Sierra Woodland** area is one of the newest collections under development, planted in 1996 near the old reservoir east of Putah Creek Lodge. Older trees planted in the late 1930s include Jeffrey, Coulter, and ponderosa pine, and incense cedar and California bay and cypress, all native to the mountains of California. The Coulter pine has the most massive of all pine cones. The incense cedar, a durable wood used to make pencils, has small cones that look like duck bills when opened. The area is designed to replicate a mountain forest community in both species and the natural spacing arrangement among plants. A major entry to campus is the southern boundary to this collection, marked by flowering plants in the University colo s of blue andgold: including California lilacs, fremontia, bush poppy, gold-berried toy ns a_nd various springtime-bloomingbulbs. This area includes some of the old_est historical and archeological sites in the Arboretum, especially the old reservoir from the1880s, the Chinese settlement site the Benicia Road trace, etc. (See pages7- 8.)

The Armstrong,Walnut Grove and Putah Creek Lodge lie_just across the creek from the Mediterranean Section, the lodge on a large lawn set agamsat backdrop of California black walnuts *(Juglans hindsii),* which have leaves composed of 15 to 19

[191] According to Tucker.

narrow leaflets. These walnuts were planted in the 1870s by pioneer Robert B. Armstrong. (See page 9.)

Also near this area, coast redwoods frame an amphitheater above the pond. Behind the walnuts stands a venerable old valley oak, which used to occupy the median of Highway 40. This great oak shows the scars of a case of freeway blight, as Warren Roberts put it: over the years several cars in the west-bound lane of Highway 40 hit it and tore off big patches of bark. This section contains more historical sites, including the location of the Pony Express station and oldest well. (See page 8.) On January 26, 1976, a small grove of coast redwoods beside Putah Creek Lodge was dedicated to Bert Evans, a printer on campus.

The South American Section, just north of Putah Creek Lodge, is divided by the creek into two sections: plants of Chile and the Andes on the south bank, and plants of Argentina to southern Brazil on the north. The Chilean section is under development with species from the Mediterranean and temperate climates of that country, which is sometimes called California's twin in the southern hemisphere. Lily-of-the-valley trees, with their ivory bells, are thriving here. The Argentine collection includes *En;thrina crista-galli,* the national flower, as well as lantanas, salvias, zephyr lilies, and cannas.

The **Mediterranean Section,** which was first planted in the 1980s and will undergo further development, contains plants from the Mediterranean basin of southern Europe, north Africa and the Middle East. Plants in this section are displayed along paths that look down on a lagoon and allow views of the Coast Range. Special features include the rare Sahara cypress, an allee of olives, and plants from islands in the Mediterranean and the Canary Islands, and a grove of Aleppo pines (named for a city in Syria), which have dense, asymmetric crowns with yellow-green needles in clusters of two, and abundant, four-inch-long cones. Aleppo pine is an important source of turpentine in the Mediterranean.

Olive trees *(Olea europaea)* have been cultivated since ancient times and were brought to California from the Mediterranean, along with figs and grapes, by Franciscan fathers in the 18th century. The fruit is inedible without treatment.

Culinary and medicinal herbs also grow in this area, including the traditional Mediterranean herbs such as sage, rosemary, thyme and oregano. Further developments of this section are planned for the upper terrace of the site. Among the proposed developments are a series of thematic gardens: a formal herb garden, a Moorish garden, a wedding garden, and a Humanities garden displaying plants prominent in philosophy, poetry and the arts (see The Future section, above.)

The **South African Area** is near the Mediterranean Section. Considered one of the five Mediterranean climate areas of the world, the Cape region of South Africa has a flora rich in bulbs and other flowering plants and wildflowers. In this area in the Arboretum, hundreds of naked ladies or pink ladies *(Aman;llzs belladonna)* cover a slope with their fragrant flowers in late summer. Varicolored carpets of iceplant, a succulent commonly used in landscaping in California and Cape daisies clothe an open site. m th hill ct

A relatively small collection, the South African Area does give a taste of the extraordinary variety and appeal of South African flora to horticulturists and gardeners. Scented geraniums *(Pelargonzum)* and various bulbs, some cultivars, including the firework-like deep blue Jewel of the Nile *(Agapanthus)*, Homeria, yellow *Bulbzriella, Aloe, Dzerama, Melianthus* and Cape honeysuckle *(!econ:arGza)*.

