

A scenic view of a tropical coastline. In the foreground, a white motorboat is on the water. In the middle ground, a village with colorful houses is built on the shore. The background is a dense forest of trees. A bright rainbow is visible in the sky, arching over the water and forest. The sky is a mix of blue and white clouds.

Beachcombing for ORCHIDS

Seram Island, South Moluccas

Text and photos by Martin Motes

Taxonomy often takes one to faraway places, but typically the only delight the eye finds is in herbarium specimens of plants that have been dead a century or more. Perhaps, then, it shouldn't be surprising that the pursuit of a living specimen of the first *Vanda* orchid species described by western science, *Vanda furva*, led me almost to the farthest reaches of Indonesia.

First described and illustrated by Georg Eberhard Rumphius in the 17th century (the type specimen is his drawing!), *Vanda furva* has been a source of confusion for more than 300 years. Determined to get the identity of *V. furva* straight for the monograph on the genus *Vanda*, I decided I needed to visit the South Moluccas, where Rumphius had found the species growing in mangrove trees. In 2011, I flew to the island chain's main city, Ambon, and set out in search of *V. furva*. It would not be easy to find the plant, nor Rumphius' other *Vanda*, *V. saxatilis*,



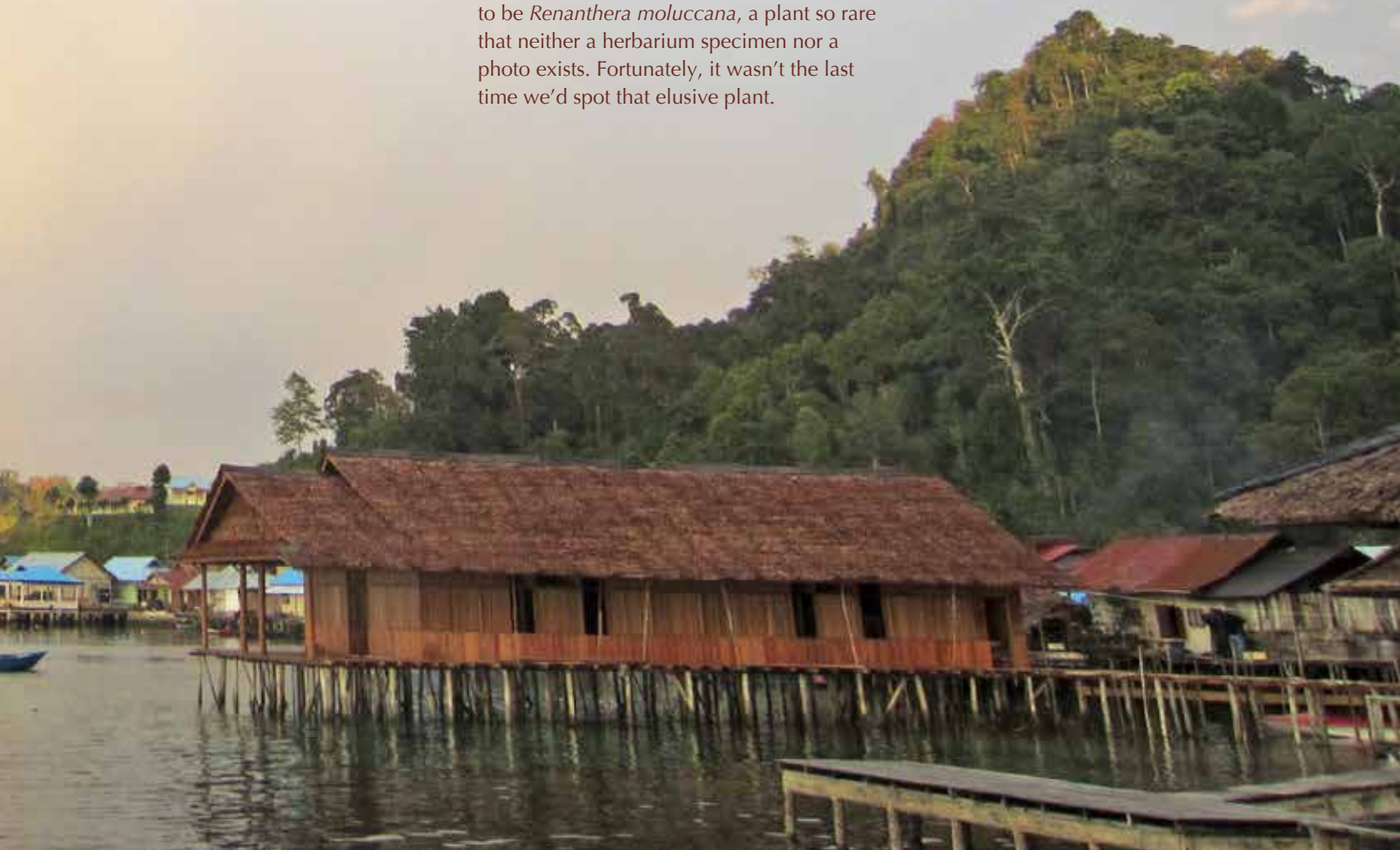
The first photo of *V. furva*, 300 years after it was described.

as the mangrove habitat and trees where Rumphius had found *V. furva* were almost entirely gone and neither species could be found in the region's dooryard gardens. Ten days of searching the coastal roads of Ambon and the nearby islands of Seram and Boru failed to yield either of Rumphius' vandas.

