

FINDING *DROSERA CONDOR* ON THE PERU/ECUADOR BORDER

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In late August 2017, I visited the cities of Cuenca and Loja, in southern Ecuador, for work. I'd planned to spend the Labor Day extended weekend exploring that part of the country for carnivorous plants. My holy grail was the Cordillera del Condor on the Ecuador/Peru border, a series of tepui-like sandstone escarpments extending 150 km along a north-south axis, rising up to 2900 m in altitude (Fig. 1). Geologically and floristically, the Cordillera del Condor is very different from the Andes.

I'd been dreaming of exploring the Cordillera del Condor for over 20 years, ever since the mid 1990's when I saw an herbarium specimen of an odd sundew collected there. It was identified as *Drosera chrysolepis* Taub., but to me it looked more like a yet undescribed taxon from Brazil that at the time I called *D. sp.* "stemless chrysolepis", and which I published as *D. camporupestris* Rivadavia in 2003 (Rivadavia 2003). In that article, I wrote:

"An incomplete specimen identified as *D. chrysolepis* collected on the Cordillera Condor in southern Ecuador... is apparently conspecific with *D. camporupestris*. Yet I hesitate to include it under *D. camporupestris* since it was collected over 4000 km from any of the known sites in Brazil. Further and more complete specimens from Ecuador would need to be examined first."

More herbarium specimens from these remote highlands, on both sides of the Ecuador/Peru border, were indeed uncovered over the years and studied in more detail. Eventually I and four co-authors published this plant as *D. condor* Gonella, A.Fleischm. & Rivadavia in 2016 (Gonella *et al.* 2016), a new species more closely related to two other Andean sundews, the equally mysterious *D. cendeensis* Tamayo & Croizat and *D. peruensis* T.Silva & M.D.Correa.

No matter how much I yearned to see live *D. condor in situ*, I was under no illusion that a 3-day trip would be enough to figure out a path to the top of those remote escarpments. My modest goal



Figure 1: Cordillera del Condor on the Ecuador/Peru border.

for this trip was one of reconnaissance, to scope out the region, talk to locals, gather intel, try to contact potential guides, investigate which of the tepui-like plateaus of the Cordillera del Condor would be more feasible to reach on a future expedition, scope out potential best paths to the top, and maybe even explore some dirt roads with my stick shift 1.0 tiny 2-wheel-drive rental car.

Early on Saturday morning, I left the city of Loja and briefly explored the Podocarpus National Park for epiphytic *Utricularia* (no luck) before driving down the eastern Andean slopes into the steamy Amazonian lowlands. Before doing so, I opened Google Earth on my laptop and began reviewing the numerous markers dotting the Cordillera del Condor, where I'd spent countless hours over the years identifying interesting roads, promising clearings on top of multiple escarpments, and other points of interest. Suddenly I realized I'd neglected to add the actual known locations of *D. condor* gathered from herbarium specimens for its publication! Thanks to modern technology, from southern Ecuador I messaged my friend and *D. condor* co-author Paulo Gonella who quickly sent me the approximate latitudes and longitudes. To my delight, I realized that one of the locations was on top of an escarpment located a mere 400 vertical meters above the end point of the most promising of all roads, and only 2 km in a straight line from road to plateau! But the question was: would there be a trail to the top? The thick cloud forests of that region can make even 100 m an impossible trek.

It was only 3 pm when I arrived at a small village where that dirt road begins winding its way up to the Cordillera Del Condor. On a whim, I decided to make the best of the 2-3 hours of sunlight I had left and explore, never thinking I'd get very far. I was pretty sure I'd have to pay somebody the following morning to drive me up that road with a 4x4, but to my amazement, the dirt road was surprisingly good! So I kept driving higher and higher, navigating past several forks I'd previously marked on Google Maps.

Against all odds, an hour and a half later, having driven nearly 50 km and climbed >1000 vertical meters, I reached the end of the road with my puny rental car. I found a military outpost with two soldiers who were there on a 1-month rotation to guard the Ecuador-Peru border. Bored out of their minds with nothing to do up there, the topic quickly changed from "only military are allowed on the escarpment" to an eager "we'd love to climb up there with you", as I explained that I was a biologist craving to see native carnivorous plants. To my delight, they told me that there was indeed a trail to the top and that during their month-long rotation (which had just started the day before, on September 1st), it would be their job to hike up there to check on a border mark. Did I want to start now or early tomorrow morning?

Not believing my own good fortune, I drove back down the 50 km of windy mountain road, found a little hotel, bought food and drink for the following day, and went to bed early. I woke up at 5:30 am on Sunday and was back up the road at the military outpost a bit past 7 am, bringing my two new best friends some fresh produce and other food items as gifts. I was told there was no dry season in that area, that it was only wet and wetter season. The day before, I had barely glimpsed the Cordillera del Condor through the clouds and occasional rains. But Sunday morning was almost as good as I could wish for: sunny and only partially cloudy, which is how it stayed most of the day, with only occasional drizzle. It was truly my lucky day!