The California Garden of Early California Flora includes typical plants that Californios grew around missions, ranchos and homesteads before the Americans came,

during the period when Alta C lif •
plants brought to the NewW d rma was p rtof_M xico until 1849. Along with
. or . Y the Spanish rmss1onanes from Europe this
collection also features plants native to Mexico and Californi hih ' d f
medicine and food. Central to this or tours and class es h ill d • aw c were use or
k f . area w ; ouse be the new Environmental Education ma converted boathouse that previously
Center to be used f ept canoes, or student recreation. A native American cutting garden on the hillside and a wetl d plantin longside the boat dock will provide plant materials for de onstrations of traditional uses of native plants that native Americans would have cultivated.

Adjacent to the Early California Garden, a **California Plant Communities** area is under development. A ollection of California native plants for hands-on learning abou the e ology d b1o_lo8?7 ?f the plants and animals of the Central Valley and foothill regions, this area is d1v1ded into five compact sites. To evoke some sense of the diversity of the California landscape, each site will represent the vegetation found along Put Creek from Cobb Mountain to the valley floor, including valley prairie, riparian, foo woodland, aparr l and redwood forest communities. The valley prairie s:ction features species native to the Arboretum site that now exist in the wild only in tiny, vulnerable and fragmentary populations. The design of this area, which includes plants growing elsewhere in the Arboretum, will allow students easy access to the native plants of this region for sampling, study and field experiments. Signs and labels interpreting this collection to the public will focus on native American horticultural practices and habitat protection.

The Cottonwood Grove and Fall Color Collection lies at the far west end of the Arboretum, across the creek from Shields Grove. A grove of native western cottonwoods and other trees and shrubs that reliably exhibit fall color in the Central Valley, such as Chinese pistache, black locusts, tupelo, aspens and maples. An adjacent planting includes trees extinct in the native flora but known from the fossil record of California, Oregon and Nevada: bald cypress, Kentucky coffee trees, dawn redwoods, and ginkgos *(Ginkgo biloba),* with fan-shaped leaves. The bald cypress *(Taxodium distichum),* a native to the southeastern U.S., is planted for lumber in southern Europe and produces wood that is used for greenhouse construction because it resists decay.

The East Asian Area comprises an open landscape and marks an entry to the west end collections: the Carolee Shields garden, the Storer garden, the Mediterranean Collection and the Shields Oak Grove. Plantings in this area date from the 1980s and later. Here daffodils, dwarf nectarines and butterfly bushes bloom in early to late spring, whilea grove of Formosa and Chinese flame trees add fall c_olor•. The _East Asian Area includes plantings of trees and shrubs from the temperat: regiom Asia. Three deodar cedars, each with a distinct drooping crown and weeping outline, stand near an evergreen mound of Ubame oak. De_oda: or H alayan cedars *(Cedrus deodara)* have clusters of green needles with a grayish tint. Like all cedars, the deodar has egg-shaped cones that grow upwards and shatter when mature. Growing vigorously hereare_

· f
young spe cimens o pa per mulberr y, dawn redwoods, and Korean hackber ry, native to .
Japan, China and Korea, which glossy leaves and round, sweet, mealy heme: that tum d 1 · th fall and often remain on the tree throughout the wmter.A
an oranllge-tir e cof oAr the cultivated new co ec on o lil acsi·s planned sian as well as Asian ancestors of , •
hybrid tea rose. I **Sh' 1e Id s Wh1'te Flower Garden** is a theme garden intended to be . .

The C aro ee · • d il i' ht It was origm'ally desi gned by Mai Arbergast. Carolee

seen by moonlight an tw g •

Shields, who was a concert pianist before she married, had a particular reason for growing white flowers in her own garden in Sacramento. As the wife of Peter Shields she often had to entertain guests, and in the heat of the Central Valley such entertaining often went on in the evenings. She also helped organize the first Picnic Day in 1909 and was a close friend of Dr. Ruth Storer.

