Campylocentrum ornithorrhynchum

An Obscure Orchid

by Brenda Oviatt and Bill Nerison

WE THOUGHT THIS would be an interesting species to write about and introduce people to but didn't realize what a can of worms we'd be opening. When Brenda travels and speaks about angraecoids, she describes the genus *Campylocentrum* as "really neat and deserving of more attention by growers — unfortunately, they're NOT widely available." In doing background research, we found more questions than answers about the genus as a whole. It's been challenging for us *and* apparently for many taxonomists as well. We decided to relate what we know about growing *Campylocentrum ornithorrhynchum*, and to include an overview of the genus.

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Campylocentrum is one of two genera of angraecoid that is a New World orchid. Because it is not African as the others are, it is frequently omitted from printed literature about angraecoids. Of these two New World genera, *Campylocentrum* has leafy *and* leafless species. The other genus, *Dendrophylax*, contains exclusively leafless or aphyllous species, the most widely known species being the ghost orchid (*Dendrophylax lindenii*).

Depending on the source, you'll find between 46 and 84 species in the genus (quite a wide range); there are 83 currently listed by the World Checklist of Selected Plant Families (Royal Botanic Gardens–Kew 2017), nine of which have been added in the last four years. We tried to find or compile a complete list that also included the division of the leafy versus leafless species without success. There have been many taxonomic revisions to the genus which further complicates matters. Dariusz L. Szachetko and Marta Kolanowska have made many of the newest additions and have published information on the challenges of finding them in the field and then accurately identifying them. Hopefully their work will continue!

We've had the opportunity to grow five species of *Campylocentrum* (we buy them whenever they're available) and two of them were mislabeled. The hardiest, most prolific grower and bloomer of the five has been *Campylocentrum ornithorrhynchum.* Campylocentrums are not considered rare in nature, but due to their rather diminutive size and the camouflage of the leafless ones, they're often overlooked. An interesting article we found when

[1] This orchid has thrived for us and is grown with a complicated mounting system called a twist tie. Old phone wire works too. The real secret to success to growing these well is revealed within this article.

[2] *Campylocentrum columbianum*; a "leafy" species.

[3] *Campylocentrum grisebachii* (Syn. *burchellii* and *chlororhizum*); a leafless species.

[4] Another of the "leafy" *Campylocentrum* species.

researching was by a researcher at the Federal University of Santa Catarina (UFSC) in Brazil. What he imagined might be a "cute fungus" actually turned out to be *Campylocentrum insulare*; determined to have the smallest orchid flower on the planet. The International Union for Conservation of Nature Red List (2016) has just two species listed, both with unknown population trends, again attesting to the general lack of information on the genus as a whole.

We like finding out the background on the "discovery" and naming of a species. It can be interesting and sometimes confusing. The genus *Campylocentrum* (taxonomically speaking) had a rocky beginning. It was originally established as *Todaroa* in 1845, but that name had already been used for another genus. In 1881 it was renamed *Campylocentrum* and it is the largest vandoid genus in the New World. The name *Campylocentrum* is derived from the Greek *kampylos* (crooked) and *kentron* (spur) of the flowers of the type species. The type species, *Campylocentrum micranthum*, was originally described as *Angraecum micranthum* by John Lindley in 1836 based on a plant supposedly collected in Sierra Leone, Africa. The collecting locality was soon proven inaccurate and there is *still* a question regarding the locale of that first specimen — it may have been Surinam though others suggest it was from Guatemala. To further complicate matters, it seems there are different forms of *Campylocentrum micranthrum*, depending on growing location. We found this to be an interesting conundrum since prior to continental drift (if you believe in that sort of thing), Sierra Leone and Surinam were in close proximity and the similarities between the New World angraecoids and those on the west coast of Africa makes even more sense. *Campylocentrum micranthum* was not the only species to be considered an *Angraecum* (or other angraecoid) upon first examination. *Campylocentrum* is closely allied to the African genus *Angraecum*, but the flowers lack a callus on their lip. Another common synonym for *Campylocentrum* has been *Aeranthes*. *Campylocentrum ornithorrhynchum* was first described as *Angraecum ornithorrhynchum* (1840) and later as *Aeranthes ornithorrhyncha* (1864), and it has gone by its current name since 1903. Certainly some of the beginning "mistakes" in identification and naming were due to the slowness of communication between those involved in research. In our digital age, with DNA testing and molecular genetics, information can be transmitted almost instantly. You might think that this genus would be a taxonomist's dream, but it may be more of a nightmare — for no complete work on the genus seems to exist as of this writing.

Despite the confusion with *Campylocentrum micranthrum*, John Lindley went on to describe other species of *Campylocentrum*, including *Campylocentrum ornithorrhynchum* in 1840. Imagine pressing and drying this plant, sending it halfway around the world for him to examine. It's a wonder that some of the delicate orchids even survived the process in a condition worth viewing! *Campylocentrum ornithorrhynchum*, with its acicular (needle-shaped) leaves can become rather triangular shaped when dried, making it easily confused with *Campylocentrum sellowii*, which actually has triangular-shaped leaves. In our research, it appears unclear whether this discrepancy has been resolved. It may be that the two species are determined to be a single one. If that happens, the name will be *Campylocentrum ornithorrhynchum* since it was described first.

