

## Aug 2011, Namibia Tripp Report

Tuesday, 16 Aug

Today marks the start of Namibian field trip #2. Participating with me again is my dear friend and colleague Kyle Dexter, and two Namibian technicians of the National Botanical Research Institute – Hendrina Hasheela and Leevi Nanyeni. I write this somewhat retroactively as some horrible flu virus caught me on my London to Johannesburg leg of the flight, and had me down for two solid days when I arrived in Windhoek. A couple of quality nights of sweating that bug out has since left me feeling semi-normal again, although I have completely lost my voice and cannot communicate with our new traveling companions. Our flights arrived around noon and we did little besides rent the 4 x 4 truck, buy food and supplies, and sleep off our American jet lag. It is COLD here. Almost freezing, in fact.

Wednesday, 17 Aug

Kyle's bags never made it out of the USA so it was either squander a few precious field days waiting for them to arrive in Windhoek, or buy him so new clothes. We opted for the latter and per advice of our Namibian counterparts, headed to the "Mr. Price" store to buy him enough of a wardrobe to manage for 17 days in the field. We hit the road by lunchtime, reaching Kamanjab just after dark for our first night camping back in the desert wilderness of this great country. Our first destination is the extreme northwest of Namibia – the Hartmann Mountains and Marienflüss in Kaokoland – precisely the place we tried to reach last time, but failed. This time, we are going in with a better truck (Toyota Landcruiser), two spares, a highlift jack, and a second vehicle (i.e., Leevi and Hendrina). Never know when serious trouble will arise. All in all, a much sounder plan than our first attempt.

Thursday, 18 Aug

This morning we collected in and around the area we camped – a series of large boulders perfectly stacked to form a small, nearly symmetrical mound. This is Vrydheim Farm. We talked to the landowner for some time about what we were doing; turns out, he has a keen sense of ecology about him even though not trained in the discipline, so it was a pleasure to have an exchange about what it was exactly that we were seeking on his land. Afterwards, we headed for the Grootberg Mountains in an attempt to recollect the new species of *Barleria* that we found on our last trip, which we named *Barleria grootbergensis*. We already wrote the species description, but our first collections of it lacked fruits. We passed thru Grootbergs, gained some new insight into *Petalidium* species distributions and sympatry, and recollect the new *Barleria* in fruit (so we can now add this to the species description). Slept at Khowarib campground just south of Sesfontein, saw old *Acanth* friends, and re-acknowledged fact that the area is very rich in *Petalidium* and charismatic megafauna.

Friday, 19 Aug

We found an undescribed species of *Ruellia* today! ...which also happened to coincide with Kyle's birthday. Almost certainly new; we are thinking of calling it *Ruellia kaokoana*. It grows

in the most inhospitable of places – right out of the cracks in a steep slate rock wall. It is scrambling-prostrate with deep purple flowers. We left the campground bound for Purros, on the only track that traverses the northwestern portion of the Namibia. Along the way, we collected a great number of species of *Petalidium* that we saw on our first trip including *P. variabile*, *P. lanatum*, and *P. luteo-album*. We also made extensive documentation of sympatry among species. In the Purros campground where our colleagues slept, a Spanish tourist was killed by a rogue elephant. We had opted instead for a spot in the open dark desert north of town, a place that looked like end of world but one we realized in morning was actually surrounded by mountains.

Saturday, 20 Aug

Today we drove to the southern end of Hartmann's valley and en route found our first 'new to us' *Petalidium* of the trip: *Petalidium* cf. *rautanenii*. We also encountered numerous floral color variants of *Ruellia marlothii* including red, white, pink, and lemon yellow forms. To top the day off, we found two additional populations of the white-flowered *Ruellia* sp. nov. that we collected on our last trip. This is the one with the super awkward lower corolla lip that is shaped like a Roman wine drinking cup. I think *Ruellia acetabula* will be a fine name for it. It has an inflorescence structure just like *Ruellia kaokoana* ined., as well as a few other *Ruellia* in this region (*R. aspera*, *R. marlothii*, *R. diversifolia*). I strongly suspect these species form a clade. We camped in a nice riverbed tonight. Leevi likes riverbeds. Kyle likes rises. I like Namibia.

Sunday, 21 Aug

This morning we drove into Hartmann's valley via "Orange Drum" and hiked up a few inselbergs in search of Acanths. Mostly, however, the track is too far from the base of the mountains (where Acanths generally grow) and instead rides the center of the vast, desolate valley. We didn't find much new, but did learn that *Petalidium halimoides* is very clearly the dominant species of the landscape here, along with *P. rautanenii*. We made it about two-thirds of the way up the valley (turned around at the airstrip) before needing to retreat, in order to save sufficient fuel for Marienflüss, which we expect to be a bit richer than Hartmann's (the difference in rainfall between the two valleys is notable in this ultra-arid desert: Hartmann's receives a mere 15 mm of rain a year whereas Marienflüss can receive 50 mm or more. In a pass between Hartmann's and Marien (very near the mouth of the latter), we found an absolutely remarkable, bird-pollinated 'new to us' *Petalidium*: *P. crispum*. It was growing at the base of a mountain that was very Mojave desert-esque. Its leaves are among the most pungent I've encountered with any Acanth – apparently the Himba use it as perfume! We also collected *Houstonia* and *Digitalis* and a few other members of the plant community. Stayed the night in beautiful valley.

