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Colorado's Wildlife Company



broad-tailed hummingbirds

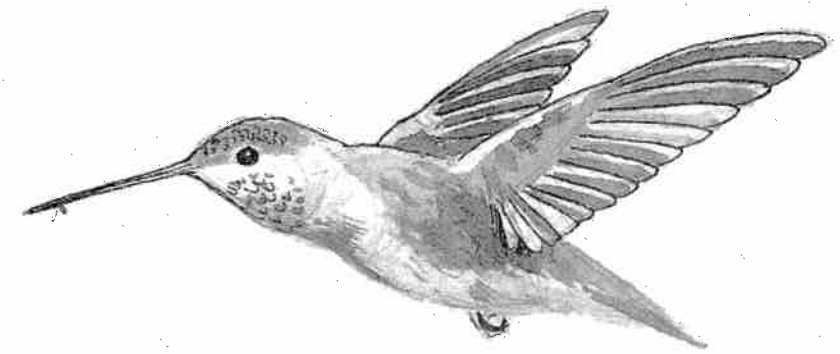
SUMMER'S HUMMERS

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Colorado Hummingbirds



By Mary Taylor Gray

Ask someone to define a hummingbird in one word and you'll get a lesson in onomatopoeia — *buzz, zoom, whizz, zing, whir*. Yet words seem inadequate to describe these animals; to understand hummingbirds, you must see them in action, so unique and different are they from other birds.

Hummers Certainly no human could have planned a creature like the hummingbird. A quivering aeronaut that burns its food like rocket fuel, the hummingbird buzzes, hovers and plummets like a manic bumblebee. It has a sword for a bill, a straw for a tongue, rotor blades for wings, and it sparkles in the sun like a jewel.

Hummingbirds are uniquely American — North, Central and South American. The hummingbird is not a songbird, but belongs to its own family, *Trochilidae* (troe KILL ih dee), named after a bird of Greek legend that was quick enough to dart in and out of a crocodile's mouth without being eaten. This family includes the smallest bird in the world, the bee hummingbird of Cuba, measuring only two inches from bill to tail, and the eight-inch giant hummingbird of the Andes Mountains.

There are more than 300 species of hummingbird — the actual count is debatable — most of them in the Central and South American tropics. Of the 21 species recorded in the United States, only a handful comes very far north of the

Mexican border and only two nest regularly in Colorado. Colorado's most widespread and abundant hummer is the broad-tailed hummingbird, which nests in foothills and mountain forests, usually near water. Every summer visitor to the Colorado Rockies eventually makes the acquaintance of these buzzing green jewels. The rufous hummingbird does not nest here but passes through Colorado's mountains and foothills in July and August. One of the earliest fall migrators, it passes south down the Rockies heading for wintering grounds in Central America. The rufous' stay here is brief, but when the rufous is in town, you know it. Colored a glowing copper, the tiny male rufous is among the most aggressive of hummingbirds. When a rufous arrives, it takes over a feeder like Attila the Hun conquering Rome. Fiercely defending a feeder from all comers, the rufous dive-bombs the larger but more docile broadtails and drives them away.

Black-chinned hummingbirds are fairly common summer nesters in the southwest corner of the state. A handful of other hummingbird species makes an occasional appearance in Colorado — the magnificent, calliope, Anna's and blue-throated — stopping at feeders as they migrate through the state.

Dazzle Why does a hummingbird appear dull or black at times and shimmering with color at others? The hummingbird wears a sequined gown. Its color is due not to pigment but to feather structure. Layers of air-filled plates on the feathers reflect light like tiny prisms, producing a dazzling iridescence. If you've ever watched a perched male hummer, you have probably noticed how he can "flash" his colors, turning into and out of the light — *zzzt, zzzt* — to warn competing males or to impress females.

Buzz Bombers Hummingbirds are the true stunt fliers of birds. They can take off without jumping or getting a running start. They just whirl and go. They can fly forward or backward, hover, wheel and pivot, even fly upside down in a rolling escape maneuver. Humming-

birds owe their aerobatic abilities to structural design. The wing bones corresponding to our upper and lower arms are greatly reduced and almost rigid and the wing is almost all "hand." The hummer's swiveling shoulder joint, built like a ball and socket, offers amazing maneuverability. The bird can tilt and rotate its wings through 180 degrees, as well as move them forward and back. When a hummer hovers, it rows the air in a figure-8, much like a swimmer treading water. The wing turns completely over on both the fore and back strokes, helping the bird to stay aloft but in one place.

