

“Meeting the Night: The Science and Mystery of an Endangered Habitat”

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Following is one of a series of essays from my MA project, in which I advocate for the night as an essential habitat, and for natural darkness and silence as qualities vital to planetary wellbeing.

As a part of my place-based investigation of the night, I repeatedly sat with the night on its own terms. Most of these site visits, which I called nightwatches, occurred in the H.J. Andrews Experimental Forest (hereafter Andrews Forest), an ecological research site in the western Cascade Mountains about 90 miles southeast of Corvallis, Oregon. There, in early summer near a gravel road far from human-generated light and noise, I spent my nights alone, awake, and without a flashlight or campfire to cultivate a relationship with the mysterious, and crucial, dark side of day.

Mysteries of the Andrews Forest

Twilight lingers a while before merging with night in the Cascade foothills of early summer. Dinner is two hours behind me, yet only an innuendo of the night season hangs in the air. Songs of unknown birds flit back and forth above me, and a final flutter of hawk wings, probably Cooper's, confound the conifers at the side of the road. I've been in the Andrews Forest since mid-afternoon, and have already set up my tent, hiked a forest trail, and photographed roadside wildflowers in the fading light. It's just past 8 pm.

To prepare for the coming chill of darkness, I pull on a sweatshirt and strap on my light pack bulging with extra layers and wool cap. These are my protection. I usually head for my sleeping bag just as dusk goes gray, but tonight I'm gearing up to mindfully watch it sift, dissolve, and darken to night.

After a gravelly half-mile walk up the road, I step into a mature forest stand and sit on the soft, muted-green ground. A hollow resonance swallows up the snap/drop of small evening sounds in the cool gloom under towering trees. I watch and listen, breathing, blinking. Nothing follows nothing. The dense columns of ancient tree trunks

aren't talking today. Disembodied bird-chirps float out from nearby boughs, and a jet hums overhead. Above the branches that hide the sky, an unseen nighthawk sends down its buzzy call. Although the nighthawk's sound is familiar to me, I can't place the other birdcalls I'm hearing. This adventure is already a humbling one; I have no names for most of what I'm seeing, hearing, and sharing my time with. Of course, they don't have a name for me either.

While the darkness gathers weight, I gaze into the tangled undergrowth. Downslope I see broken branches and rocks that seemingly morph into a crouching cat, poised to pounce. I'm not prone to fearing wild animals, or to fantasizing danger where it isn't. Yet it's easy to transform a clump of limbs into a threatening pose. I'll only say I become more alert—and sympathetic to folks who fear the dark and the wild ones that stalk and spring. A few moments later, I look for my supposed “wildcat,” and now see it as an overgrown rodent, a lot less threatening and a salute to my imagination. I'm ready to move on.

I walk farther up the road where the old growth is more pronounced, where I know there's a dead end and a calm sense of destination. Maybe the night will meet me there. My boots scuffing on gravel shatter the growing silence. Now there's only the road and me and the waiting forest.

I arrive at the grove of ancient Douglas fir giants, and find that I like this place even more than the 80-year-old tree plantation where my tent is set up, where my car with water and food is parked. It is an honor to sit among these thick-skinned, deeply rooted beings who have witnessed sky and mountains for over 300 years. It's discernibly darker now, the white bunchberry blossoms at my feet barely lighting up the forest floor

with their moonlike glow. I watch them dull from silver to gray, moment after spacious moment.

I cannot help but compare this long, leisurely evening to the abrupt ones I experience during the opposite arc of the year. After a winter workday in Corvallis, I sometimes decide to squeeze in a quick hike on a forest trail just six miles north of town. Generally overcast and often drizzly, a restorative hike is often just what I need if I'm able to escape my duties by 3:30 pm. There is nothing bright in western Oregon on a wet, winter afternoon. Due to clouds heavy with rain, you often can't locate the sun, though you know it's on its steady descent westward toward the ocean. A hike on a December afternoon is low-lit, lichen-draped, and moody—a good time to unpocket your problems one by one. But the pace needs to be brisk, for the unchanging dimness deceives you. By 4:15, night is already closing in, and quickly, too, since winter in western Oregon clings dearly to darkness. Too many times, I've emerged from trail to road almost too late as I finish my final quarter-mile to the parking lot. I unlock the car door exhilarated, heart beating hard, thrill-filled for having nearly lost the race to the blackening shadows.

