

# LOFF

JUNE 2005

**PLANET ISSUE**

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# GUARDIANS of Paradise

BY ANGELA POSADA-SWAFFORD  
PHOTOS NATIONAL TROPICAL  
BOTANICAL GARDEN

A cross between Indiana Jones and William Shakespeare, Steve Periman is a botanist who risks his neck every day to save Hawaiian plants from extinction and write poetry in their honor



• Above: Myrsine, New Species Discovered in Kauai, Kapaiaoa Left: Ken Wood; Kahoolawe,

**K**auai, Hawaii - Steve Perلمان dangles on a rope hanging from a helicopter. The low-flying craft moves toward a rock face crowned by shrubs. The black lava wall ends abruptly 500 yards below, battered by the powerful waves of the Pacific Ocean. With a hand signal, Perلمان indicates that this is the place. The pilot draws nearer to the cliff, flying very cautiously in order to avoid being driven into the rocks by the fiendish wind. Meanwhile, Perلمان readies his lines, locates a lava ledge and hurls a grappling hook. After two attempts he manages to secure a hold, rappels down, and releases the rope attaching him to the helicopter. His feet land a few centimeters from the drop, and he immediately begins a difficult descent down the smooth, damp wall.

Perلمان is not here to rescue a lost climber, take a one-in-a-million photograph or win an extreme sports competition. He is looking for something far more valuable than any of those: a small plant with a thick stem and prehistoric appearance, embellished by a crest of broad, pale green leaves. A few days ago he saw this plant on the face of Mount Haupu from his kayak, and today he is coming to find it. There it is. Right on the edge of that other flow on the right. Trembling with emotion, Perلمان stops his descent. He can't believe it. At last he can see those delicate yellow flowers and the unusually large pistils he has imagined for many years. It isn't the most beautiful flower. If plants laughed at each other, this one would be the butt of all the jokes. But for the botanist, who is also curator of the National Tropical Botanical Garden in Hawaii, it is the plant of his dreams. Rare among the rare, this shy plant

## FOR AT LEAST 20 YEARS THEIR MISSION HAS BEEN TO COMB HAWAII AND OTHER ISLANDS IN THE PACIFIC IN SEARCH OF UNIQUE SPECIES AND SAVE WHAT THEY CAN FROM EXTINCTION.

is the last surviving example of the *Brighamia insignis* species, so rare it doesn't even have a common name. Following two years of continuous searching and risk-taking on the islands of the archipelago, Perلمان felt almost obliged to admit that the *Brighamia* plant was thought to be extinct. Until now, he thinks with a triumphant grin.

Forgetting the cuts and bruises, the weight of his backpack and the sleepless nights on the unforgiving mountainsides of this "garden island," Perلمان pauses for a moment to recompose himself. Then he produces a thin brush and, like a giant bumblebee, proceeds to transfer the pollen from one hungry flower to another, doing the work of the absent pollinators: the insects and birds that used to visit *Brighamia* but, in recent years, have been pushed to the brink of extinction by drastic changes in the vegetation of the islands. Feeling like "an artist



› Steve Perلمان; Kauai, Kalalan

who has just discovered an unknown Michelangelo," Perلمان admires this last specimen standing bravely on its lava shelf. Terrified that they might be blown away, he takes some precious seeds in one quick movement and puts them in his pocket to carry back to the botanical garden on the southern coast of Kauai. Perلمان has no doubt that the enormous risk, the time and the effort have been well worth it to protect the future of this solitary soldier.

Perلمان and his colleague Ken Wood, a self-taught botanist with the soul of a philosopher, are another generation of the guardians of paradise. For at least 20 years their mission has been to comb Hawaii and other islands in the Pacific in search of unique species and save what they can from extinction. They and the staff of the botanical garden (a vast repository of exotic plant life that provided the setting for *Jurassic Park*) have discovered at least 50 plant species.

In Hawaii the plight of endangered plants is a topic that takes on an urgency unimaginable in the rest of the world. Who would have guessed that there is trouble in paradise? The truth is that there are a whopping 282 species in these islands on the endangered list, representing 42 percent of the U.S. total. On the U.S. mainland, Florida heads this list with 54 endangered species.