These incredibly busy birds may flap their wings 50 times a second when hovering, and up to 200 times a second during courtship flights. With all this attention paid to flight, it's not surprising that hummingbirds have sacrificed some in the walking department. Their feet are tiny and weak, capable of perching but little else. To shift further down a branch or move around its nest, the hummer flips the on-switch and takes flight.

Fueling The Furnace To power all this activity, hummingbirds must take in a tremendous number of calories, sometimes consuming up to five times their body weight daily. To equal a hummingbird's energy consumption, a 170-pound man would need to consume 150,000 calories a day. To meet this high demand, hummers choose high-calorie foods like flower nectar and sugar water from feeders. Broad-tailed hummingbirds also feed at the sap wells drilled in tree bark by sapsuckers, a type of woodpecker. In repeated eat-and-rest sessions throughout the day one hummingbird may visit 1,000 flowers. After feeding for 10 to 15 minutes, the bird rests while its body digests the meal. Hummingbirds learn food sources quickly and return frequently. They become confused when feeders are suddenly moved but will find the feeder's new location quickly.

But hummers cannot live on nectar alone. They also need protein, and you may be surprised to learn these "flower kissers" are active insect-catchers.

Insects are especially important protein for the hummingbird's growing babies. Not only do hummingbirds eat insects trapped in nectar or tree sap, they actively pick them off bark and even pluck flying insects from mid-air. A hummingbird's long bill is not well adapted for catching insects in the air but its quickness and maneuverability on the wing make up for it.

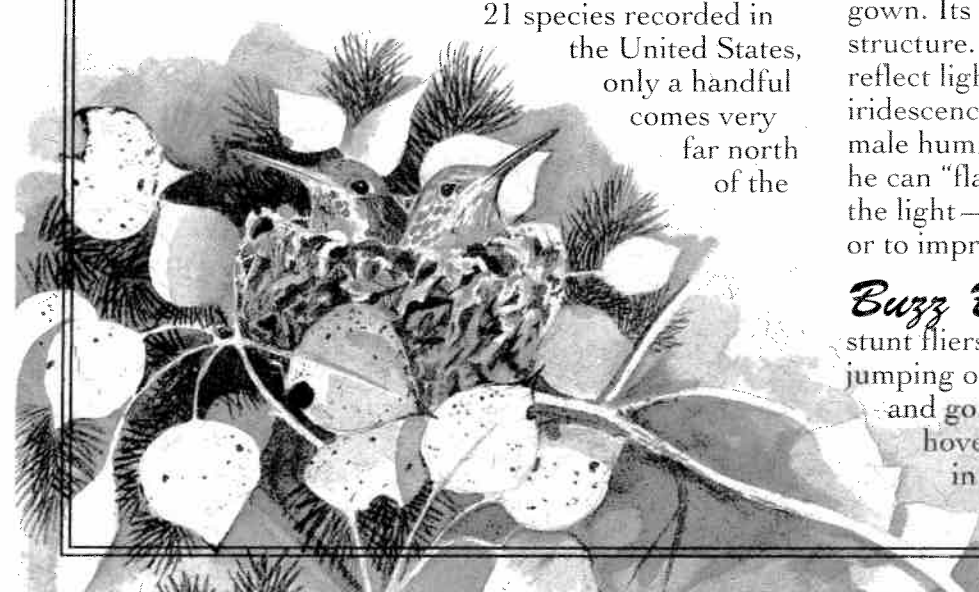
Flowers remain a hummingbird's special sweetheart, and it is a two-way romance. Though hummingbirds will visit flowers of all colors, they are particularly attracted by various shades of red. Many hummingbird flowers are tubular, their nectar lying deep in the blossom out of reach of many insects but accessible to the hummer's long bill and tongue. In exchange for the gift of food, the feeding hummer brushes close to the flower, picking up pollen which brushes off at the next blossom, aiding flower pollination.

Both the hummingbird's long bill and equally long tongue are well-designed tools. The end of the tongue is curled into a pair of tiny tubes but contrary to belief, the bird does not actually suck up liquid. Instead, the tongue's tip soaks up nectar like a sponge. Barbs on the tip snare any insects stuck in the nectar, and nectar and insects are then swallowed normally.

Because the hummingbird is so tiny, it must manage its energy carefully. One side of the coin is frequent, high-calorie meals. The other is a mechanism more familiar in mammals. Hummingbirds become torpid, or physically dormant, to conserve energy during cool nights or cold snaps. For brief periods they slow their metabolism, reducing body temperature from a normal of about 104 degrees to 75 degrees, and pulse from 1,200 beats a minute to 36.

