



Wildlife Note — 48
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Ruby-Throated Hummingbird

by Chuck Fergus

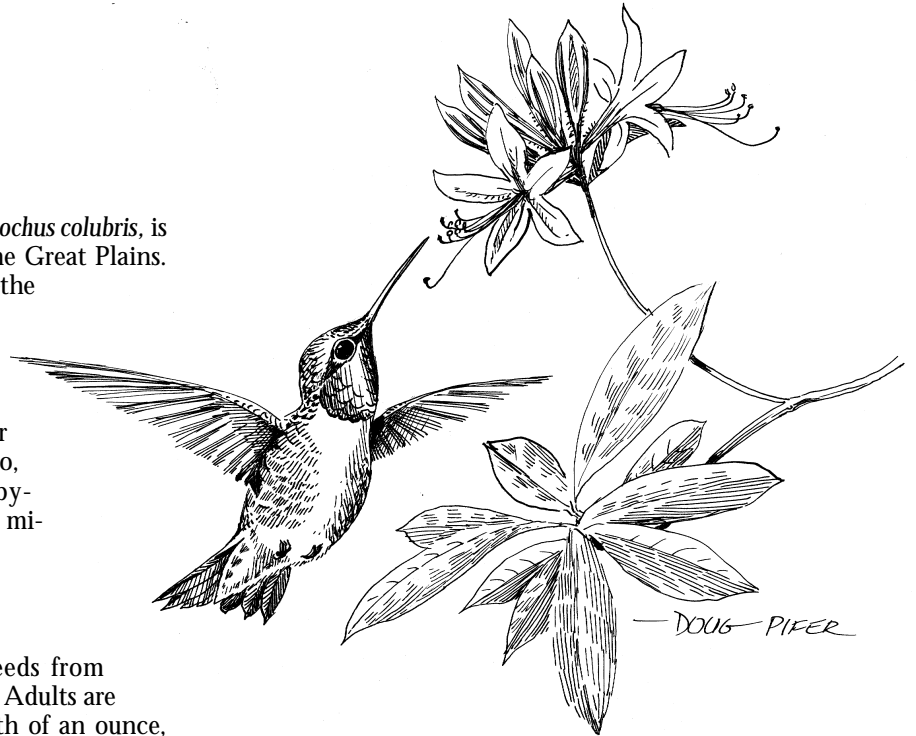
The ruby-throated hummingbird, *Archilochus colubris*, is the only common hummingbird east of the Great Plains. Hummingbirds (Family Trochilidae) live in the New World, with most of the 300-plus species inhabiting the tropics. Hummingbirds hover at flowers and feed on nectar; many also consume insects. Although small and dainty looking, hummingbirds defend their territories as aggressively as larger birds do, and some species—including the ruby-throated—undertake long and strenuous migrations.

Biology

The ruby-throated hummingbird breeds from southern Canada south to the Gulf Coast. Adults are about three inches long and weigh a tenth of an ounce, which is less than a penny. Both males and females have glistening green-bronze backs and pale bellies. The male sports a bright metallic-red gorgette, or throat patch; on the female this area is grayish white. The bill is long and thin. The feet and legs are small and weak and are used for perching rather than for walking or hopping.

Hummingbirds have the largest breast muscles, relative to body size, of all birds. They are unique in their ability to hover in place for extended periods, and to suddenly fly backwards, sideways, or up and down. In flight a ruby-throated hummingbird beats its wings about 53 times per second, and as rapidly as 80 times per second when moving forward. Hummingbirds have flexible shoulder joints that let their wings move in a pattern like a figure eight laid on its side, with both forward and backward strokes generating lift. Minute changes in the angle of the wings let the bird control its speed and course. Scientists have calculated that hovering requires 204 calories per gram of body weight per hour, compared to 20.6 calories needed by the bird at rest. A hummingbird's heart beats more than 10 times per second during activity. The bird must eat almost constantly to fuel its high-speed metabolism.

Ruby-throats insert their bills into flowers, feed on nectar, and in the process, pollinate many plants. They're especially attracted to bright red blossoms; scientists be-



