A WORLD CLASS ARBORETUM

PHOTO BY LARRY MINDEN

BY ERIC HOFFMAN

While the public clamors to visit the fabulous Monterey Bay Aquarium because of its tasteful and extremely effective celebration of native marine life, a much quieter botanical celebration of equal, if not greater, magnitude is underway on the campus of the University of California at Santa Cruz.

The UCSC Arboretum, with its collection of over 8,000 species of plants primarily from Australia, South Africa, New Zealand, New Caledonia, and the U.S., is a collection with few, if any, equals anywhere in the world. Most likely it will develop into the premiere arboretum in the Northern Hemisphere during the next 10 years.

Since the Arboretum's inception in 1964, when Chancellor Dean McHenry accepted a gift of 90 kinds of eucalyptus, the 130-acre site has steadily grown into a botanical wonderland. Because of the Arboretum, entirely new ornamental plants have been located abroad and locally and introduced to the public. The facility also houses primitive angiosperms from isolated island environments that provide scientists with a glimpse of plant life whose characteristics disappeared on most of the earth a million years ago. In increasing numbers the public and students have reaped the educational experience of the Arboretum.

Operating on a shoestring budget, as a joint brainchild of retired Chancellor McHenry and Dr. Ray Collett, the UCSC Arboretum has somehow crept into world standing with botanical gardens that have received much greater funding.

According to McHenry, the growth of the seed he and Collett planted nearly 20 years ago is attributable to Collett, whom he describes as a "shy, energetic, genius." McHenry's sentiment is also shared by Collett's colleagues and students. Some of them add that he is the most inspiring instructor they have known, too.

According to Collett, it's the site: "The site is perhaps the best in the world. It is generally frost-free, though

we have a few frosty spots to help assess frost resistance. There are north and south facing slopes and many kinds of soil types. It's highly unlikely the site can be duplicated anywhere with today's property values and because so much of the prime land has been covered up with human contrivances."

To date, of the thousands of varieties of plants brought to Santa Cruz, over 500 cultivars—different varieties of the same species as well as different species that were previously not sold commercially—have passed muster (drought and pest resistance, plus attractiveness), and are now sold at nurseries. With every passing year the UCSC Arboretum exerts greater influence on horticulturalists who buy and sell plants that are introduced into the marketplace. Chances are the make-up of a great deal of new landscaping throughout the Monterey Bay area and beyond will be influenced by what has gone on at the UCSC Arboretum.

A visit to the Arboretum (open 2 to 4 p.m. Wednesdays and weekends, and located on Empire Grade between the University's Main and West entrances) will boggle the mind of any plant lover and even stimulate curiosity in citizens who have managed to kill off a few rubber trees before opting for plastic plants. The profusion of diverse looking plant life is striking, and often mystifying, especially during the spring. There are plant forms that seem unimaginable and others that are simply fragrant, beautiful and unfamiliar. The Arboretum is a hummingbird's paradise; some sensibly forget to migrate.

It's not just the flowers that offer new forms of beauty and wonder. There are trees with bright red veins, knotted bushes from New Zealand that wrap and twist into themselves, plants with branches called phyllodes that look like green scales, and plants that provide homes for visiting insects. There's something for everyone. For those who need something familiar to relate to there are over 30 kinds of bottlebrush, some with purple and green flowers.

As amazing as the plant life is, the story of how and why all this ended up on the Santa Cruz campus is equally astonishing.

Ray Collett is the reason. What he and three full-time employees (manager Brett Hall, staff botanists Ted Ledwith and Colleen Monahan, and a forever changing cast of student help) have

accomplished is miraculous. To begin with, Collett directed the creation of the Arboretum while teaching full-time. He did two jobs. For the minuscule staff, just tending, naming, assessing and studying plants is an endless task. Finding exotic plants throughout the world and successfully importing them is another matter.

Early on, Collett concentrated on collecting the *Protea* family world-wide, and Australian shrubs. *Proteas* are generally ornamental flowering shrubs, and Australian shrubs are usually drought and pest resistant. Compared to the U.S., Australia is botanically very rich. There are over 20,000 species in Australia and only 8,000 species in the U.S.

Tim Ledwith explains: "Like the Great Plains of this country which is a vast grasslands, much of Australia is a vast brushland. Many of the Australians are drought resistant and ornamental, which is a desireable combination."

When Collett first went collecting in Australia he found a generally untapped resource. Says Collett: "In many ways the surface had only been scratched. The country is very large for the mere 14,000,000 who live mostly along the shores. There was plenty of room for discovery."

As it turned out, one of the most difficult discoveries was how to get a plant safely into the U.S. The U.S.D.A. often treated incoming plants with chemicals designed to protect U.S. agriculture. The results were often fatal to the carefully selected imports. Collett pioneered a new method of importing plant shoots without soil which resulted in avoiding a great deal of "chemical decontamination."

In time, the Arboretum began to develop a many-faceted approach. Though the Australian collection (known as Slosson Garden) is the most complete group of plants, collections from South Africa, New Zealand, and New Caledonia are also among the most complete collections of their kind in the U.S. Other parts of the Arboretum have been set aside for growing collections of plants from the Mediterranean climates throughout the world, California natives, and conifers. Nearly every genus of conifer found in the world is represented. The collections grow in spurts because they are highly dependent on the availability of funds which often come from donations rounded up by Arboretum Associates, a citizen's group, and large philanthropic dona-

tions such as the one from Elvenia Slosson that resulted in the Australian section being officially named Slosson Garden. The Arboretum also raises money through weekly plant sales to the public.

Though the emphasis is usually on developing ornamental, "consumer friendly" plants, collections also provide a great deal of information to scientists interested in the evolution and adaptability of plants.

From New Caledonia, an island environment, primitive angiosperms that allow scientists a chance to study ancient plant forms have been assembled. It is in the realm of plant history that Ray Collett's aptitude tends to draw the most raves from his admirers. Says Ledwith: "He's a biogeographer. Unlike many botanists who tend to specialize, he has a global view. He sees a picture of plant life that relates continents, bringing together millions of years of evolution. He takes into account special variables that affected evolution."

One theory scientists like Collett contemplate involves the role of a group of New Zealand ground-dwelling birds called moas. Apparently many of New Zealand's plants developed flowers and an intertwining structure to reduce the scourges of the giant bird's eating habits. The moas disappeared around 1,200 years ago at the hands of Polynesians, but the plants they helped create still remain.

While Collett and others postulate and confer, he and his staff spend most of their time on more pragmatic issues. "We spend a lot of time on things like assessing drought and frost resistance so we can inform the public about new plants," says Ledwith. They even ended up assessing a good number of plants' flood capability. Adds Ledwith: "During the '82 flood the old reservoir we use for frost assessment flooded and many plants spent quite a few days under as much as seven feet of water. Remarkably, many survived."

Even though Ray Collett, Brett Hall, Tim Ledwith, Collen Monahan, and the student aides are hard pressed to keep up with the pace they've set for themselves, Ledwith feels it's worth it. As we walk along a flowery path that affords a view of the entire Monterey Bay, he explains, "It's sort of like working in paradise, and I have faith we'll get philanthropic help now that the value of the Arboretum is more widely known."