

# Robert L. Dressler:

## A Biologist for All Seasons

BY ALEC M. PRIDGEON/PHOTOGRAPHS BY KERRY DRESSLER

### He was like a spider in its web.

EVERYONE EVENTUALLY CAME to the Smithsonian Tropical Research Institute (STRI) in Panama for field work with him, whether it dealt with insects, crustaceans, orchids or other plant families. All left with loads of data and specimens, many of them documenting new species. Collaborations with those researchers turned into papers, papers into books, books into inspiration for past and future generations of students.

The Fifth Scientific Conference on Andean Orchids, which was held November 19–21, 2015, at Pontificia Universidad Javeriana in Cali, Colombia, opened with an hour-long tribute to this scientist who, more than any other, ultimately has shaped the careers of orchid biologists around the world for the last 50 years — Robert Louis Dressler, known to all simply as Bob.

Just as simple was his upbringing during the years of the Great Depression. He was born June 2, 1927 in Branson, Missouri, then populated by independent but poor farmers, uncharitably called hillbillies. His father, Myrl (pronounced Merle), was an electrician who farmed 30 acres (12 ha) of rocky ground to put food on the table. While cutting wood in 1937, Myrl's electric saw kicked back and cut his hand, and he died four days later of a pulmonary embolism.

So at the age of 10, Bob became the man of the family and had to take care of his two younger sisters and mother, Rachel Catherine Quigley Dressler (called Katie). On the farm he attended a one-room schoolhouse with 11 rows of seats. He developed a love of observing and studying nature at an early age, in part because he was surrounded by it there in the Ozark Mountains but also because the family could not afford material distractions. They later moved to Inglewood, California, where Katie would work as a stenographer for an insurance company for 40 years and never remarry. Bob graduated from Gardena High School in January 1945 and was promptly drafted



by the US Army in the final months of World War II. The war ended shortly after his enlistment, and the Army trained him in accounting to work at mustering out the soldiers coming home from overseas. Anyone who had been accepted into a university program could muster out quickly, so Bob immediately took a weekend pass to apply to the University of Southern California (USC), then returned to finish his Army career. In 1951 he graduated cum laude from USC with a bachelor's degree in botany, working under Louis Wheeler on Euphorbiaceae. He continued work on euphorbs on a scholarship to Harvard University, and wrote his PhD dissertation with Reed Rollins on the euphorb genus *Pedilanthus*, although he was already beginning to develop an interest in orchids on field trips to Mexico.

During his tenure at Harvard he attended meetings of the American Orchid Society, where he met Mariano Ospina Hernandez, son of a Colombian president who shared his love of orchids. Bob visited Mariano and his wife Helena at their home in Medellín, and they collaborated on his first book, *Orquídeas de Las Americas*, which would be published in 1974. In 1958 Bob left Harvard and joined the Missouri Botanical Garden as both taxonomist



- [1] Bob at Harvard, circa 1957.
- [2] Bob collecting euglossine bees.
- [3] Bob in the field in Colombia.
- [4] November 2015, Eric Hágsater (left) presents a certificate of recognition to Robert Dressler for over four decades of support and sharing of his knowledge and friendship with the world orchid community.



ANDIAN ORCHIDS  
13th October 2011  
**TALK PRESENTER**

ANDIAN ORCHIDS  
13th October 2011  
**GUEST**

La Comunidad Orquídeas Mexicana  
**Dr. Robert L. Dressler**



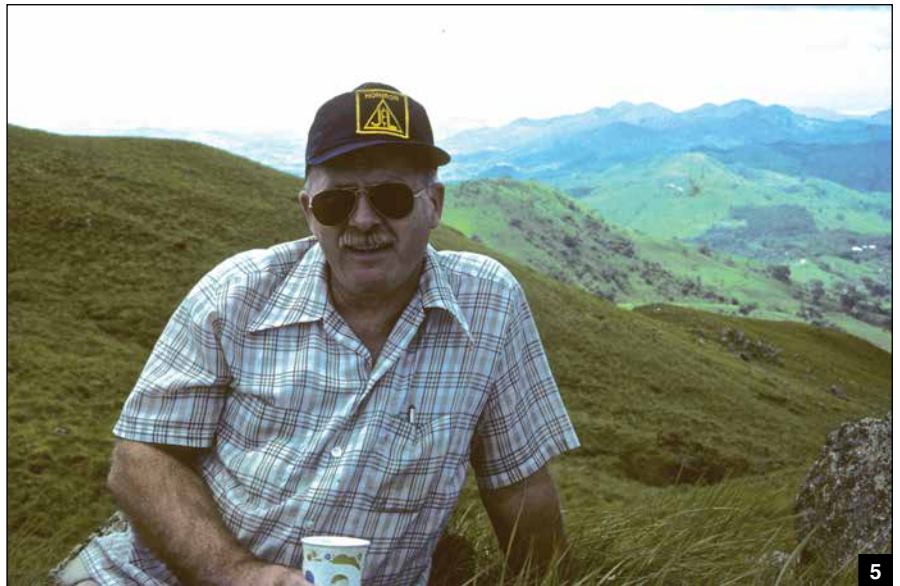
and editor of the *Annals of the Missouri Botanical Garden*, where he stayed until 1963. He was also an instructor and then assistant professor in the Henry Shaw School of Botany at Washington University in St. Louis.

