

## **Journey Home**

By David Middleton

Blackburnian warbler; a bird of passage, smaller than a chickadee, flying off into the night, bearing true against the odds, with miles of unknown to come; headed home. It is a passage of generations, with magnetic mileposts and starry paths that birds have navigated for millennia. North America to South America, South America to North America; the swing of the seasons, the rhythms of a year—from Vermont, to away and back again.



Blackburnian Warbler © Jeff Wendorff

The Santa Marta Mountains are on the very northern edge of Colombia, a country itself on the very northern edge of South America. The blue, blue waters of the Caribbean wash the base of the Santa Martas just as blue, blue glacial ice cap their 18,000' summits. In between, impossibly green forests grow— a fabulously lush riot of green tangles and shiny leaves, tall trunks and twisted vines. This is coffee growing country (and chocolate too!), a world apart from the bustle of Bogotá. It is here in thick forests that a wondrous journey, a fantastic journey, a journey home, takes flight.

The Santa Martas are the last stop and first step of a 3200-mile trip that million of birds, including many that nest in Vermont, take twice a year. It is the beginning of the northward spring migration that begins slowly in March, picks up speed in April and accelerates as the days move into May. Nineteen species of warblers plus vireos, tanagers and thrushes move through these mountains. Let's

follow one of these birds, a male Blackburnian warbler, as it travels north with the warming spring to Vermont.

I want you to imagine a big branch on a tree, mid way up say, or near the top, doesn't really matter. Now imagine your branch festooned with clumps of bright green moss and painted with splashes of lichens. Add some small ferns and then imagine in a big husky bromeliad or two looking like the top of a pineapple and then add a tangle of vines and fallen leaves along your branch. You now have in your mind a typical tree branch in a typical mid-elevation forest of the Santa Marta Mountains.

Now place a Blackburnian warbler on your imagined branch in your imagined forest. It has a fire orange face and chest crossed in black, a dark back and a white belly and it seems ablaze against the dark green shadows of the forest. Got it? Good. This is an adult male Blackburnian warbler, a fairly common nesting bird in Vermont. Female Blackburnian warblers are around as well but they are harder to see (and imagine) because of their dull plumage.

Whatever you do don't have your male Blackburnian standing still in your mind's eye- warblers are never quiet or still. Imagine him fidgety and twitchy, hopping around on the limb, nosing under the leaves, and flicking its wings like a bored fourth grader 5 minutes before recess.

A month ago, Blackburnian warblers started to move to this vital stopover from similar forests in Ecuador, Venezuela and interior Colombia. It is the middle of April now and your warbler has been here for 2 weeks. He has been doing nothing but eating, all day, every day, stuffing himself on insects and juicy caterpillars. As he gains weight, he also gains fuel.

Weight can mean the difference between a successful nesting season and even survival. Research has shown that departing birds that are lean and leave with a nutritional deficit do not fly as far on each hop, are therefore more exposed to predators and other hazards on their journey and take longer to reach their destination even if they leave days before fully fueled birds.

Blackburnian warblers are smaller than chickadees (they weigh as much as 2 quarters) but after continuously gorging for weeks they will double their weight. As your bird gets closer to the time to leave his metabolism changes allowing the calories he consumes to be deposited as a thick layer of energy-rich brown fat on his little chest. He has transformed himself into a little round, feathered ball of fat with wings.

He will need all that extra stored energy because one night soon, maybe tonight if the flying conditions are favorable, he will watch the sunset set and orient his internal compass. And then, with the chirps and seets of other migrating birds overhead he will leave your branch and jump into the dark flying alone through the

night, the next day and into the following night before reaching the mountains of Honduras and Guatemala, a distance of about 1200 miles non-stop.

This is not a typical route taken by small songbirds that winter in South America. Most of them travel more indirectly, taking the local up Central America. Very few take the express route across the Caribbean Sea. The Blackburnian warbler has longer, more pointed wings than most other similarly sized songbirds, wings that are more efficient for long distance flights. They also have comparatively shorter tails to reduce drag and increase flight efficiency. These flight adaptations allow it to fly longer distances at a lower metabolic cost than a less specialized migrant.

At the Central American highlands stopover the warbler rests and refuels, gorging again and gaining back lost weight. After a week or so, maybe less if the feeding is good and the flying conditions are favorable, he flies once again alone into the darkness and heads north across the Gulf of Mexico to the Gulf Coast of the United States. He will only land on the Gulf coast if he is tired or if weather forces him to— there is little for him to eat along the coast, no shelter from weather or predators and none of the mountain forests he is looking for. Instead he powers on, flying over the Flatwoods pine belt of the southern Gulf States to the hardwood forests of central Alabama and Georgia; another non-stop journey of 1200 miles.

An experienced migrant knows these stopovers and heads for them directly. A good stopover not only provides plentiful food but also protection from predators and shelter from bad weather. If a stopover is degraded— the forest thinned, a road put through, a vacation house built— it not only puts the warbler at risk during its journey but it affects its nesting success as well. Research has shown that late arriving birds on the breeding ground have no choice but to use inferior nesting sites and if they arrive undernourished then their nesting success will be negatively affected— smaller nestlings and lower survival.

Again he rests and refuels. It is now mid to late April and he feels the urgency to get farther north to find a breeding territory and secure a mate. He must access the progress of Spring though as he goes— arrive too early and the leaves won't be out, and insects will be hard to find but arrive too late and all the prime breeding females will be taken.

From the toe of the southern Appalachians he will make Vermont in two more flights, heading up the spine of the Appalachians through Virginia's Blue Ridge to the Ridge and Valley of Pennsylvania and up past New York's Catskill Mountains to the welcoming forests of Vermont. Many more of his kind will continue their journey to Maine and New Hampshire and into the Canadian Boreal forest.

But how does this tiny bird find his way so unerringly? Most of our songbirds migrate at night. There are no predators then, the flying conditions are better— less heat caused turbulence and cooler temperatures— and daytime can then be devoted

to refueling. Songbirds strongly prefer to fly on clear nights with tailwinds because just like old sailors, they navigate by the stars and get a boost from the helping wind. Birds will also use the north-south oriented geomagnetic field of the Earth to keep them on track. They have magnetic molecules in their bodies that act as miniature compasses and light reactive molecules in their eyes allowing them to sense (think 'see') a representation of the Earth's magnetic field.

But all this astonishing ability only gets your little warbler heading in the right direction, how does it know when to stop and then where to go? Current research strongly suggests that birds use a variety of navigational clues to find home— a magnetic signature, remembered landmarks, characteristic sounds and even the unique smell of home. All these senses lead the warbler back to the acre, back to the tree and even back to the branch where it nested the previous year. For an experienced adult bird this path finding is amazing. For a bird born the previous year that has never migrated north to its nesting grounds it is, well, pick a word; astonishing, fantastic, absolutely mind-boggling? I will call it a simple leap of faith—an astonishing, fantastic, mind-boggling, simple leap of faith.

So this summer, if you see a feathered flash of fire in a treetop, remember the long, long flights of the Blackburnian warbler. Guided only by stars and the turn of the Earth this bird crossed a continent to find home. It is a journey of promise, the promise of home; it is journey of days, of better days ahead. It is a leap of faith, a passage of hope. And it is the grit and the grind to make it so. May we all be so blessed.