But in the Andrews Forest on a late June evening, night doesn't obscure the trail until after 10 pm. I am in no rush. I have an armload of time to stroll back to my tent. Overhead, the first bold stars spark the pale indigo sky, and at ground level, individual trees melt into one. I'm surrounded on both sides by a barricade of black, not a familiar sight for me, but not a surprising one. I brush away a slithering sense of unease and throw on my windbreaker. My steps crunch at a steady, slow-but-sure pace. I want to be at the pullout where my car's parked before things get blacker still. I'm not going to bed yet, but I'm not going to be brave either.

My ears can hardly pick out anything because of my heavy booted feet, steady as a heartbeat. I think I hear the hint of a new sound, eerie and distant, off to my right. I stop, the sound stops; I walk until, there it is—another faint tone. I stop, and then walk again. This cat-and-mouse between silence and missed sound continues, until I again capture the low volume thing-of-a-sound. It's not an owl, not a grouse; all I know is what it's NOT. Not what I want to hear. It's completely unknown, unearthly, unsavory. It's a muffled roar followed by stillness. An open throat with no consonants, an abbreviated bellow, a chorded haunt—and always with long pauses caught between. My steady graveled footsteps quicken and widen. Don't care if I stumble on a rock, I'm heading to my car, my tent, my home base. I hug my pack around me and I'm glad for my layers of sweater, sweatshirt, and windbreaker. They're all I have: layers of polyester and nylon, not fur, scales or spines. But I refuse to run. Running, I know, inspires swift pursuit-instincts from our predators, which are not the troubled hollow groans floating through the trees. They are the quiet unseen beings that I forgot to worry about until now.

I don't stop to listen anymore, though I keep looking over my shoulder to reassure any and all nocturnal inhabitants that I am *not* running; therefore, I am *not* prey. Time intersects with fear intersects with eternity, yet it doesn't take more than 10 minutes before I'm back at the car. I just lean against its solidity and listen, safe somehow, since after all, I always was. The sorrow-call drifts again and again into the gloomy dark under the star-lit sky, each call separated by a mountain of silence. No one answers. I stand, riveted in place, left to wonder and inwardly wander among the night's unknowns.

Long minutes pass before I relax enough to sit on the roadside, the terrain and wall of tree trunks bathed in opaque black. Cedars, Douglas firs, and hemlocks dominate;

alders and underbrush fill in the gaps. A welcome patch of skyscape hangs above the treetops, individual stars shining silver in the young night. It's surprising to see the earliest bright pinpoints lose their command as fellow stars mutually outshine one another in the maturing night. Meanwhile, the Big Dipper slides slowly along the fringe of high branches. The crescent moon, barely a golden night-light, glimmers like water between scratchy conifer limbs. I am still listening; listening and still, leaning hard into my question. What is the moaning sound-maker and why does it send out its call? But the outer silence continues, and I can now only hear the pulsing heartbeat in my head, nerve-racking. How do you quiet your own rush of blood and surging nerves under this star-grizzled sky, the haunted unknown your only known companion? Even my thoughts take flight.

I, like so many of us, know myself through a constant river of thoughts, which pool into ruminations or rush toward conclusions. Who do I become, when, in the midst of night, my usual current of words and thoughts disappears? My blankness feels neutral in nature, bland at the core. Things seem to go topsy-turvy in the wild presence of night. I look up more than down, and the stars become my closest friends. I stay put instead of moving about, and let the course of night flow around me. It's my inactivity, my anchored surveillance that gives me a center, for if I move, I become peripheral to the shifting backdrop of feathered treetops and bare bend of gravel road. Though this shift may be barely perceptible, where am I without a personal center? I need a place from which to observe, to stand my ground. Without that arbitrary place, there's too much to lose. My way. My self.

Arms crossed over my chest, I continue leaning against my blue Versa, its doors unlocked, in case I need a ready cave. Grand bodies of stars wheel overhead like a primeval clock, and I study the gray gradations of the wooded night. A faint rhythmic sound starts up, close and breathy behind me. Unwanted pangs shoot through my gut. I swivel, listen, and cup my ears with my hands to capture more. The sound persists, an almost inaudible throb in the thicket next to me, and I relax. Whatever it is, it hasn't pounced, and since it continues the low-toned huffing, the creature seems happy enough in my presence. The airy sound adds to the midnight ambience, and over the next hour I wonder if it could be an insect quietly churning out its mating song. A while later, the music of a barred owl floats in the distance. My blinks lengthen. It's time to call it a day.