One of Bob's frequent companions in the field was Calaway Dodson, then professor at the University of Miami. Bob and Cal collaborated on numerous projects over the years, including a major paper on orchid classification published in 1960. On a collecting trip to Panama in 1963, they met Martin Moynihan, who was a primate specialist and resident naturalist for the Smithsonian Institution's Tropical Field Station there. Moynihan mentioned he was looking for staff scientists, so Bob rushed to apply and was hired that same year at what would become known as the Smithsonian Tropical Research Institute.

Norris Williams first met Bob in Panama in 1965 while taking Owen Sexton's course in tropical ecology from Washington University. He became interested in the euglossine bees visiting orchid flowers and asked where he could learn more about them. Bob recommended Cal Dodson, but Cal was in Peru that year on a Fulbright scholarship, so Norris finished a master's degree at the University of Alabama, then applied for a predoctoral internship with Bob at STRI in Panama. He was the first of a host of students who moved into Bob's office, left for their doctorates and then returned with their own students. After completing his PhD, Norris would bring groups of students on field trips, and Bob would take them all over Panama. Among them were Jim Ackerman, John Atwood, Jim Folsom, Mark Whitten and Alec Pridgeon, all of whom went on to develop their own academic careers in orchids.

Bob had lived a relatively solitary life after leaving Harvard until 1975, when he met Kerry Radcliffe in the library at his Ancon office. Kerry was identifying butterflies for her calculus professor from the Canal Zone College, Gordon Small. She was enrolled in the college to finish a degree in mathematics and enable her to support her two small children, Summer (age 6) and Jay (age 5), by a previous marriage. Bob and Kerry were married 14 months later on his 50th birthday, June 2, 1977, at Marie Selby Botanical Gardens with Carlyle and Jane Luer as best man and matron of honor.

Among his eight books, perhaps none had more impact than *The Orchids: Natural History and Classification* (1981), in which Bob discussed the three approaches to



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orchid systematics at that time: phenetic (numerical taxonomy), cladistic and synthetic. All three methods took into account as many characters as possible to avoid an artificial classification but differed in how the data were analyzed. Phenetics stressed overall similarity with all characters given equal weight. Cladistics stressed synapomorphies or shared derived characters. Dressler chose what he called the synthetic approach, which, like the others, involved as many characters as possible — growth habit, veneration, pseudobulbs, internodes, stomata, "root-stem tubers," inflorescence position, anther number and position, pollinaria structure, pollinia number and texture, and column foot. As phylogenetic treatments were still in their infancy, interpretation of relatedness of orchids ultimately depended on subjective analysis of the characters. He ended up