This garden was re-developed in the 1970s and is still being enhanced. Planted aroun the curved paths that fra1:1 a lar e gazebo, the garden is a popular site for weddmgs and other even s, and 1t IS particularly luminous, of course, by moonlight. Fragrant plants *a:e* a spec al feature of this garden. Many of its pale flowering plants release sce_nt dunng the rught and emit a sweet perfume at dusk to attract moths to their nectar. With both sunny and shady flower beds, this garden displays white blooming plants swtable for home gardens, including white roses. Variegated grasses and silver and gray-leave_d pl ts create a ackdrop for white flowering trees, shrubs, perennials and bulbs. wi:ut_e gmger *(_Hedechzum coronarium)* was always an essential plant in these gardens, and IS mcluded m the Carolee Shields Garden. Cuttings from Carolee Shields's own garden were also planted here: Wandering Jew *(Tradescanti fluminensis)* and Snowflake *(Leucogun vernum),* a bulb. Snowflake was donated by Judge McBride, who worked in the garden at the Shields' garden as a kid.

White flower gardens can be traced back to ancient and mediaeval gardens of India and Japan, Roberts said. Such gardens symbolized purity, and white flowers were valued for the fragrance and luminosity at night.

The Ruth Risdon Storer Garden, a half-acre demonstration garden was founded February 24, 1980 with a gift of $20,000, the day before Dr. Storer's 92nd birthday.[192] Dr. Storer was the first female doctor in Yolo County, and came to Davis in 1923. Though she never had any children of her own, Dr. Storer was a pediatrician to three generations of many families, who were known as "Ruth's Children," and during the Depression she set up programs for the indigent. Roberts became friends with Dr. Storer by pruning orange trees for her, for which she gave him supper in exchange. Dr. Storer left an endowment to develop this garden. A gardener herself, she kept a notebook on what suited the climate and was generous with her knowledge, Roberts said. Some of her sayings were, "plant thickly and think quickly" and "plant only as much as you can take care of."

Born in 1888 in National City south of San Diego, Dr. Storer grew up m Modoc County at the northern edge of the state. Her father was a country doctor, and Ruth would accompany him to see patients in wagons and on horseback. She went to boarding school in Oakland, and her parents would come to visit her ?n horsebackall_ the way from Modoc County. From Oakland, she watched San FrancISco urn ownm the fire after the earthquake of 1906. She went to medical school at the Uruver 1ty of California, San Francisco, and was the only female graduate from the UC Medical School in 1913.[193]

Dr. Storer's husband, Tracy, was a professor of zoolo at DavIS, an expert on the California grizzly bear and co-author of a handbook on Sierra Nevada natural history. Storer Hall is named for him.

The Storer Garden highlights attractive flowering plants that are especially well suited for gardens in the Central Valley and brings many visitors to the west end of th

192.Matteson, 112.
193.Matteson, 112, and according to Roberts.

Arboretum. It displays well-adapted, easy to maintain drought-tolerant perennials and small shrubs, and is designed to provide year-round color with minimum maintenance. Flowering quince ... the year, followed by flowering apricots, magnolias and forsythia. Paths are ed with an array of flowering perennials including asters, yarrow, rock roses, pinks, lavender and coral bells.

A n w additi?n to the Storer Garden is 'Mary's and Ruth's Roses,' a dem nstration planting of roses and companion plants, which illustrates some of the loveliest roses that are especially well adapted to the regional climate. This part of the garden was funded by Milton Miller, to commemorate the friendship between his wife, Mary, and Dr. Storer, who were neighbors on Oak Drive in Davis and shared an interest in raising roses. Miller also helped set up the original endowment from Ruth after Tracy passed away.

On the creek below Shields Grove, a **Yolo Riparian** area, rich in bird and insect life, represents aspects of the native pre-Columbian ecosystem. A line of tall western cottonwoods edges the paths along banks. Below them grow creeping wild rye, California wild rose, blackberry thickets, Dutchman's pipe vine, which attracts pipe vine swallow tails, and wild grape. Popular with the children's teaching program, this section includes a num er of riparian plants common in the Central Valley.