The genus *Campylocentrum* is found in tropical and subtropical America, ranging at their most northerly in Florida, south to Argentina with a high concentration of species in Brazil. Most live in forests with high humidity, or in areas with frequent rain and abundant nocturnal dew. They occur from sea level to 6,560 feet (2,000 m) altitude. All species are epiphytes, growing in filtered light on trees and large shrubs and getting nutrients from decomposing material. The leafless species have chlorophyllous roots that are the source of photosynthesis for them. There is also the rare occurrence of rupicolous species, though it seems these may be simply due to a seed growing in a less-than-ideal location and the adaptability of individual plants. *Campylocentrum ornithorrhynchum* is found only in five states of eastern and southern Brazil at 230 feet (70 m) in elevation. A good friend who bloomed a piece of our plant described the fragrance of the flowers to us as "Soooo amazing! It's in bloom for the first time and the scent of cinnamon and vanilla is divine."

In writing this article, we found the lack of comprehensive information along with the scarcity of *Campylocentrums* for sale disappointing. *Campylocentrum pachyrrhizum* (the leafless bentspur orchid) is included in the Lady Bird Johnson Wildflower Center at the University of Texas at Austin whose mission is to conserve, restore and create healthy landscapes. Though not native to Texas, we found it encouraging to find it included within their collection information. There have been no hybrids registered using any

[5–6] *Campylocentrum ornithorrhynchum.* Notice the difference in the look of the roots of a wet plant (left) and a dry plant (right). The common name for this species is the birds beak *Campylocentrum*, referring to the bent spur of the flower's lip and *ornitho* referring to "bird" for its species name. It takes a sharp eye to notice this.

Campylocentrum species and just five AOS awards given; none to *Campylocentrum ornithorrhynchum* . . . at least not yet.

CULTURE Location, location, location. As with real estate, location is paramount. In the growing space it can mean the difference between life and death for these orchids. We read numerous times that it can be "very difficult" to keep campylocentrums in good condition in collections. It even seems that at one point it was thought that for successful cultivation of the aphyllous species, a *living* tree was essential. Our greatest success has been with *Campylocentrum ornithorrhynchum*, which we've been growing for nine years. Some orchids require movement within our greenhouse seasonally to accommodate their needs. This one has been happy in the same spot year-round, and apparently our first spot was the perfect spot! How many orchids can you hang from a twist tie and have grow and bloom well for you like clockwork? As we write this in mid-April, it's a sunny spring day. We're on the verge of putting the shade cloth on the greenhouse, but it's clear just now. It's just after lunchtime and on the patio outside the greenhouse door our light meter registers 9,960 footcandles. Inside, where the *Campylocentrum ornithorrhynchum* hangs on the north side of a screen, there is a mere 630 footcandles. If we move just a few feet in any direction, the reading doubles. That's not much light! While they could certainly grow in brighter light, they do so well right here and look so healthy, we're not changing a thing. The campylocentrums we've had the most difficulty with seem to require more consistent moisture and we've considered setting up a greenhouse within the greenhouse to accomplish this. We'd refer to campylocentrums as intermediate- to warm-growing orchids. *Campylocentrum ornithorrhynchum* thrives in an area of our greenhouse that has extreme winter lows of 55 F (13 C) and summer highs of 96 F (36 C). We know that our ongoing low winter temperatures and shorter days are detrimental to some of the sensitive species. Late December, January and February are the most difficult months to grow orchids in western Montana and are the times we lose the less tolerant plants.

We feel that reverse osmosis or rainwater is essential, especially for those plants grown mounted or hanging loose in the air like these. We use reverse osmosis water because our well water contains approximately 250 ppm of total dissolved salts and the pH can be as high as 8.0 during some times of the year. Technically, we'd want our total dissolved salts to be 50 ppm or less and the pH closer to 7.0. A small collection of orchids can be cared for with distilled water that has nutrients added. Try to test the water you use on your plants and remove some of the guesswork in growing. We use ½-strength fertilizer and periodically "flush" with clean water. We rotate fertilizer formulas and always provide micronutrients.

HOPE FOR SURVIVAL We feel everyone should have a *Campylocentrum* in their collection. Although the flowers are diminutive, they are abundant, and that alone is a significant attribute. The biggest challenge is to find them for sale, as they are not a big commercial enterprise. As we often lament, this lack of commercialism begs the question: who decides which ones survive and which ones don't? All too often, survival is based on the size or "beauty" of the flowers. Those orchids with small, less brilliantly

colored flowers just don't seem to be as popular and are therefore not as widely reproduced. We feel that, as orchid growers, we owe it to these special plants to help keep them *all* alive and protected; both in situ and ex situ. At this time, we've only been successful reproducing this lone *Campylocentrum* species (by division). We'll keep trying and in the meantime, we encourage everyone to share pollen, seed, information and even divisions if you're able!

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— Brenda Oviatt is an artist and Bill Nerison is an architect. They live on the Clark Fork River in Missoula, Montana (a corner of paradise) with their daughter Marisa, son Tristan and an assortment of animals. They've been growing orchids together for 33 years and in that time have grown in many settings. For the last thirteen years, their orchid growing has focused on the ex situ propagation of endangered angraecoids and the education of hobbyists and growers (website: botanicaltd.com).

[7] This is a view of a screen in our greenhouse. Can you see the *Campylocentrum ornithorrhynchum*?

[8] Let's get closer. Now can you see it?

[9] Our plants stay well hidden, growing within a mass of Spanish moss (*Tillandsia usneoides*).

We're certain (though personally inexperienced) that this is how they are to be seen in nature. All campylocentrums are smallish, rather inconspicuous plants, easily hidden by larger plants (even by showier orchids). That, in combination with the similarity between species in the genus, makes this a challenging one to collect and categorize. Those of us not put off by smallish flowers (and plants), and/or those of us intrigued by the same, will find campylocentrums fascinating.