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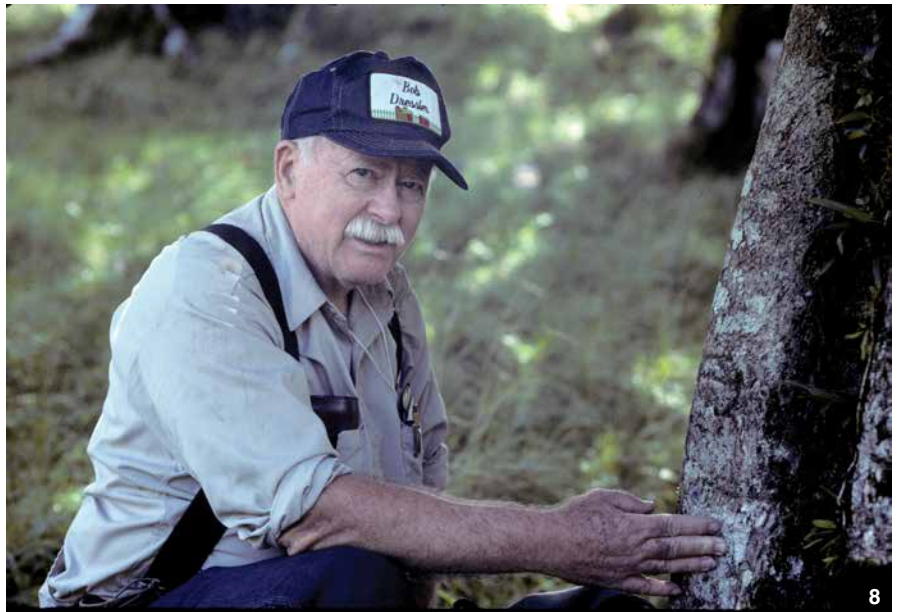
- [5] Bob on location in Panama.
- [6] Wedding Day! June 2, 1977. Left to right: Carlyle Luer, MD, Bob Dressler, Kerry Radcliffe and Jane Luer.
- [7] *Telipogon bombiformis* Dressler described in 2003 from Panama
- [8] Bob in Monteverde, Costa Rica.
- [9] Lunch in the field. Left to right: Bob, FL Stevenson by jeep, Al Embree, Norris Williams



with six subfamilies: Apostasioideae, Cyripedioideae, Spiranthoideae, Orchidoideae, Epidendroideae and Vandoideae. *Vanilla* and relatives were included in Epidendroideae based mainly on the position of the anther. Although Dressler's goal was a natural classification, this one still stressed the column in particular.

In 1993 he published *Phylogeny and Classification of the Orchid Family*, adding even more characters using new data on seeds, stigmata and endothelial thickenings and also reducing the number of subfamilies to five: Apostasioideae, Cyripedioideae, Spiranthoideae, Orchidoideae and Epidendroideae (sinking Vandoideae into Epidendroideae). His reasoning was cladistic in nature but without a formal cladistic analysis. Problems remained, exemplified by three subtribes and four genera labeled "misfits and leftovers." He admitted that "molecular systematics may offer the best hope for better understanding...." This was certainly a prescient comment, for a few months later Mark Chase and colleagues presented the first evidence from plastid DNA sequences of 33 orchid species in the *Proceedings of the 14th World Orchid Conference*, showing that *Vanilla* and *Pogonia* did not belong to Epidendroideae and that Spiranthoideae (excluding *Tropidia*, *Diceratostele* and others) were part of Orchidoideae. Today, after 20 years of extensive DNA sequencing around the world and discovery of a handful of true orchid fossils, we have a much firmer grasp of orchid relationships and evolution and now classify Orchidaceae into five subfamilies: Apostasioideae, Vanilloideae, Cyripedioideae, Orchidoideae and Epidendroideae. But it was Dressler's work in laying the foundation that now allows us to revel in all that we have learned in the last two decades while acknowledging that there are still so many more questions that need answers.

In the course of research and giving invited talks, Bob and Kerry circumnavigated the world twice, visiting Australia, Papua New Guinea, New Caledonia, Malaysia and the United Kingdom, among many other countries. He was especially active in teaching and research and had fruitful collaborations with Eric Hágsater (Mexico), Raphael Lucas Rodriguez and Dora Emilia de Retana (Costa Rica), and Walter and Andrew Maduro (Panama). Bob spent six months of a sabbatical year in Costa Rica, which eventually led to another authoritative book, the *Field Guide to the Orchids of*



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*Costa Rica and Panama* (1993).

Bob took the second half of his sabbatical year at the Florida Museum of Natural History in Gainesville in early 1985. Norris Williams was keeper of the herbarium and told Bob of a funded project needing a botanist to survey wetland plant species in Florida. Wanting a new challenge, the family moved to the Gainesville area, and Bob and Kerry botanized virtually every wet spot in the state as well as in southern Georgia and Alabama.

Bob continued on as associate curator of the University of Florida Herbarium after *Identification Manual for Wetland Plant Species of Florida* was published in 1987. Missouri Botanical Garden then enlisted him as editor for the orchid treatments for two floras, *Manual de la Flora de Costa Rica* and *Flora Mesoamericana*,

from 2004 until 2006.