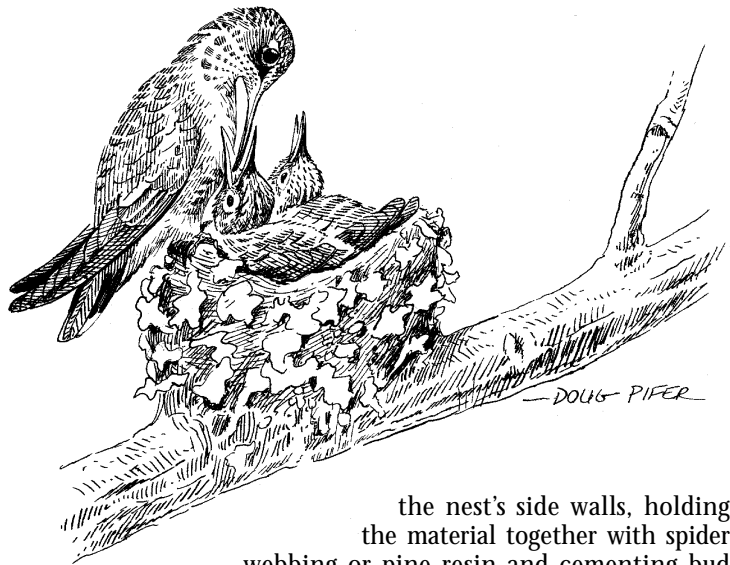
lieve that some plants, including a woodland vine known as the trumpet creeper, evolved red tubular-shaped flowers especially to attract hummingbirds. Ruby-throats take nectar from more than 30 species of flowers, including trumpet creeper, wild bergamot, bee-balm, spotted jewelweed, honeysuckle and cardinal flower. When the structure of a plant permits it, the bird may perch while feeding; otherwise it hovers. A hummingbird does not suck in nectar but rather laps it up using its long, grooved tongue. Hummingbirds also take sap from trees, visiting the rows of small holes, or sap wells, that yellow-bellied sapsuckers excavate in birches and maples; the sap contains sucrose and amino acids. Up to 60 percent of an individual's diet may be insects, including mosquitoes, gnats, fruit flies and small bees. Ruby-throats pluck spiders out of their webs, and glean aphids, small caterpillars, and insect eggs from the leaves and bark of trees.

When sleeping, a hummingbird retracts its neck, points its bill slightly upward, and keeps its body feathers fluffed to reduce heat loss. At times it may enter a torpid state: its temperature drops and its metabolism slows, letting the bird get through the night, or through a cold snap, without starving.

Ruby-throats arrive in Pennsylvania in late April and

early May, with males preceding females by a week or two. Males stake out individual territories of about a quarter of an acre and defend them vigorously against other hummingbirds, both male and female. If food sources are abundant, only 50 feet may separate two males. Male ruby-throats give a string of chipping calls from a perch in the center of their territory. Hummingbirds are solitary, and males and females get together only for courtship and mating. When confronted by a female, the male does a series of U-shaped looping dives with an arc length of three feet or more (these maneuvers may actually be part of the male's territorial defense). Once the female perches, the male's display shifts to a series of side-to-side arcs in which he shows off his colorful throat patch. Most breeding occurs in June, and one male may mate with several females.

The female picks a nest site, usually in a deciduous tree in dense woodland, 5 to 30 feet above ground. Near the tip of a downward-sloping branch she constructs a platform of thistle and dandelion down, attached to the branch with spider silk. She uses more plant down for



the nest's side walls, holding the material together with spider webbing or pine resin and cementing bud scales and lichens to the outside. The finished nest is a soft, flexible cup about two inches wide and an inch and a half high. Some females simply refurbish old nests.

The female lays two oval eggs (occasionally one and rarely three), each about a half inch long by a third of an inch wide and weighing .02 ounces. The eggs are white. Egg laying in Pennsylvania runs from May to July.

The female incubates her clutch for 14 to 16 days; the altricial young are naked and dark gray in color. Their mother feeds them nectar and insects; she inserts her bill into that of a young bird and pumps the food into its gullet.

She broods the nestlings almost constantly, except when foraging. Young ruby-throats' eyes open after nine days, and the female ceases brooding and starts bringing them whole insects clasped in her bill. The young fledge after 18 to 20 days; when they leave the nest, they weigh more than their mother. The female may continue to feed them for four to seven days as they learn to forage. She may mate again and raise a second brood.

After breeding, ruby-throats start building up body fat for migration. An individual's weight can double in as few as 7 to 10 days. Males begin leaving the breeding range in early September; females and juveniles (whose plumage matches the females') may stay until early October. Ruby-throats join many other birds in migrating along ridge tops. They can be seen in good numbers when a strong cold front ushers in a north wind. Ruby-throats winter in southern Florida, Louisiana, Texas and Central America south to Panama. Although migratory routes are poorly documented, it's known that some ruby-throats follow the coast and that others fly nonstop across the Gulf of Mexico.

Hummingbirds are preyed on by house cats, American kestrels, marlins, sharp-shinned hawks, loggerhead shrikes, great-crested flycatchers, and even frogs and bass; blue jays have been seen killing and eating nestlings. But probably more hummingbirds succumb to accidents: crashing into windows, cars, and telecommunications towers. Females have been documented to live for nine years and males for five years.

Habitat

Ruby-throats inhabit open woods, woods edges, gardens and orchards. They are less common in cities, in unbroken heavy forest, and in extensive farming areas. Floodplain forests and areas along streams offer good nesting sites and abundant flowers. In the wintering range, hummingbirds feed on nectar and insects.

Population

In Pennsylvania, *Archilochus colubris* breeds almost statewide. The population here and in the rest of the species' range seems to be stable.

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 Pennsylvania Game Commission
 Bureau of Information and Education
 Dept. MS, 2001 Elmerton Avenue
 Harrisburg, PA 17110-9797
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