

Dr. William Mark Whitten (1954–2019)

By Mario Blanco, Mark Chase, Lorena Endara, Tom Mirenda and Kurt Neubig

If timeless odes were penned, to immortalize your legacy the true essence of our friend, would still be lost entirely. We cannot do you justice, though through our sorrow we may try. An unsung hero leaves us, with nary a goodbye.

THE WORLD OF orchid academia was rocked on April 12, 2019 when the shocking and completely unexpected news that Mark Whitten had passed began to circulate. Many readers of *Orchids* magazine may not be familiar with Mark's contributions to orchidology, but his scholarship, mentorship and influence on modern orchid research are reflected in this magazine. Indeed, his groundbreaking research changed the way many of us understand orchid biology and evolution.

One of us (TM) met Mark at a conference in Ecuador almost two decades ago, and we became instant friends. It was just his nature to be positive and enthusiastic. Over the years, I had the honor of traveling with him to fascinating orchid destinations such as highland Ecuador, southwestern Australia and Jamaica. Indeed, he took the picture of me with *Cyrtochilum ramossissimum* that accompanies all my articles in *Orchids*. He helped clarify many things about orchid biology that I had completely wrong (such as erroneous thinking about co-evolution). I could always depend on him to send me a paper (or an interesting story) about any orchid genus about which I was writing, so if you have read any of my columns, you have absorbed some of his knowledge and wisdom.

He was a mentor to many younger, upcoming orchid scientists, particularly PhD students at the University of Florida (UF, Gainesville), and the Florida Museum of Natural History (FMNH), many of whom have subsequently made their own substantial contributions to orchid science. All of them describe him as a mentor, a father or a brother.

Dr. Mario Blanco, professor at the University of Costa Rica and an ex-Director of Lankester Botanical Gardens in Paraiso, Costa Rica relates the following about Mark:

"Mark was one of five members of my dissertation committee at the University of Florida. In charge of the molecular systematics lab in Norris Williams's lab in the Florida Museum of Natural History, he was extremely knowledgeable of



LORENA ENDARA



MARIO BLANCO

molecular systematics, plant morphology, chemical ecology and pollination biology. Together with Norris, he kept a substantial living collection of tropical orchids in the Museum's greenhouse, a resource that was heavily used by him and by Norris' students. Mark freely shared his knowledge and data with everyone. He provided wise guidance to the students, and encouraged us to both participate in his various projects and to initiate our own projects. He liked to take graduate

- [1] Mark in the paramo of Ecuador near Papallacta at an elevation over 10,000 feet (3,000 m).
- [2] Norris Williams and Mark posing with a plant press full of orchid herbarium specimens at Ecuagenera, all of which served as vouchers for DNA studies. Ivan Portilla can be seen in the background.

students out as a group and treat them to dinner every once in a while. A very kind person, he showed concern not only with the academic progress of the students, but also with their personal well-being. He always spoke in a very clear, calm way and was very patient when explaining procedures. After I graduated from UF, he kept in touch with me, with messages about interesting plants, news from UF, etc.”

Among his most important academic contributions are:

- Together with Norris Williams, he published several scientific articles on the chemical composition of floral fragrances of orchids that are pollinated by male euglossine bees. This was the 1980s, when the relationship between euglossine bees and many orchids was still being deciphered by a small group of researchers. Mark was also instrumental in documenting many of the euglossine bee–orchid relationships in the field, which are generally highly specific and mediated by mixtures of chemical compounds.
- Related to the previous topic, Mark published several scientific articles on many aspects of the natural history of euglossine bees. Together with Robert Dressler, Calaway Dodson and Norris Williams, he gathered one of the most important collections of euglossine bees from throughout Latin America, deposited in the Florida Museum of Natural History. Mark continued to collaborate with other euglossine bee specialists, among them Günter Gerlach, Thomas Eltz and Santiago Ramírez.
- He co-authored scientific studies on the vegetative anatomy of Stanhopeinae, floral anatomy of *Sobralia* and *Elleanthus* and, together with William Louis Stern, developed a method for staining fragrance-producing glands in orchid flowers, making them visible to the naked eye.
- Mark discovered and/or described several species of orchids and other plants new to science. According to a search in the International Plant Names Index, he described or co-described species in the following genera: *Basiphyllaea* (1), *Gongora* (5), *Ornithidium* (1), *Solenidium* (1), *Stanhopea* (1) and *Pitcairnia* (Bromeliaceae, 1). He also co-described two new orchid genera