### MORE THAN JUST LIVING THINGS

Species diversity on Earth is much more than a pretty collection of living things. EO Wilson, the highly respected biologist from Harvard University and one of the world's foremost experts on biodiversity, recently calculated that there are at least 1.5 million species known to man on the planet. Every year, science discovers another 10,000 species, nearly all microscopic. But that's nothing. Wilson figures there are a further ten million unidentified organisms yet to be discovered and





► *Brighamia* Rock I; Molokai, Kaaloa

classified, most of which are insects and bacteria.

Bacteria? We may ask ourselves if one more species of bacteria really matters. It would be tempting to consider just trying to protect large and colorful animals, creatures that arouse our emotions (like the dolphin, grounded in the Florida Keys, that died in my arms recently after I had tried unsuccessfully for four hours to keep its airway open). Many people may think that life would be better without insects. However, life on Earth needs insects, fungi and bacteria. Biodiversity is a multicolored genetic palette, and each pigment is absolutely crucial for life on this planet, including ours.

But getting back to Hawaii, why have these islands become so dangerous for native plant life?

According to Perlman and his colleagues, there are many problems. The islands have been invaded by an enormous army of foreign plants (and animals) arriving with each wave of colonizers. Troublesome plants come by sea and by air, with human beings and with animals. Some are brought as innocent ornamental plants for gardens; others sneak in as invisible pollinators on the soles of passengers' shoes or creep into vegetable crates from the mainland. Decades ago the U.S. government even dropped tons of seeds from small aircraft in order to cover bare volcanic rocks in green - a dangerous and pointless experiment.

Examples of foreign invaders include the widespread ornamental plant *Schefflera*, which can be found in so many homes and tropical gardens throughout the world, and *Miconia*, a shrub with beautiful heart-shaped leaves that Perlman calls "green cancer." It reached Tahiti in the feces of migrating birds. For decades Perlman and Wood have witnessed the attacks of these biological nemeses. Their broad

leaves dominate the space and light needed by native species, which are generally less aggressive. The invaders alter the chemistry of the soil, contributing to erosion and even generating plagues that attack important crops such as bananas and pineapples.

Foreign insects and birds also displace the original pollinators, preventing native plants from reproducing. Then come the millions of pigs and mountain goats that wander unchecked around the islands, eating and destroying the delicate ecosystems that nourish endemic species.

"According to the statistics, one plant species is lost forever every week," says Wood, "and most Hawaiians can tell you of at least one plant species that has become extinct during their lifetime, something that almost never happens on the mainland U.S.A."

"Because the islands of Hawaii are so isolated," Perlman says, "evolution has created a series of ecosystems that are extremely sensitive and which, like canaries in a coal mine, give the first warning signs of environmental threats that can occur anywhere in the world."

For Dr. Paul Alan Cox, director of the botanical garden, it is vital that people understand the importance of keeping native plant species alive all over the world.

"Every plant that disappears takes with it not just its exquisite beauty, but also a possible cure for AIDS or cancer, its contribution to genetic diversity and the crucial role it plays within the culture of the people

## "ACCORDING TO THE STATISTICS, ONE PLANT SPECIES IS LOST FOREVER EVERY WEEK."

that have coexisted with it for centuries," says Cox, whose work with the medicinal qualities of plants has made him a renowned authority in the botanical world.

The careers of Perlman and Wood and their work with the plants that they bring to the botanical garden have had their sad and happy times. The story of the *Brighamia* species is a high point in the careers of Perlman and Woods. Thanks to the seeds and pollen they collected, this rare plant flowers all over the garden, and some day he will be able to take it back to the wild. One of the best cared-for treasures in the garden, *Brighamia* seems to stretch its sepals out proudly in recognition of its achievement, saving its best looks for Perlman.

Meanwhile, he and the green crusaders have committed to finding other plants that are close to extinction, and returning them to their rightful place in nature.

As Nobel Prize winner Paul Ehrlich once said, losing a species is like loosening a rivet on the wing of an aircraft. You can loosen lots of rivets and the aircraft will still fly. But who knows how many rivets you can afford to lose before the next one brings the aircraft down?

The original *Brighamia* of Mount Haupu died alone on its rock face four months after Perlman discovered it, but not before he wrote this poem, at its side, while still dangling from the safety harness:

*Farewell, old soul from the rocky dome  
You've been brave and now you are alone  
I don't think I will come again  
What use to visit your mountain home  
If I can't arrive and see my friend* **L**