The Peter Shields Oak Grove was dedicated to the founder of the campus on April 5, 1962 in honor of Shields' 100th birthday the day before. U.S. Chief Justice Earl Warren, Governor Edmund G. Brown, University President Clark Kerr, Chancellor Emil Mrak and Knowles Ryerson all spoke at the dedication.[194] It is is one of finest, and most varied, collections of oaks in the world and covers eleven acres near the west end of the Arboretum. Formerly almond and walnut trees grew in the area of Shields Grove. The climate of Davis, which accommodates both evergreen and deciduous oaks, is one reason for the distinction of Shields Grove.

Shields Grove includes approximately 125 species, varieties and hybrids of oaks, with more than 80 deciduous and evergreen species of both native and exotic oaks and a documented collection of unusual F1 and F2, meaning first and second generation hybrids. Among its many specimens', the grove has an impressive collec o of oa native to the western United States, including coast live oak *(Quercus agrifolia),* which has evergreen, boat-shaped, holly-like leaves, and the rare_st of California oaks, the island oak *(Quercus tomentella),* a handsome group of Persian oaks *(Quercus castaneiafolia)* from Kew Gardens, unusual oa s fro Mexico, anda number of oaks from the Old World that are rarely cultivated in this country. any?f the trees have matured into striking and distinctive specimen trees. The oaks ID hields Grove are actively used for research and teaching, as well as for testing selections of oaks for future landscaping. With open vistas and wide sweeping lawns, the grove a popular and pleasant retreat for students and visitors to the Arboretum. Every oak ID the collection is labeled.[195]

{Ad'acent to Shields Grove are twos trik' mg spec_ies of exotic pines. The Canary Island pine *(Pmus canarzenszs_)* [15] identified by its pyramidal shape and long, drooping, dark green needles. The Italian stone pIDe *(Pinus pinea)* is the source of the commercial European pine nut.)

[194] Matteson, 88.

f UC Davis, went through the Grove checking

195 Recently Emily Griswold, nowa graduate °surke also worked on the identifications.
identifications and labeled all the trees. Mary

Almost all of the hybrid oaks in Shi ld ty of t Uta h T k 'd
donated by William Cottam of theU ruvers1ty s Grove were planted as seedlings
came to Da vIS in two big ship t , uc er sa1 • Cottam's hybrids

men s: one trunk 1 d C • the early '60s,
and Tucker drovea vanload from Utah in oa ottam drove o u tn
1971

Cottam's enormously successful • • f ••• verifya discovery of an unkno k p oJect o hybri cIZmg oaks began with trying to
stud 196

Cottam and Tucker were sure;;: d:he yd ent of his in1959. Though
be able to reproduce the hybri'dIZ' ti' t a covereda new species, they needed to
„ . . a on o prove 1t.

To a taxonomISt it was obvious that this was a hybrid on th b • f
morphology, but others might quibble," Tucker said. „A en:tic· te as1so f„
g wants proo•

After four years of tryin' t h ndl2e the two oa ks experImentally, acc ording to
. g o b
Y

the metfculous but la.rgely unsuccessful traditional methods[197], Tucker could not succe s
y cross-pollinate them, though this had apparently happened repeatedly in the wild.
Cottam came up with a new more successful method.t9s

Thereafter C tta began to hybridize oaks madly, planting the seedlings here and there on the Uruvers1ty of Utah cnmpus until they gave him a three-acre site at the mouth of a canyo on the inactive military base at Ft. Douglas, which he also filled.
Walter P. Cottam s Oak Group was dedicated at the University of Utah in 1976, with Tucker as keynote speaker.

"He got fired up, and tried everything he could get catkins from," Tucker said. "People were sending him catkins from everywhere -- his brother on the Gulf Coast in Texas, his son in Wisconsin, and I was sending them from California. He was retired, and operating on a shoestring, using milk cartons, planting all over campus without authorization."