So, last year, I decided to return and take another tack. I began my trip similarly, flying into Ambon. Upon landing, I met with my guide, Victor, who immediately provided valuable assistance. I showed him Rumphius' drawings of *V. furva* and *V. saxatilis*, and he thought that he had seen similar plants on the north coast of the largest Moluccan island, Seram. Early the next morning, we set out by ferry north from Ambon to Seram's south coast. There, a car picked us up, stopped to get Victor's wife, Cicili (a "guide trainee" who relished the opportunity to practice her English) and headed over the mountains to the island's north coast. Along the way, we made several stops to photograph orchids in situ—sadly, the most visible were on the canopy branches of forest trees that had been felled for lumber. In one very exciting moment, looking high up in the canopy of a standing tree, we saw what appeared possibly to be *Renanthera moluccana*, a plant so rare that neither a herbarium specimen nor a photo exists. Fortunately, it wasn't the last time we'd spot that elusive plant.

On Seram's north coast, we boarded a skiff, which traveled several kilometers across the open seas to our lodge. Constructed largely of Sago palm frond lumber, it perched on pillars above a coral reef resplendent with colorful fish, anemones and other sea life (including sea cucumbers). Next morning, we headed out to search for the vandas in a long boat with two crew from the lodge.

Our first stop, a sheer rock cliff sparsely dotted with trees, proved fruitless; we found only the ubiquitous *Vandopsis lissochiloides*, which from a distance we had presumed to be *V. saxatilis*. Our second stop, however, proved to be one of the most unique littoral (the intertidal zone of a beach) habitats on the planet. A tree-covered mountainside plunged at a 75-degree angle to a coral reef, where it broke into small patches of white sand punctuated by rocky outcroppings and caves etched by the sea (some even with stalagmites). Wildlife abounded, from black-tipped sharks hunting in the shallows to frigate birds only half a kilometer away working tuna schools in the fathomless depths of some of the deepest waters in the world.





PREVIOUS PAGE

The fishing village on the north coast of Seram.

ABOVE

The author with *P. suzzanae* and cable cover from near by construction.

Photo by Victor Lawatan

Upon landing on a small beach, we discovered *Phalaenopsis amabilis*, which the locals call “moon flowers,” as well as several species of *Dendrobium*. Walking and wading for barely 20 meters, we came upon a *Vanda* plant in a small mangrove. Although we believed it was either *V. furva* or *V. saxatilis*, the plant was not in flower—so we weren’t able to identify it. Another 15 minutes of walking and wading brought us to the same plant in bloom. The flower looked like Rumphius’ *V. furva*, which he described as having a lip like a tooth. We were certain we had discovered a flowering plant in exactly the habitat in which Rumphius had found it more than 300 years ago!

Continuing along on this incredible coastline, in the space of less than a kilometer we found 20 more orchid species in 12 genera. Most remarkable was the widespread but elusive *Dipodium picta*, a plant so rare only four have been reported in all of northern Australia. A *Cymbidium* relative, this plant has an essentially monopodial growth habit (it grows upward from a single point)—unlike the sympodial (lateral) growth habit of *Cymbidium*. Because the species are related, botanists believe *D. picta* likely represents the evolutionary link between the two diverse groups.

The first day of exploration had accomplished nearly all that I had hoped for from the trip, but Rumphius’ second *Vanda* species had yet to be found. The next morning, we set out from our lodge in the opposite direction into a river estuary. There, we found swamp densely populated with *Sago* palms, punctuated with hardwood trees. The trees supported various orchid species, mostly dendrobiums, but also *Coelogyne*, *Trichoglottis* and *Pholidota*. Then, in a tree overhanging the river, we spotted a *Vanda*—this one broader and with thicker leaves than the species we had found the previous day. Not much farther on, we found another plant in full bloom. The plant had clear yellow, roughly triangular-shaped lips, curiously doubled over on itself. The unique redoubling of the lip created a tooth-like shape, which, together with the yellow color, matched the description of *V. furva* that Rumphius had written. At that point, we realized that the plant we had discovered the day before was, in fact, *V. saxatilis*.