Hummin' Hummingbirds are not silent, but their most dramatic noise-making comes from their feathers not their voice. Hummers do make thin little whistles and chirps, but it is their buzzing flight that impresses us. In Cuba they are known as

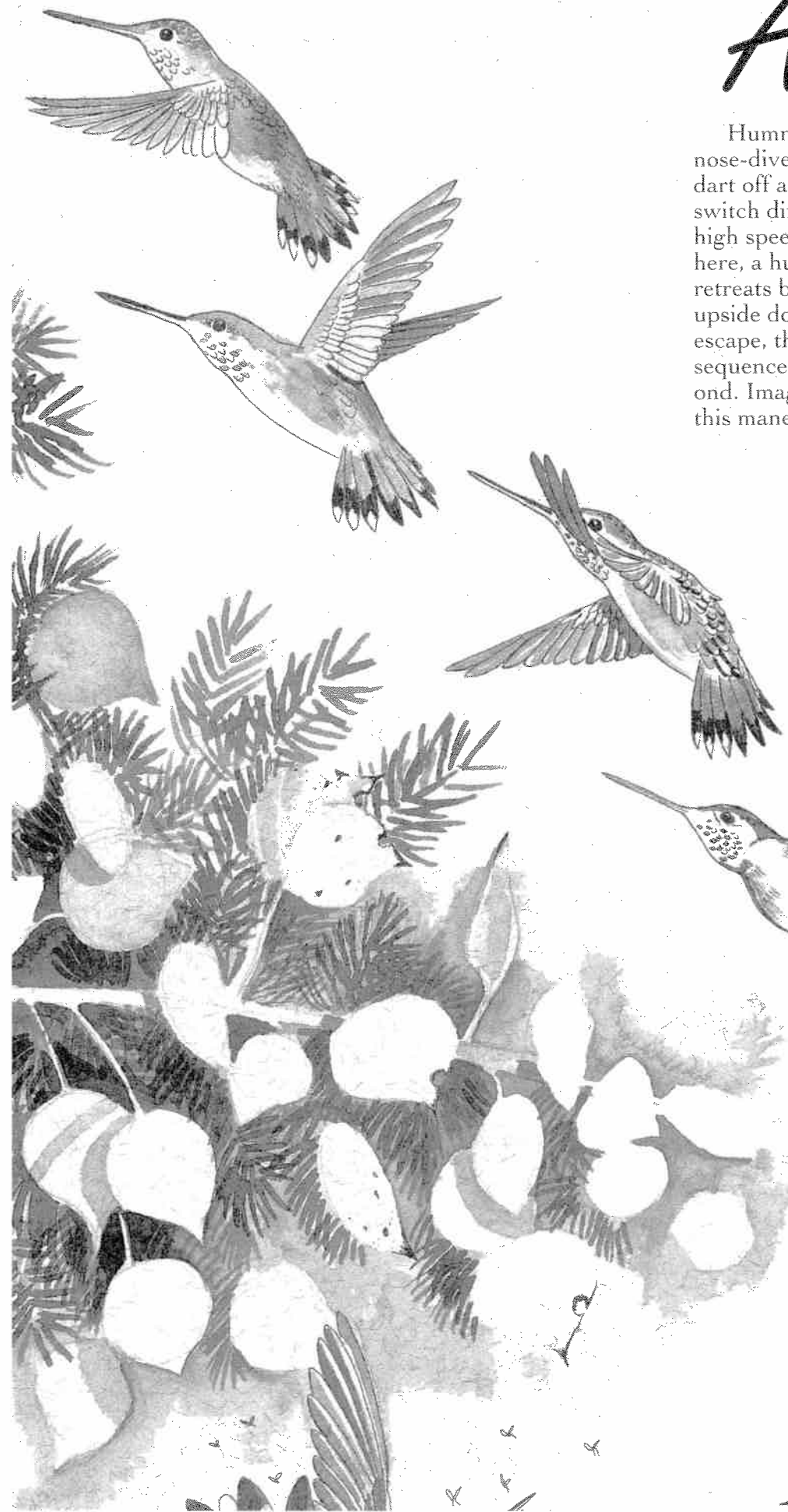
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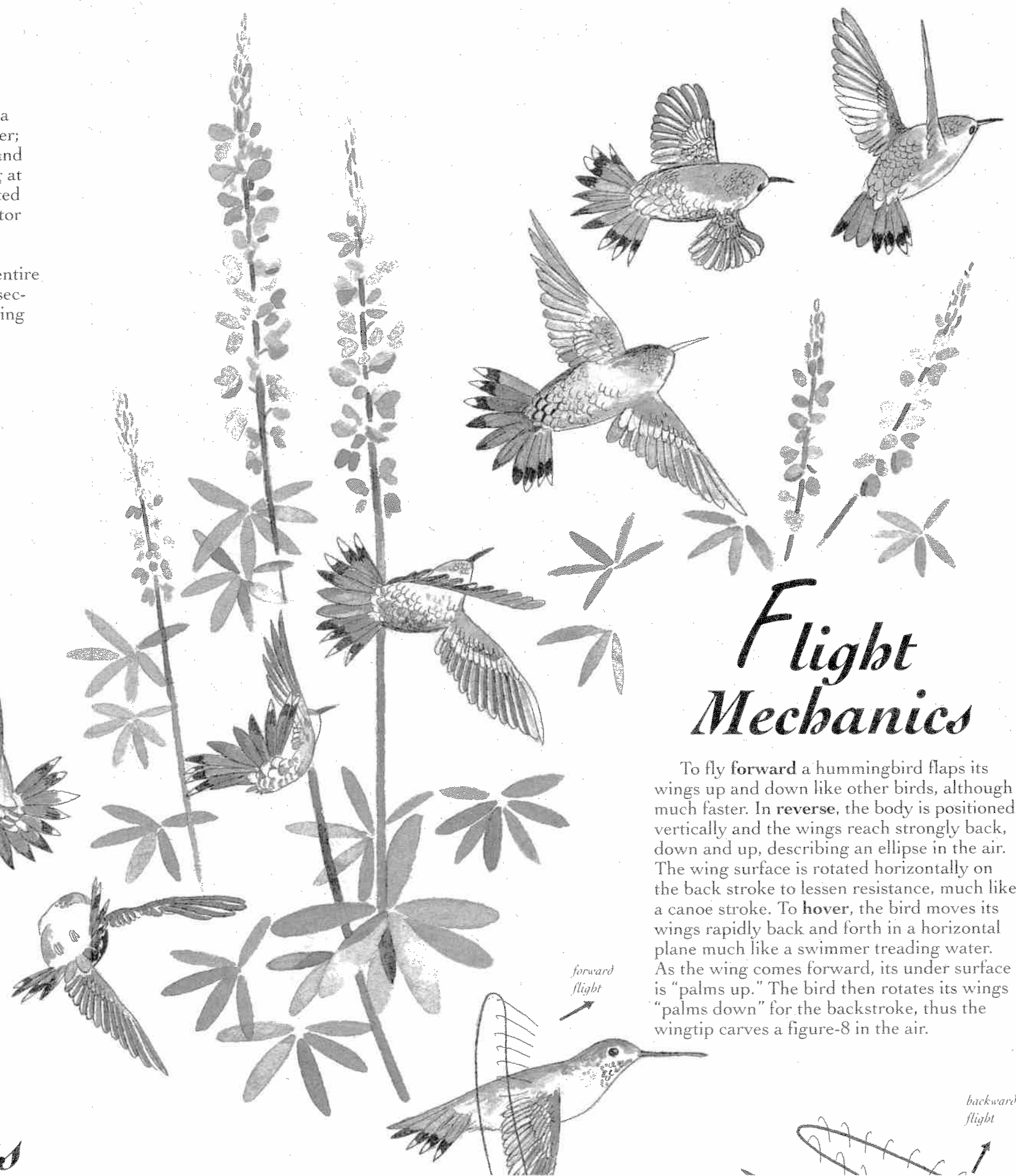
Writing/Editor: Mary Taylor Gray; Graphic Design: Linda Maas; Illustration: Paul Gray; Biological and Program Advisor: Bob Hembrade