[196] Rudy Drobnick, the student, was hiking in the Oqir h Mountains near Salt Lake City and came upona thicket of oaks quite different from the common white or Gamble oak *(Quercus gambelia),* whose range extends throughout the Wasatch and Rocky Mountains into Wyoming, Colorado, New Mexico and also Arizona, and took a sample to Cottam, who was on the point of describing it asa new species until he got two second opinions. Tucker, at Davis, and CorneliusH. Muller, at UC Santa Barbara, independently determined that the new oak wasa hybrid of the Gamble oak and shrub live oak *(Quercus turbinella),* an evergreen species which grows only in the warmer southwestern comer of Utah and desert areas 0f Arizona, New Mexico and west Texas. Drobnick scouted all along the Wasatch in the fall and found, miles apart, over 50 clumps of the same hybrid oak, which kept its leaves when the Gamble oak dropped them.

After more research in paleoclimatology and paleobiogeography, Cottam, Tucker and Frank Santamour of the National Arboretum determined that the desert species of Shrub Live Oak had marched north ina warmer era since the last Ice Age, between 7,000 and 3,500 years ago, and that, although the desert species could not survive the return ofa colder, moist climate, the stands of the hybrid persisted as relics from that time. .

[197] As well as long trips to southern Californi to c llect c tkms(the_male flower), _this method involved freeze-drying pollen, storing it in vials with calcmm chlo 1de, emasculatinga branch, • tyinga clear plastic bag around it, and applying the pollen to the tiny female flowers (2 mm) with a camel hair brush. t throw the pollen in the bag with the female flowe rs, and shake 1t

o ams me o was o

"Santamour could see the logic in Cotta's method," Tucker

every three days for a week or so. Putting too many pollen grains on flowers might almost choke them, but putting pollen in the atmosphere of the bag for a week or ten days was more natural. Judging the receptivity of females visually was a shot in the dark."

At the far west end of Shields Grove a swale of Central Valley annual grassland has been left undisturbed. In the abandoned dry creekbed of the North Fork of Putah Creek, an urbanized area, a population of indigenous native ants persists undisturbed by the more common Argentine ant. The native ant was recently the focus of doctoral research in entomology.

The **Putah Creek Reserve,** which is not directly associated with the Arboretum, has drawn support from the staff of the Arboretum since it was designated as a reserve of 125 acres in 1983. Arboretum staff were also involved in efforts in the 1970s, along with other members of the University community and the city of Davis, to save this tiny fragment of riparian vegetation on the south fork of Putah Creek. This riparian reserve is the only one in the western United States located within a designated floodway. This unique situation allows for research on riparian issues related to urban and suburban streams and on-campus recreation and teaching.

In the past, Arboretum Director Dawson served as the faculty reserve manager and chairman of the campus committee that oversees the reserve. With its focus on the restoration of natural vegetation and ecological monitoring, Putah Creek Reserve is an important complement to the Arboretum's natural and cultural history. Because of its commitment to in situ preservation of native plants and habitats, the Arboretum also maintains close ties with the University of California Natural Reserve System (NRS), a network of reserves that protects native habitats throughout California for research and teaching.

The Arboretum website is http:/ /www.arboreturn.ucdavis.edu.

Appendix I: Present Non-Human Inhabitants of th A b e r oretumt99

Birds

More tha n 130 specie s of birds have been sighted m· theA b r ore tum , accor mg to Sid England, a birdwatcher m the Physical Plant office , m·cl u mg magpi es, d uc k s, herons, egrets, hawks, gulls, doves, hummingbirds, woodpeckers flycatchers verios swallo w s, sta rlin gs, blackbirds, thrushes, warblers, sparrows and finches. This'. is 't s nsmg; since acramento area is in the Pacific Flyway. England and others lead bird- no watching groups at the Arboretum on occasion.

Fish

In the Arboretum Waterway live a number of kinds of fish. Fathead minnows and common carp, which are native to Germany," are introduced... by well-meaning people (mainly kids) who find them dying in nearby irrigation canals, when the flow ceases," according to Peter Moyle in the department of fish and wildlife. "They help to keep the waterway green and soupy by stirring up the bottom." Most of these carp were relocated off campus during a dredging project in 1999 or 1998. Another waterway inhabitant is the western mosquito fish, which is native to the southeastern U.S. and has been introduced in many areas for mosquito control. A few goldfish and perch are also found in the Arboretum. Moyle hopes to introduce some Sacramento perch. Recently he stocked the waterway with some Sacramento blackfish, "a native fish that thrives in warm sloughs and feeds on algae."