The final pieces had fallen into place and 300 years of puzzlement over Rumphius’ two *Vanda* species was resolved. The unique redoubling of *V. furva*’s lip created the tooth-like shape that Rumphius described. *V. saxatilis*, the plant we had discovered on the first day, also has a tooth-like (as thick as broad) lip typical of many other related *Vanda* species. The true *V. furva* had never been observed and photographed—the photos here are the first ever taken! Because of this, all commentators mistook *V. saxatilis*—our beachside plant, which was known from the South Moluccas—for *V. furva*. While Rumphius’ drawings of the two species’ flowers are not clear enough to have resolved the confusion, his illustration of the plants clearly shows the distinct difference between these two species. Rumphius shows *V. furva* as a large plant with broad leaves and *V. saxatilis* as smaller with narrow leaves. This is just as the two species are in life.

As if our good fortune could not have been greater, growing in the same tree as the true *V. furva* we discovered was a *Renanthera moluccana*, the extremely rare plant we thought we’d glimpsed high in


the forest canopy days before. Although unfortunately not in flower, the *Renanthera* bore an old flower spike, complete with several seedpods. Until then, *R. moluccana* was known only from an illustration in Rumphius' work—a plant with no herbarium specimen nor even a photo known to science. The photo published here is the first record of the plant of *R. moluccana*.

With all of our goals accomplished, we were able to spend the next day exploring a mountain slope. Following a narrow path beside a dry watercourse, we ascended through secondary forest that contained the only remaining large trees old enough to support epiphytic orchids (clove or durian trees). Colorful butterflies—numerous in both quantity and variety—were in constant motion around us, accompanied by beetles, centipedes and other insects. On one large tree, we spotted *Grammatophyllum speciosum*, the largest of orchids. We also encountered a species from the cosmopolitan genus *Vanilla*.

One more task remained that last afternoon before we could return to Ambon the next morning: returning our *Vanda* specimens to the wild. Victor knew of an uninhabited island with mangrove trees that would be



suitable hosts for the specimens, which we had measured and photographed. As it happened, the island was almost precisely halfway between the two locales where we had found the species. We returned our specimens to nature.

After our return to Ambon the next day, Victor and I explored the island a bit, examining roadside weeds and dooryard gardens. As we traveled a coastal road beside an open hillside, I spotted a flash of white in the tall grass. Stopping and returning, we were elated to discover the crown jewel of Rumphius' species, *Platanthera susanna*, which he had named for his beloved wife. Pure white and incredibly intricately formed, *P. susanna* is among the most beautiful orchids in the world. It was growing barely a meter from a newly dug ditch for high-speed cable. The discovery of this exquisite species was a fitting, and thrilling, end to my journey. 

TOP RIGHT
The first photo of *R. moluccana*, so rare no herbarium specimen exists.

BELOW
The incredibly intricate flowers of *P. susanna*.



DISCOVERING *Vanda aliceae*

Text and photo by Martin Motes



Vanda aliceae

Early in the 20th century, Dutch botanist J. J. Smith discovered a *Vanda* species growing on Bacan Island in the north Moluccas of Indonesia. He identified it as *Vanda hastifera*. During research for the monograph of the genus *Vanda*, I came across Smith's drawing of the flower. I quickly realized that, while similar to *V. hastifera*—which had been described in Borneo, this species from 3,000 kilometers away on the other side of the Wallace line was a new species yet to be described.

Someone needed to go out to Bacan Island and rediscover Smith's plant! I, of course, volunteered.

One reaches Bacan by first flying to Ternate in the Moluccas. There, I met my guide, Harris, who arranged our passage on an overnight ferry to Bacan. We arrived in Bacan in the dawn, with plenty of time for exploring the coastline near the port. Later, Harris—who is from Bacan—hooked us up with the local naturalist/crocodile hunter.

We went with him to a deserted island that was literally paved with tens of thousands of *Vandopsis lissochilloides*. There, we found a half-dozen other orchid species in several genera—but not our *Vanda*.

The next morning, we explored more of the coastline and were returning to our hotel when we passed a garden with numerous *Arachnis* and *Dendrobiums* visible over the wall. It is always useful to seek input from local orchid lovers, so we stopped. There in the garden, attached to a tree, was our *Vanda*! After brief bargaining, the lady of the house agreed to a price of 10,000 rupee (a little less than \$10) for a sample. She wanted me to take the entire plant; when told I only the flowers and a single leaf to measure, she pointed to the numerous other orchid flowers she would gladly sell me for the same price.

Armed with our type specimen and numerous pictures, we booked the overnight ferry and returned to Ternate. Upon our return, we visited several other orchid collections and found in one another specimen of the new species. We were told this specimen had been collected on the neighboring island of Halmahera, a likely extension of the range of *V. aliceae*.

The same garden held an un-flowered plant of what was clearly a *Vanda*, its ragged leaf tips a dead give away. It, too, was said to have come from nearby Halmahera, although exactly where was unknown. No known species of *Vanda* have been reported from Halmahera. With just two days left before my return flight, there was only sufficient time to explore that island's more accessible, populated areas. Unfortunately, two days' search yielded no results. Someone will need to go out there and find that second new *Vanda* species. I reckon I'll volunteer.