Monday, 22 August

This morning we continued our drive up flüss, with eyes open to potentially interesting slopes of the flanking mountains. The valley is vast (maybe 1.5 km wide), and the track occupies the center portion of it. Because it is a conservancy, vehicles are prevented from driving off track. We parked in a wash and hiked through the tall grass towards an interesting slope. The grass

made us somewhat uneasy (never knowing where the leopard lurks), but our longer than expected trek was worth it: on the western side of the valley, on an east-facing slope, we found yet another 'new to us' species of *Petalidium* that was just as remarkable as the last. This one, *Petalidium subcrispum*, is almost certainly the sister species to *Petalidium crispum*. It looks and smells like the latter, but has very divergent, purple, insect-pollinated flowers. This left us scratching heads (still scratching) as to reproductive isolating barriers between the two. Begs for future research! Being short on fuel, we turned the vehicles around and headed south out of the flüss. We made a short stop at the terminus of Van Zyl's pass and found more of *Petalidium crispum*. Back at the mouth of the flüss, aka "Red Drum", we attempted a shortcut back to Oropembe. It proved to be a truly wretch track of 50 km. We reached Oropembe long after dark, stocked up on some liquid supplies at "Oropembe Shop #1" (actually the only shop in town), waved goodbye to the police at the station (actually the only other edifice in town), and drove a further 15 km SW to, you guessed it, a riverbed. Cold and exhilarating air. Dark and beautiful night sky.

Tuesday, 23 Aug:

We departed our sandy wash camp en route back to Windhoek, to begin our second / southern half of the trip. We blew through Purros and Sesfontein and drove on to the Grootberg mountains to recollect *Petalidium giessii*, this time in fruit. This is the magnificently yellow-bracted, yellow-flowered, jasmine-scented species that is almost certainly sister to, but very distinctive from, *Petalidium luteo-album*. We are as yet uncertain as to whether they ever occur in sympatry, but their broader ranges overlap. Around dusk, while Kyle and I were searching for any final signs of Acanth life, I was attacked by a leopard. Okay, so I actually tumbled down several rocks while impatiently descending a large pile of boulders. I landed hard against a giant *Euphorbia* and took off one of its arms. The entire arm was attached to my leg, but not to worry: my binocs around my shoulder and camera in my pocket were unharmed! The gouge (with flanking scratches that resembled leopard claws) was severe enough (adipose tissue exposed) to warrant a clinic visit. Kyle washed it as best as possible with iodine (first aid kit always wise), and we drove to Kamanjab. We paid a night visit to the clinic, and the nurse said the wound was too deep and too wide for stitches. She gave it a proper bandaging after removing final plant parts. Total after-hours treatment price: \$N 20 (~\$2.75 US). We stayed at a guest house in town where we enjoyed hot showers and a nice group dinner. It has been very cold camping in Namibia.

Wednesday, 24 Aug

Today we finished the drive to Windhoek, resupplied, dropped off presses at the herbarium, then slept just north of Rehoboth. At our campsite we collected a spiny *Lycium* and yet another species of *Aptosimum*. Kyle and I both think that the latter genus, much like *Petalidium*, is optimal for evolutionary study in this country.

Thurs, 25 Aug

We bought a few supplies in Rehoboth (including a replacement burner for our stove...something always seems to break) then collected plants behind a lodge just south of

town. We continued our southern track until we found ourselves upon one of three or four species restricted to the south: *Petalidium linifolium* – one of the most beautiful yet! It was locally abundant but not terribly widespread. Continuing on, we reached a volcano that neither of us anticipated, and decided to make an evening of it. During the approach, we passed fields of (and collected) *Kissenia capensis* (Loasaceae) and *Chascanum* (Verbenaceae). We climbed a very steep and rocky path halfway up the volcano (Bukkaros Volcano), and set up camp very near the rim of the crater. Remarkable, to say the least.

Friday, 26 Aug

Neither of us have seen many records of Acanths from this general region of the country, but we are in a very nice habitat and can't count on history to have revealed all its botanical secrets. We had a half day hike into and over the crater, collecting interesting plants along the way. Kyle and I experienced a rather awesome behavior by some baboons, which involved throwing large boulders about the crater bowl. We suspect it was territorial. We pressed plants in the afternoon including a beautiful composite, a grass-like *Dianthus* that Kyle found on top, a legume with fruits that sound like bubble wrap when you press them, and *Euclea*—the only tree around besides the *Aloe* “quivertree”, which is of Joshua Tree fame. The quivertrees were full of remarkable weaver nests. We didn't find much in the way of Acanths. After departing the volcano, we drove to Grunau and set up camp in a strange campground. I don't like campgrounds at all, but at least one or both of our traveling companions find them comfortable, especially given the hot shower opportunity in this chilly winter. We have spent more time looking east at sunset than west. Turns out the anti-sunset in wintertime is just as spectacular as the sunset. The local botany here is very cool – so clearly we have moved into the succulent zone, much like the South African Karoo to our south. The rains fall in the wintertime here (a la Mediterranean fashion), instead of summertime like the rest of Namibia.