(*Brasilocycnis* and *Nohawilliamsia*) and one subgenus (*Houlletia* subgen. *Neohoulletia*). The previous lists do not include the many generic transfers that he also authored or co-authored. However, he helped discover or document many other new orchid species and genera, but frequently gave them to other specialists or students for their description and publication.

- Four orchid species were named in Mark’s honor: *Epidendrum whittenii* Hágsater and Dodson, *Lepanthes whittenii* Pupulin and Bogarín, *Maxillaria whittenii* Dodson and *Stanhopea whittenii* Soto-Arenas, Salazar and G. Gerlach; too few, in our opinion, for his large contributions to orchidology.
- Mark made the transition from floral chemistry to molecular biology by traveling first to the University of North Carolina (Chapel Hill) in 1990 to obtain training in DNA techniques in the laboratory of Mark Chase (then an assistant professor in the Biology Department) and later (1994) to the Molecular Systematics Laboratory at the Royal Botanic Gardens, Kew (London), again in collaboration with Mark Chase, with whom he published a series of DNA phylogenetic papers on orchids. He then set up a small DNA laboratory in the Florida Museum of Natural History, in which he and a series of orchid-focused students collected DNA data on orchids.
- Through the analysis of DNA data, Mark made substantial contributions to the knowledge of evolutionary relationships and taxonomic recircumscriptions of many orchid groups, for example: Angraecinae, Arethuseae, Catasetinae, Cymbidiaceae, Laeliinae, Maxillariinae, Oncidiinae, Pleurothallidinae, Spiranthinae, Stanhopeinae, Vandeeae, Zygopetalinae, etc. This involved a long-standing collaborations with many researchers throughout the world.

Dr. Lorena Endara, a Postdoctoral Associate in the department of biology, at UF wrote the following:

“Mark was my academic brother and I am grateful that he was also my friend. I will always remember him as a kind person who legitimately cared for people. Mark was a true mentor and facilitated science for so many. He welcomed everyone in the lab and shared his incredible knowledge and resources with so much generosity.



KEN CAMERON

[3] Mark Whitten (left) and Tom Mirenda (right).

Academically, he always challenged my ideas with some of the most exquisite arguments, he always gave me examples of cases that broke the rule to my generalizations, and he always shared some obscure papers that molded or enriched my hypotheses. Most delightfully, Mark always added a spark of humor to everything — it did not matter how terrible the situation was — he always found a way to make me laugh. He was a true and irreplaceable mentor.

Regarding his legacy to orchid biology, Mark will most likely be remembered for his contributions to orchid systematics and his pioneering work on the mechanisms of orchid speciation mediated by fragrances, ideas that changed the way in which we think about orchid biology and co-evolution. Although Mark worked primarily with bees and I worked in pollination systems that are fly-mediated, Mark was always curious and supportive of my research and our conversations were an intellectual treat that I will always treasure.”

Dr. Kurt Neubig, now a professor and herbarium curator at Southern Illinois University poignantly added the following:

“Mark was a father, brother, friend and mentor to me; and he loved my son Henry so much, which made me love him more. We were planning a trip to see him next month and I was going to make him go to the Harry Potter theme park in Orlando with us. He said that Henry was the only person in the world he would do that for. I will miss him dearly.”

Indeed Kurt, all of us who knew him, will miss him dearly as well.