So I gather my belongings and pick my way over roots and ferns to my tent. I settle on the leafy undergrowth to untie my boots and start inching myself into the tent's narrow entrance. My eyes brush over the ink-black ground at my feet and I notice a tiny fragment of pearlescent light. I move and blink, and yet the droplet of ghost persists. Curiosity shoves sleepiness aside, and I'm suddenly prone on the Earth, my face and nose in the leaves to get an eye-full of this miniscule luminosity. It moves! I'm watching a phantom! Soft-edged, no crispness anywhere, it undulates. It is bigheaded and almost nobodied, a blue-white glow, weird and unbalancing. I don't believe it; I doubt its truth. I was already in a nether world—this only feeds my suspicion that dreams are the only real reason for darkness as black as this. Dreaming of a ghost, though?

I disbelieve my disbelief. I turn on my flashlight, but see nothing crawling in the blinding-bright light. Then, light off, I gaze down again. It's still there, the luminous rice-

sized ribbon of life flowing as before on the night-black foliage. I will ask who this tiny creature is after I return home. A bioluminescent larva? If so, what is his life, his metamorphosed future?

More and more questions, and more mysteries to contemplate. This night has been long. I slip into my sleeping bag.

Months Later: September

A few months after my nightwatches in the Andrews Forest, I finally had a chance to mention the matter of my bioluminescent larva to noted expert, Dr. Chris Marshall. Chris, who curates the Oregon State Arthropod Collection, had just finished leading a group of science writers, myself included, through his labyrinth of arthropod display cabinets on the third floor of Cordley Hall at Oregon State University. A sizable guy with a generous sandy-brown handlebar mustache, he snared our attention with personal anecdotes featuring offbeat insects, effortlessly transporting us from humid South American jungles to frozen Oregon snowfields. His enthusiasm for the three million specimens in his care was infectious, and several of us lingered after his talk to grab a few more moments with the trays of bugs, beetles and butterflies while Chris divulged more details. I could tell that Chris's devotion to the diminutive was equal to his enjoyment of the ostentatious, so I figured he wouldn't mind helping me pin down a name for the little larva that had bewitched me in June like a midnight summer's dream.

As soon as the other writers said their good-byes, I told Chris about my luminous larva, and asked him what it might have been. He was quick with questions, "What month was this? What was the vegetation?" I described the twinflower groundcover

where I'd spied the tiny wiggling larva next to my tent three months earlier. Already familiar with the Andrews Forest, Chris immediately had a couple of ideas. He led me to his office, actually more of a big-hearted nook overfilled with reference books, to show me images on his laptop. "It sounds like you saw a female larviform *Pterotus*; they're in the Andrews. Take a look."

The larva on his screen was shingled with angular edges, much more hickory-hued than my blue-white mystery. "The larva lights up here," he pointed to the larva's posterior. "It's a Douglas fir glow worm."

I shook my head. "Nope, this isn't it. My little guy was super tiny, like a sliver of fingernail. And when I bent down to get a good look at him, his front end looked like Caspar the Friendly Ghost, you know, with a bulbous head." I was feeling a little foolish, but Chris was receptive. "The glowing was in his head, not the tail. He was sort of undulating toward me, head-first, like a worm . . ."

Chris produced another flurry of clicks on his computer and suggested another possibility, an inconspicuous fly of the Mycetophilidae family. "Did you see any webs? Were there other larvae nearby?" He showed me another series of pictures. These looked more likely, since the squiggly creatures sported a bluish-white hue. But all the images displayed large gatherings of faint glowings, like constellations stuck in a messy web. "These live in decaying stumps and forest debris, not commonly on the forest floor. And I don't think they would be found alone or in the Andrews." He was doubtful, but not deterred. He said his colleague, Woody, had a lot of experience with this species. He would give him a call.

I sat down on a nearby folding chair, my notebook propped on my knees so I could scribble down some notes. I heard Chris’s side of the conversation as the two colleagues volleyed questions back and forth. I was grateful they understood my genuine need to know. It wasn’t long before the phone exchange came to a close—and the news was hopeful. Woody had confirmed that members of the Mycetophilidae fly family probably did inhabit the Andrews Forest. The larva likely belonged to the *Orfelia* genus, and would metamorphose to become a small, winged fungus gnat.