We started hiking at 8 am and after a mere 1.5-hour trek along a muddy but very broad trail (Fig. 2) climbing past mossy cloud forests (where I observed the epiphytic *U. jamesoniana* Oliv. and maybe *U. unifolia* Ruiz & Pav.), we arrived at a secondary plateau at ~2300 m altitude, below what I would quickly learn was the main plateau at ~2400 m (Fig. 3). I was in tepui heaven, it was exactly what I'd dreamed: low vegetation on wet sandy soil. It didn't take long for me to find the first *D. condor*. I never imagined it would've been that easy!



Figure 2: Starting the trek up the Cordillera del Condor from the Ecuadorian military outpost.

This first *D. condor* population was small, growing in a sandy/rocky island surrounded by a swamp – where surprisingly I didn't find a single *Utricularia* or *Genlisea*. Further promising habitats extended to the east, but I was intimidated from hiking in that direction due to signs warning of mine fields left over from the Cenepa War, a border conflict between Ecuador and Peru in 1995, stemming from previous border disagreements and clashes in 1981 and 1941.

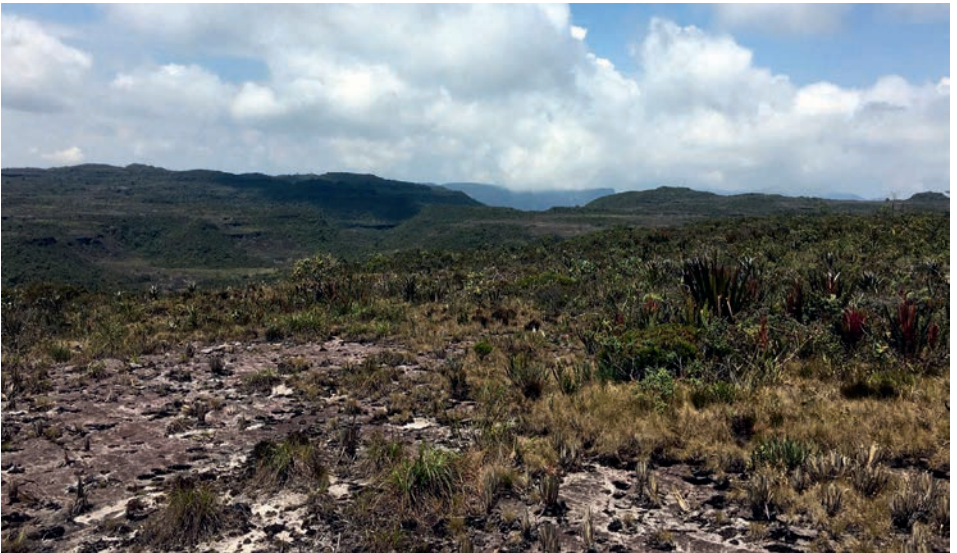


Figure 3: View to the east from the second plateau of the Cordillera del Condor, standing at the large *Drosera condor* population.

Therefore, I had to walk past the tantalizing mine field and hiked with my two armed guides for another 15-20 min up to the main plateau, so they could “inspect” their border mark. At that point a group of 8 men caught up with us – they looked like traffic cops wearing fluorescent orange or yellow vests. They claimed to be employees of a local gold mining company and had climbed the mountains for “research purposes”. On Google Earth I’d seen signs of mining nearby, as well as having driven past dozens of huge trucks on the dirt road going up and down those highlands. One of them told me they were “biologists” – but when I said I was also a biologist and tried asking what they were studying, I only got vague answers.

I didn’t know whether to believe them or not, nor did I care much since I was too busy huffing and puffing my way up the last 100 m to the top, thus not the best time for a chat. Once I reached the apex, I took a few quick pictures at the border mark while catching my breath before heading into the Peruvian side to explore further. I never got to ask those guys any further questions because by the time I returned, they were all gone – including my two military guides. You see, I sort of got myself into a bit of a pickle...

It all started with a fantastic *D. condor* population just below the border mark (Fig. 3), growing at a seepage over a rocky area, as well as on sandy and peaty soil along the edges (more on this later). Looking further north and northeast, I could see a vast plateau. Immediately in front of me was an east-to-west valley polka-dotted with numerous open rocky areas that seemed to be calling to me, begging to be explored. In my mind, I saw rocky fields full of *D. condor*, and (considering my great luck that day) maybe I’d even be fortunate enough to also find the elusive *D. peruensis* which is known from highlands a mere 80 km south!