Amphibians and Reptiles

Eleven species of turtles also live in the Arboretum, one of which is native, as well as bull frogs, slender salamanders, western fence and northern lligator lizards, and three kinds of snakes: California kings, gophers, and yellow-bellied racers. Dunng the recent dredging project, a musk turtle was found, whi<:1' is an extr mely rare and highly endangered turtle. It was marked with notche o its shell, which were traced to a sanctuary of some kind in North Carolina, from which 1t had been stolen and to which it was returned.

Mammals

According to Ronald Cole, principal scientist at the Museum f Wildlif d .C e an Fisheries Biology at UC Davis, eight kinds of bats have been observed o campus, some as full-time residents and others only in the spring and fall, wh 1: dy nufgrmila e frthom southern coastal to northern mountai nous area • In the Vespertilio m ae a y, e pallid bat inl 1 wns and grass fields of the mam *(Antrozous pallzdus)* hunts a Y overa bl hunts in the Arboretum. The campus and the big brown bat *(Eptes1cus fuscus)* proba Y f th silvery-haired bat *(Lasionyctens noctzvagens)* is litary, dwelling m trees o e Arboretum, probably unng s rmg) The Yuma myotis *(Myotis yumanenszs)* ıs a *borealis)* and the hoary bat *(Laszurus cmereus* d h ting seasonal resident, spend g ays in various university structures an un throughout campus at rught. The es e PP infre uentl during migrations. lump-nosed bat *(Plecotus townsendu)* visit campus q Y

'd d the information in this section.

[199] Sid England, Peter Moyle and Ronald Cole prov‚e

Finally, the Brazilian free-tailed bat *(Tadarida brasiliensis)* of the Molossidae family is the most common vers1ty. u1lding dweller, hunting throughout campus.

One arsupial, the opossum *(Didelphis virginiana),* is common al ng Putah Creek and is occasionally seen long the Arboretum Waterway. There are also three kinds of rabbits at may be een_m the A:boretum, all of the Leporidae family: the California jackrabbit *(Lepus californzcus),* which abounds in the agricultural fields south of the Arboretum, and is commonly seen in the western part of Shields Oak Grove.
Audubon' cotto tail *(Sylvilagus audubonii)* is a ess common rabbit seen along the fencerows m agncultural areas of campus, and 1s not common in the Arboretum. The domestic rabbit (Oryctolagus cuniculus) is seasonally common, due to release of family pets.

Rodents are well-represented in the Arboretum. From the family Sciuridae, there is the California ground squirrel *(Spermophilus beecheyi),* which is quite abundant, and the western gray squirrel *(Sciurus griseus),* which is very uncommon on central campus but is increasing in number along Putah Creek west of Highway 113. Botta's pocket gopher *(Thomomys bottae),* the roof rat *(Rattus rattus)* and the house mouse *(Mus musculus)* are all commonly abundant. Muskrat *(Ondatra zibethicus)* may venture into the Arboretum, and are common along Putah Creek.

Carnivores are uncommon in the Arboretum. The domestic cat *(Felis catus)* is probably the most common, and these may occasionally appear: coyotes *(Canis latrar:zs),* gray foxes *(Uroet;on cinereoargenteus)* and red foxes *(Vulpes fulva),* of which there is a family living in and around the Equestrian Center and the west end of the Arbore . Raccoons *(Procyon lotor),* spotted skunks *(Spilogale putorius),* striped skunks *(Mephzt'.s mephitis),* river otters *(Lutra canadensis),* long-tailed weasels *(Mustela frenata),* and mink *(Mustela visons)* are not likely, though not intpossible, visitors to the Arboretum.
Bobcats *(Lynx rufus)* are very rarely seen on campus and there are no reports of mountain lions *(Felis concolor),* though they have been seen along Putah Creek.