The director of Lankester Botanical Gardens after Dora Emilia de Retana was Jorge Warner, who was a student of Dora's and had attended the course that Bob taught in 1984 at the University of Costa Rica. Jorge Warner, Franco Pupulin and Carlos Ossenbach offered Bob a position at Lankester Botanical Gardens as scientific coordinator of the investigators at the garden. As the botanical gardens are part of the University of Costa Rica, he was also visiting professor in the biology department. In March 2005 Bob and Kerry arrived in Cartago, Costa Rica, and still live there. His companions at Lankester are Franco Pupulin, Diego Bogarín, Adam Karremans and Melania Fernandez, with all of whom he has been collaborating on publications. The gardens have a new director, Mario Blanco, who is a

past doctoral student of Norris Williams' working on Maxillariinae. It seems somehow fitting that Norris and Mario would bookend much of Bob's career in orchids.

At the tribute to Bob held on November 19, 2015, in Cali, several of his closest associates spoke of what he has meant to them and their research. Below are extracts of their strikingly similar but independently conceived comments.

**NORRIS WILLIAMS (FLORIDA MUSEUM OF NATURAL HISTORY):**

"Bob Dressler is the best field botanist and field companion I have ever met. I have known him since 1965 when he inspired me to work with orchids, and I have never regretted it. He is generous with his time and knowledge, has a great sense of humor and is a true orchidophile. His books are great. I think the most important thing I can say about him is he is receptive to all new ideas, even if they contradict some of his earlier ideas. A truly inspiring botanist, a great friend and a wonderful person."

**JIM ACKERMAN (UNIVERSITY OF PUERTO RICO):**

"I try to emulate Bob's approach to science with, I admit, varied success. Knowledge is fluid, fed by ideas, data and interpretation. All these change with time, and it is our task to evaluate new information on its merits and incorporate them in one's own world. And when new knowledge contradicts our own ideas, then we need to drop the ego, evaluate and incorporate when appropriate. Bob's classification systems were the best available for their times, and as new techniques and philosophical approaches suggested some alternative interpretations, Bob could have taken a defensive stance but instead embraced the brave new world."

**RAYMOND TREMBLAY (UNIVERSITY OF PUERTO RICO, FORMER PHD STUDENT OF JIM ACKERMAN):**

"Dr. Dressler's *The Orchids: Natural History and Classification* was a career-inspiring book that guided my interest in biology and ultimately in trying to understand evolutionary processes in plants. I'm also grateful for his kind words and comments as a reviewer of my first submitted manuscript; his recommendations and encouragement increased my enthusiasm to continue publishing."

**KEN CAMERON (UNIVERSITY OF WISCONSIN, MADISON):**

"It is fair to say that two books changed my life and pushed me forward



[10] Tribute participants. Back row, left to right: Ken Cameron, Raymond Tremblay and Jim Ackerman. Front row, left to right: the author, Alec Pridgeon; Eric Hágsater, Franco Pupulin, Bob Dressler and Norris Williams

into orchidology. The first was the *Golden Guide to Orchids* that I discovered around age eight. The second was Bob Dressler's *The Orchids: Natural History and Classification*, which I discovered a decade later in college as I considered a major in biology. His humility, scientific curiosity and encouragement of students was evident to me back in the 1990s when Mark Chase and I started using DNA data to understand evolutionary relationships among orchids. Bob's classification system was the hypothesis we were testing, and when patterns of relationships began showing up that challenged the Dressler system he was not defensive or offended by these. Quite the contrary — he was excited by our results and encouraged us to keep going."

**FRANCO PUPULIN (UNIVERSITY OF COSTA RICA, LANKESTER BOTANIC GARDEN):**

"I always felt that the arrival of Bob and Kerry at our center was a gift of life, a gift to Lankester Garden, to the University of Costa Rica and to me. From the point of view of our institution, the name of Dressler as a faculty member simply put us into the game. But from the point of view of the people who, like me, had the luck to learn, day by day, Bob's ideas and hypotheses; the fortune to go with him to the field, share with him endless talks and discussions about orchids, science, men and life; see him beginning his work early in the morning with purpose and a smile; appreciate his simple and humble attitude in science and in friendship — we surely had the greatest of the possible companions. In the last 12 years, we had

in him a model of honesty, happiness and unselfish generosity. Robert Louis Dressler taught us how to become better observers, better botanists, better scientists and professors. And he showed us in his characteristic and straight way how to be better people."