I had no second thoughts and soon headed downhill through what was initially dense but low vegetation. But the further down I trekked, the denser the vegetation became. Less than half an hour later I was bogged down to a snail’s pace, using my arms more than my legs to wade past dense webs of vines hanging from short moss-covered trees. The floor became a tangle of roots and branches through which my feet would frequently slip, dangling above the true floor somewhere below. What a nightmare!

The further I trudged, the more difficult it became to turn back, psychologically speaking. A drone would’ve come in very handy, allowing me to see how close (or far) I was from the closest rocky area. A machete would’ve been better – but I have a bad history with those things... At last, I had to come to terms that I’d best turn back. Although it was still early in the day (noon-ish), the previous half hour had left me physically exhausted – and I was soon-to-be mentally exhausted too. My arms and legs ached terribly from the difficulty of wading through that thick vegetation. My sense of direction, usually pretty dependable, was thrown off by my physical botanical immersion within the vine-covered pygmy forest, which only allowed a narrow view of the sky above my head.

I was on a remote mountain, separated from my guides by not much more than a few hundred meters. But due to the wind and the fact that I’d been swallowed alive by the thick vegetation, they could scream my name at the top of their lungs without me ever being able to hear their voices – which I later learned is exactly what they did before heading back down the mountain, wondering if I’d ever return.

Fortunately for me though, I wasn’t completely alone... Two local dogs had followed us all the way up from the military outpost and one of them had stuck by my side the whole time, stepping on every *D. condor* I tried to photograph, thinking I was about to feed or pet it. Surprisingly, it stuck by me even in the thickest vegetation, clambering skillfully over roots, between vines, and around large long-stemmed bromeliads. It started as a difficult relationship, with me having to physically lift the annoying dog multiple times to get him out of my pictures and off my precious sundews,



Figure 4: *Drosera condor* at ~2400 m altitude.

or holding him back with one hand while clicking pictures with my other hand. But when I finally surrendered and decided to start the exhausting trek back up the hillside to the border mark, our relationship slowly morphed. Disoriented and extremely fatigued, both physically and mentally, I was practically crawling through the green mesh that surrounded me. I had to stop and lay down multiple times to catch my breath and my bearings. Although my huffing and puffing only intensified the stench of that wet dog, it was nonetheless psychologically very comforting to have him there, my only companion in that vast and remote corner of the world. Soon I was petting him warmly and even sharing my food – while my weary mind considered whether he would eventually feed on my dead body...

Having wasted two valuable hours that I could have spent studying the local CPs (if only I'd made it to another rocky outcrop), I finally made it back up the valley to the border mark. Nobody was there. So, I spent some time catching my breath while studying the large *D. condor* population I'd found there earlier at ~2400 m altitude. My relationship with the smelly dog quickly soured again as it insisted on stepping all over the sundews I was trying to photograph.

I'm sorry to say that *D. condor* is a relatively scraggly and ugly sundew. Most plants had only 1-2 wine-red dewy leaves, sometimes none, surrounded by a rosette of black dead leaves (Fig. 4). It was hard to find nicer ones to photograph! There were lots of inflorescences in fruit, some still in flower, and a few young scapes still unfurling. Unfortunately, no flowers were open that day but the closed petals were a light pinkish in color.

I was hopeful that I would find some interesting terrestrial *Utricularia* on top of those remote tepuis, maybe a *Genlisea*, maybe even a new species of either genus. But alas, I only found a few darned *U. subulata* L. scapes. This was surprising, considering all the wet open spaces that looked perfect for species of both genera. I did see some flowerless *U. unifolia*(?) between the first and second plateaus that seemed to be growing terrestrially, but on closer inspection they were growing on dead logs.

As soon as I started heading down from the border mark, my dog companion finally got tired of me and dashed down the mountain. I was completely alone now, so worn out mentally and physically that I was barely paying attention to the cloud forests and epiphytic *Utricularia* flashing by me as I stumbled my way back down the muddy trail. My body was numb from fatigue, but my mind was on a warm and fuzzy sundew high that I've been fortunate to have experienced several times in my life. It's the kind of high a botanical nerd feels when he finally gets the opportunity to climb an amazing and faraway botanical paradise of a mountain that is home to a very very very rare and unique species he had been chasing down for over 20 years, that he ultimately got to observe in the wild for the first time, and which only a few people have ever seen alive before – which describes my relationship with this ugly and scraggly (but adorable) sundew that is *D. condor*.

References

Gonella, P.M., Fleischmann, A., Rivadavia, F., Neill, D.A., and Sano, P.T. 2016. A revision of *Drosera* (Droseraceae) from the central and northern Andes, including a new species from the Cordillera del Cóndor (Peru and Ecuador). *Plant Syst. Evol.* 302(10): 1419-1432.

Rivadavia, F. 2003. Four new species of sundews, *Drosera* (Droseraceae), from Brazil. *Carniv. Pl. Newslett.* 32(3): 79-92.

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