“A fungus gnat?” I looked at the image on the computer. It was anything but glamorous, just a bitty, nondescript fly. But I was pleased. At last I was learning more about my most subtle of nighttime acquaintances.

Chris was still cautious. “You said it was blue, right? *Orfelia* larvae are distinctly blue.”

“Well, it was more white than blue, kind of like the moon. But it was a lot bluer than the glow worms.” I could tell my answer wasn’t exactly persuasive.

While Chris prepared for his next meeting, he told me how the larvae’s lanterns attract insect prey, which get trapped in the *Orfelia*’s webby, rotting-debris habitat. Since this didn’t quite fit my verdant tent setting in the Andrews Forest, we agreed to entertain a healthy dose of uncertainty: my moon-drop larva *might* be a fungus fly gnat.

We were both satisfied. I left Chris and his tens of thousands of arthropod specimens, all but giddy as I reflected on the nondescript fungus gnat in its luminous larval form. I tried out its name, “*Orfelia*.” Its non-percussive presence flowed with me out the door.

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“You’re the one who spent the night in the shack? How did you *do* that?” Allie leaned toward me from the edge of her faux leather armchair. She had just realized I was the one who had spent a series of solo nights in the H.J. Andrews Experimental Forest earlier in the summer.

I was attending a September “meet-and-greet” with about a dozen Long Term Ecological Research (LTER) graduate students. It was just past noon, and everyone was casually seated in an offshoot of Richardson Hall’s lobby within arm’s reach of some enticing pizzas. Each of us was affiliated with the Andrews Forest through our research, and we’d just finished with introductions. My colleagues’ science-based fields of concentration were varied, ranging from soils and forest structure to carbon sequestration and stream ecosystems. In contrast, my humanities-based investigation was a place-based inquiry of the nightscape, comprised of firsthand encounters and reflective writing. So, at heart, the gestalt of our group was as well rounded as the thick doughy pizzas.

I hadn’t planned on being anywhere near the center of attention during this LTER gathering, but now all eyes were on me. “Actually, I didn’t sleep in the shelter, I used my tent. But yeah, I’m the one who spent nights there.”

Allie, a stream ecologist, was confident, competent, and animated. She persisted, “Wasn’t it spooky? Jeez, I’m scared of the dark!”

I knew there wasn’t time for me to go into confessions of a mysterious moan floating through trees, or a larval glimmer flowing in midnight leaves, so I just took a few moments to describe the silence and darkness I experienced during my nightwatches. Everyone enjoyed imagining my nocturnal approach to the forest they all knew so well by day.

But it turned out Allie had an altogether different nocturnal story to tell, a tale about a late-summer adventure she'd shared with two fellow researchers, Lindsey and Cedar. By early September, the three of them had spent long, consecutive weeks doing riparian fieldwork in the Andrews Forest, and they were ready to spice things up. They decided to undertake a trip by truck in the gloom of night to the emergency shelter where I had set up camp two months earlier. Their agreement to take on this venture after nightfall made things a little edgy, which is exactly what they were looking for. On a Wednesday evening at 8 p.m., the trio piled into a four-wheel pickup, windows down to provide a breeze, and Allie behind the wheel. Thirty-five bumpy minutes later, they arrived at the cabin's pullout. With a bit of bravado, according to Allie, the three intrepid friends walked the short trail past the outhouse, stepped inside the one-room cabin, and started probing its crannies and corners with the skittish beams of their flashlights.

Since I had prepared many meals in the cabin during my time in the Andrews Forest, I could easily picture what they saw inside: the sturdy wooden table, four wooden chairs, two cobwebby windows, bunk bed, kindling box, tiny wood stove, and rustic wall-to-wall kitchen countertop. Lindsey went to the right, wanting to explore the kitchen area, and Cedar and Allie strode straight ahead to inspect the kindling box. From this point onward, Allie's nighttime story swerved emphatically from the relative mellowness of my own Andrews Forest memories.