**ALEC PRIDGEON (ROYAL BOTANIC GARDENS, KEW):**

"As a new master's student in 1975 fishing for a thesis topic on orchids, I summoned the courage and wrote to the best-known orchidologist at the time, Robert L. Dressler. He replied in a long, typewritten letter that he questioned whether the Neotropical genus *Bothriochilus* with four species should not be sunk into the monospecific genus *Coelia*, which is the older name. I brought morphology, leaf anatomy, chromosome numbers and a survey of flavonoids to bear on the question and did indeed synonymize the species of *Bothriochilus* using those criteria, publishing the results in *Orquidea (Méx.)*, then edited by Eric Hágsater (who also supplied invaluable plant material for the study). Cassio van den Berg's DNA sequencing of the group many years later supported Bob's hunch and my decision. No one has ever had an eye for orchid relationships like Bob has or is as willing to share information as he."

**ERIC HÁGSATER (ASOCIACIÓN MEXICANA DE ORQUIDEOLOGÍA):**

"I first became acquainted with Bob at the 7th World Orchid Conference in Medellín, Colombia, in 1972. At the time the genus *Epidendrum* had already caught his eye, and I was immediately attracted to the colorful Andean species, which



have proven so difficult to understand. That was the beginning of a very fruitful relationship between us and also a generation of Mexican botanists and amateurs. I offered to publish his book, *The Genus Encyclia in Mexico* (1974), in both English and Spanish; a second edition in English was necessary to satisfy the demand. In the ensuing 30 years or so, I had the opportunity to travel with Bob not only to many corners of Mexico but also Guatemala, Panama, Costa Rica and Colombia. Bob was present at the inauguration of the new home of the Herbario AMO in Mexico City in January 2002, when all Mexican orchid students gathered, including Gerardo Salazar, the late Roberto González Tamayo, Rodolfo Solano and the late Miguel Soto. It was Bob's style of guidance and openness to share his knowledge and work with younger generations that has served as the basis for the teamwork at the AMO Herbarium. In 2005 Bob joined us in coauthoring *Las Orquideas de México*, now in its second printing.

It is with great pleasure that the Instituto de Biología of the Universidad Nacional Autónoma de México, the Asociación Mexicana de Orquideología and the AMO Herbarium have joined to present a certificate of recognition to Robert Dressler for over four decades of support and sharing of his knowledge and friendship with the Mexican and world orchid community. Thank you, Bob."

At that point in the event, Eric handed Bob the certificate amidst a standing ovation in the auditorium.

Today six academic generations of orchid researchers owe their careers in large part to Bob Dressler's imposing productivity and willingness to collaborate and share his vast knowledge. His hearty chuckle and modest demeanor invite approach by anyone who might otherwise be reticent to ask a question of such an extraordinarily brilliant scientist. Bob has shown mastery of the Neotropical flora and fauna, but he has also shown all of us that nature and its preservation should be our highest priorities. As those who spoke at the tribute attested, he is clearly a biologist for all seasons, one who will live on in his respected publications and in our hearts.

#### Acknowledgments

I thank my longtime friend Kerry A. Dressler for supplying most of the biographical information and photographs. Her diligence in compiling all the bibliographical and taxonomic information outshines anything that



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[11] *Sobralia kerryae* Dressler. Described in 1998 to honor Kerry Dressler, Bob's wife and field partner. This elegant species is found from Costa Rica to western Panama. Dr. Dressler collected the type specimen in cut-over forest at 3,770 feet (1,150 m) elevation and described the plant as epiphytic, approximately 3 ¼ feet (1 m) tall. As with most sobralias, flowers last a single day but many flowers are produced over time from the mature stem.

anyone else could have achieved, so we all are grateful for her persistence, efficiency and, most of all, her love for Bob.

—Alec M. Pridgeon, PhD, is Conference Chairman of the 22<sup>nd</sup> World Orchid Conference (WOC22.com) to be held in Guayaquil, Ecuador, in November 2017.

## Dressler by the Numbers

**Taxa described:** 12 higher orchid taxa, 18 orchid genera, 228 orchid species, 10 other plant species, 38 bee species

**New combinations:** 157 orchid taxa, 10 others

**Publications:** eight books, 279 papers

**Commemorative epithets:** six orchid genera, 41 orchid species, 53 other plant species, seven animal species (bees, shrimp, fly, parasitoid wasp)

**Honors (some):** Fellow, American Association for the Advancement of Science; Gold Medal of Achievement, American Orchid Society; Henry Allan Gleason Award, New York Botanical Garden; Silver Medal, Massachusetts Horticultural Society; Medal de Premio Lankester al Arte y la Ciencia de las Orquideas