Appendix II: Ideological Background of Botanical Gardens and Arboreta

Bo anical gardens have existed since ancient times. Aristotle had a botanical garden, with The_opru:astus as s curator, and Montezuma kept elaborate gardens in present-day Mexico city, according to John Prest, author of The Garden of Eden: The Botanic Garden nd the Re-creation of Paradise.200 The comparatively modem European botarucal garden, which was at its popular height following the Euro pean exp oration an co oruzation o the New World, had a particular goal: to reconstruct the Garden of Eden. As Prest writes,

> Throughout the middle ages the Garden [of Eden] was believed somehow to have survived the Flood, and in the great age of geographical discov:ries in the fifteenth century, navigators and explorers had hopes of finding it.[ ]
> [Columbus] on his third voyage, when he reached what is now South America, ...became convinced that he had reached the region of the earthly paradise[.....] Spanish and Portuguese explorers lived in almost daily expectation of discovering the Garden of Eden in central or South America.....[some made] the supposition that the natives of the Americas ... were the ten lost tribes of Israel[.....]
> Columbus concluded that the earth was not round, but pear shaped, or that if it was round, it resembled a ball on one part of which was placed something like a woman's breast, upon the nipple of which, below the equator, lay the Garden of Eden, which he did not, however, attempt to enter because it would require supernatural grace to do so [....]
> When it turned out that neither East nor West Indies contained the Garden of Eden, men began to think, instead, in terms of bringing the scattered pieces of the creation together into a Botanical Garden, or new Garden of Eden.[201]

In the more thematically religious botanical gardens, particularly in the cloister gardens of monasteries and convents of medieval times, visitors were meant to gain some sense of the surroundings human beings enjoyed before the Fall; they could go there to pray and to feel closer to God. "If Bibles faile' each garden will descry the works of God to us," wrote William Prynne. "Some of the brightest hopes of mankind thus came to lie in the principles of recreational gardening associated with the Botanical Gardens." A botanical garden could be "a complete guide to the many faces of the Creator since each family of plants was thought to represent a special act of creation."202

With the discovery of plants from the New World, gardeners hoped to reproduce the Garden of Eden more literally; for instance, some speculated th_at the banana tree was the tree of knowledge of good and evil.[203] Kew Gardens cul vates plants from all over the world, a project whose aim seems to be to r pr ducem miniature every place the British Empire touched in i_ts global colo ation.

The academic study of botany began in botarucal gardens like the one at Oxford, established in 1621, which was a square garden surrounded by a 14-_foot stone wall. It was arranged in quadrants which, throughout the history of gardening, had stood for

200 John Prest. The Garden ofEden: The Botanic Garden and the Re-Creation ofParadise.New Haven: Yale University Press, 1981.

201 Ibid., pp. 9, 31, 32.

202 Ibid, pp. 39.

203 Ibid, pp. 11.

the four con:iers of the earth; aft r the iscovery of America, they stood for the four known continents of Europe, Asia, Africa and America, but at this point plants were arranged by taxonomy, not geography. The gardens at Leyden functioned as a sort of plant encyclopedia, with numbered plants arranged by family: "no plant could not be seen, touched, smelled and sketched from the gravel or grass walks."204

"In the guides to these great gardens the theme is always the same -- it is that of gathering the plants together from all over the world" to represent all of Creation in miniature. At the gardens in Padua, the aim was to collect "the whole world in a chamber," so that if the four quadrants of a botanical garden represented the four known continents -- Europe, Africa, Asia and America -- to walk through such a garden would be like a trip around the world.2os

Most modem arboreta and botanical gardens, including the University Arboretum at Davis, do not have such pretensions. Yet there does seem to be residue of the great ideological history of botanical gardens. The Arboretum does have plant collections representing different parts of the world, and it still presents itself as a place for quiet contemplation. Headlines of newspaper and magazine articles often refer to it as a sort of paradise: "Eden in Davis," "A Little Slice of Heaven," "Arboretum Offers Paradise and Entertainment on Campus," "A Sanctuary for Nature".[206] And some of its collections also try to represent in miniature a lost world, or what some Californians think of as the Garden of Eden -- that is, the California landscape, with its native flora and fauna, before European settlement.

IM Ibid, pp. 5 - 6.

205 Jbid, pp. 44.

206 *UC Davis Magazine,* Winter 1985; W1 1 1 *e rs* k f th arc Arboretum. M h 19 1998·*The Davis Enterprise,* Apnl 9, *t Express*

1995; *The Davis Enterprise,* April 3, 1988. Scrapboo o e