Allie and Cedar were kneeling at the kindling bin to check out the stash of outdated newspaper comics while Lindsey investigated the kitchen drawers, when suddenly, four loud thumps resounded through the cabin. Lindsey called out, "Allie, that's not funny—stop!" But Allie and Cedar thought it had been Lindsey. The three

stared at each other, then scanned the cabin, alert. Four more thuds sounded—four solid thumps directly from the roof. Whatever was stomping *right above their heads* was alarmingly large. And heavy. Fear slammed into them. Another clumping sound, and the three flew out the door. They leapt into the truck, sealed themselves inside, and Allie took the wheel. Gravel sprayed from the tires, the truck lurched forward, and they rocketed back toward the Andrews compound, everyone's senses primed. About five frantic miles down the road, an unknown thing brushed the truck's radio antenna; then some tappings sounded on top of the cab—maybe from overhanging branches? But there *were* no low-hanging limbs: another communal bolt of fear!

All eyes were riveted on the road ahead, and Allie rounded a bend. Two small animals suddenly appeared in the headlights, squarely in the truck's path. She rolled the truck to a stop, and the three adventurers stared at what appeared to be baby bobcats. Unconcerned by the hulking truck, the furry kittens romped in the road. While Allie and her companions whispered excitedly at the sight, the kittens' mother—not a bobcat, after all—emerged from the underbrush. Tawny, huge, and long-tailed, she sauntered toward her two babies. Allie described the sudden flurry of cameras and iPhones as everyone tried to capture the scene: a mother mountain lion and her two cubs, shining like royalty in the headlights, at home on the rocky road. When the kittens ventured toward the truck, the mother showed her teeth in a growling hiss (a convincing disciplinary tactic, according to Allie). In their own good time, the babies finally bounded back toward their wary mom. Countless photos later, Allie inched the truck past the feline scene and quietly drove back to the compound. No more rush, no more fear. The three friends had crossed numerous thresholds that night and had ultimately arrived at awe.

Allie ended her story with a wonderful photo flourish. We all got to scroll through a dozen or so cougar images on her phone, frame-able art, in my opinion. I admit it was impossible not to compare my interminably long evenings of starlight and stillness to Allie's rollicking night packed with frights and sights. But, in truth, I left our group feeling even more satisfied than before, even more convinced of the infinite possibility inherent in the nocturnal world. A larva for me, a lion for Allie . . . each, an unexpected pearl from the open hand of the night.

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Within a couple of weeks, another pearl would be revealed to me.

It began as an easy-going occasion in my living room on a crisp September afternoon, with Les Beletsky's book, *Bird Songs*, on my lap. I was using the book's attached digital recorder to revisit some of the bird sounds that had highlighted my summer in the field. I started out with the ethereal trills of the thrushes and moved on to the raucous cries of Clark's nutcrackers and pinyon jays. After I mystified my cat with back-to-back hoots of great-horned, screech, and barred owls, I found the section featuring the nighthawk. I pressed the audio button and listened to the signature sound of the twilight forest: "Beezzt beezzt bzzt." But then. An abrupt, muffled roar. The hoarse sound pierced the marrow of my memory—it was the same eerie moan I had heard floating through the trees last summer! I pressed the audio button again and again, until I felt sure.

It was, indeed, the mysterious sound I had heard each nightfall in the Andrews Forest. But how could the most haunting noise of the summer be created by the most congenial of my nighttime neighbors? I read *Bird Songs*' text to help make sense of this

seeming paradox, and learned it was a mating flight, and not a vocalization, that I'd been hearing all along. The rumbly boom had apparently been caused by air rushing through the male nighthawk's down-flexed wings when he peeled out of his steep courtship dive.

Fortunately, on the final Friday of September, I had a chance to discuss my dubious discovery with Dr. Peter Marra of the Smithsonian Migratory Bird Center. He was on the OSU campus for a day and had a few minutes between meetings to talk to me. When I brought up the topic of nighthawks, he instantly lamented their decline: a discouraging 60% population drop over the past 50 years, primarily because of pesticides and habitat loss. He went on to reminisce about his moments in the field with hungry nighthawks foraging overhead, and praised the deftness of their flight. Then I turned the topic to the sound of the male's courtship dive, and he nodded; he'd heard the booming, too. He gestured to his chest and said, "You can feel it." I shook my head and admitted I hadn't been close enough to detect vibrations. But I'd misunderstood. Dr. Marra touched his palm over his heart and said it again, "You can *feel* it." Ah, yes, I now knew what he meant. I had felt it, too, each time—and deeply.

That simple gesture and those few words confirmed what I needed to know. All those moments of eerie sounds by starlight, I had been hearing the primal beat of a three-ounce bird earnestly romancing the future, "Hear me! Choose me!"

I hope the ladyhawk said 'yes'.