Saturday, 27 Aug

Today we drove S of Karasburg towards Ariamsvlei. We are keen to collect one of three species of *Petalidium* that is restricted to southern portions of the range of the genus. And we found it! *Petalidium lucens*: a striking species with bracts that look like they are hand painted. Sounds silly, but true. We also collected a composite with the worst smell of any plant I have yet put my nose to – it literally made me so nauseous I nearly couldn't press it...some species of *Oncophyllum*. Having found our target, we turned around and headed towards Fish River Canyon. Along the way, we found yet another southern species of *Petalidium*...*P. cymbiforme*. This one is very distinct from *P. linifolium* although also linear-leaved. Might very well be the lineage that dispersed from north to south, then speciated in the south. We also found a 'new to us' *Monechma* / *Justicia* that looked like green, leafless sticks. It was so cool. But perhaps not as cool as *Acanthopsis*, which we also found. My first sighting of this genus. We watched a spectacular sunset go down from a canyon overlook, spent 30 minutes looking for *Ruellia aspera* (until we just couldn't see a thing anymore), then camped at a strange roadhouse with our compadres.

Sunday, 28 Aug

We awoke and left our very strange campground and drove all of 5 or 10 km before finding *Ruellia aspera* – !! Spectacular! It is a large shrub with large, lemon-yellow flowers, and, as the name implies, highly asperous leaves. We are now 4 for 4 of the southern species we came to collect. We stayed in the vicinity to study it for awhile...observed many sunbirds in the area, but didn't catch any direct visits. This might be attributable to fact that it was extremely windy this morning, and the birds were mostly hunkered down. We settled for nectar data, then bailed for Orange River Canyon on the South African border. Leevi and Hendrina had to go back to Windhoek. We never saw that endemic and remarkable *Ruellia* again, but did see and collect other wonderful Acanths including a new southern population of *P. setosum* and lots of new to us spiny *Blepharis* and *Barleria* that I still have to identify. Kyle and I shot the rapids in the river, then birded and moved slowly all the way back to Rosh Pinah, then Aus, then finally the diamond country of Luderitz. We arrived just as sun was setting. I had a quick dip in the Benguela current, an idea that Kyle rejected (but it was he who did it last time on Skeleton Coast), then enjoyed dinner at a nice local restaurant before camping just above the ocean.

Monday, 29 Aug

Woke to the ocean waves crashing over boulder-laden shoreline a mere 10 meters from our tent. We grabbed some espresso from a local German-owned coffee shop, pressed a few plants, then headed to the nearby Luderitz Peninsula, which is why we came – Diamond Coast Recreation Area, which borders the Sperregebiet (or “forbidden area”). At this cold and windy locale, we saw seals and penguins and oyster catchers and many other wonderful birds, all from a bizarre landscape of succulent, highly endemic plants and lichens. We departed around noon for our long drive back (ca. 10 hrs) to Windhoek, opting for dirt side roads all the way, which seemed to be quicker than taking the paved highway. On this stretch we found a ‘new to us’ and interesting *Monechma* and also a northern outlier population of *Petalidium linifolium*. We landed at the bed and breakfast by 21:00, in just enough time to hit up our favorite Italian eatery and catch some soccer on the tele. The Barcelona Futbol Club is looking very very sharp.

Tuesday, 30 Aug

We spent all day in the herbarium, and talked with Ezekeil about long term plans for the Namibian Flora (developed a budget, made plans to apply for money from Namibian gov't). We had a nice dinner at the nearby Wienberg, where we enjoyed a South African Shiraz that really didn't taste anything like a Shiraz but more like a Pinotage.

Wednesday Aug 31

Another full day at herbarium. At night, Leevi and Hendrina to us to small family, traditional Namibian food small restaurant. It had 3 tables. I ate Ekundu (the flowers of *Aloe zebra*) and Oshifima (pearl millet porridge plus pap, which is made from corn). Neat place.

Thursday, 1 Aug

This is our last morning in Windhoek. We cleaned out truck and arrived at the herbarium just in time for tea. Departed after lunch for my 39 hour transit back home. En route, I spent a lot of time contemplating correlates of *Petalidium* diversification (and plotting future NSF proposal options) – forming of the cold Benguela current? Further dessication of an already arid

southwestern Africa? Allopatry among mountainous landscapes combined with dispersal limitation? Ecological differentiation in light of tremendous geologic diversity in this country? Hope to get to this someday soon.

We seem to have misplaced our bird and mammal list for this trip. Rats.