Aerobatics

Hummingbirds can hurtle downward in a nose-dive, only to pull up suddenly in a hover; dart off at top speed from a complete stop; and switch direction on a dime even when flying at high speed. In the escape maneuver illustrated here, a hummingbird threatened by a predator retreats backward into a somersault, flying upside down briefly as it executes a rolling escape, then resuming forward flight. This entire sequence happens in about two-tenths of a second. Imagine a bird like a Canada goose trying this maneuver!



Hawking For Insects

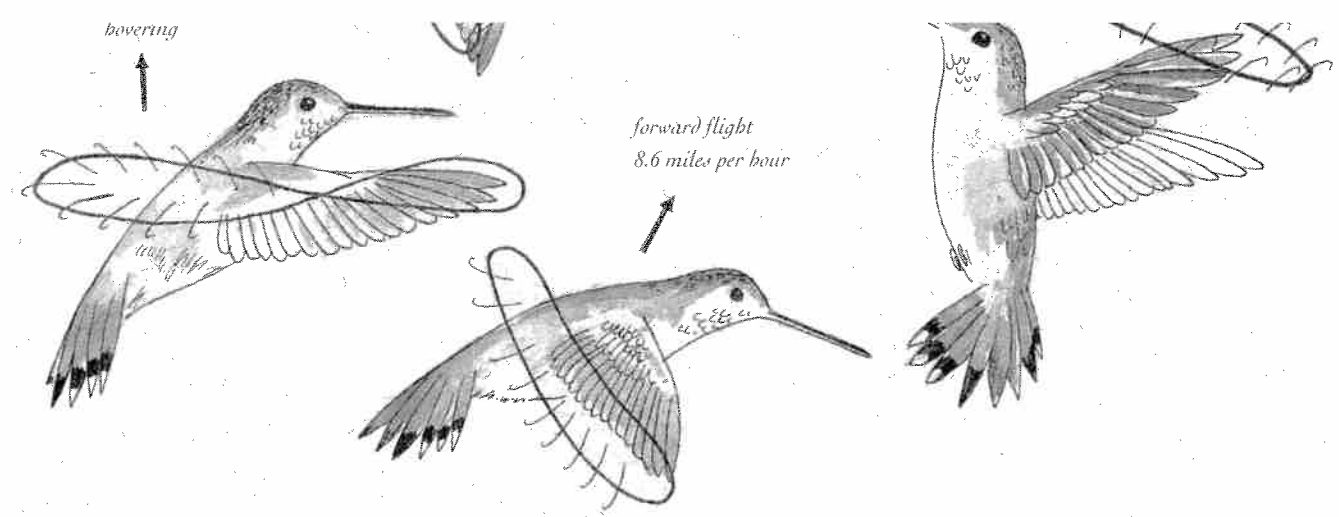


Flight Mechanics

To fly forward a hummingbird flaps its wings up and down like other birds, although much faster. In reverse, the body is positioned vertically and the wings reach strongly back, down and up, describing an ellipse in the air. The wing surface is rotated horizontally on the back stroke to lessen resistance, much like a canoe stroke. To hover, the bird moves its wings rapidly back and forth in a horizontal plane much like a swimmer treading water. As the wing comes forward, its under surface is "palms up." The bird then rotates its wings "palms down" for the backstroke, thus the wingtip carves a figure-8 in the air.



Hummingbirds do not live on flowers alone. They supplement their diet with insects, using hunting strategies more familiar in other birds. They may fly into a cloud of gnats like a swallow, snapping up as many as possible; fly out from a perch like a flycatcher to chase down a flying insect; or pick insects from tree bark like a creeper.



Colorado Hummingbirds (continued from previous page)

zum-zum, in other Caribbean islands, *murmures*. Among North American species, our male broad-tailed hummingbird is the champion soundsman; he literally sings with his wings. Special tapered feathers at the tip of the wings create slots through which wind whistles when the bird flies, making that familiar trilling. The male broadtail puts his whistling wings to good use during courtship, when he performs one of the finest flight shows in the world. Moving on wings rapid-firing at 100 beats per second, he swings up and down in front of the female, carving great U-shaped arcs in the air.

Little Hummers Have you ever seen a Japanese sake cup? It's not much bigger than a thimble. Imagine that tiny cup lined with cattail fluff and spiderweb silk and you have a pretty good idea of a hummingbird nest. The female builds and weaves the nest, hovering above and below it as she pokes with her needle-like bill, as busy as a weaver's shuttlecock. Broadtails return to the same nest site year after year, sometimes building a new nest atop last year's. Though the male hummingbird makes a major display during courtship, he leaves the rest of the homemaking and child care to the female. After building her nest, she lays a clutch of two tiny eggs, each the size of a grapefruit seed. Once the young hatch, she busily hunts insects to feed them. With the long bills of the baby hummers poking skyward, the nest bristles like a pincushion.

Flower Children With mountain wildflowers fading by September, Colorado's broad-tailed hummingbirds must move south, following an endless summer. They winter in Central America, where the flowers never stop blooming.

Gardening For Hummers

A well-planned hummingbird garden can bring these shimmering, avian jewels to your yard. Hummingbirds are attracted to various nectar-bearing blossoms, particularly red, tubular flowers. Try planting scarlet gilia, Indian paintbrush, red columbine, penstemon, scarlet sage. There are numerous good reference books about creating a hummingbird garden, so check your bookstore, library or garden store.



all birds portrayed on this page are rufous hummingbirds



FEEDING HUMMINGBIRDS RESPONSIBLY

by Mary Taylor Gray

When I was a child spending summers at my grandparents' cabin in Estes Park, hummingbirds buzzing about the red-trimmed feeders were as much a part of Colorado as the view of Longs Peak and the mule deer walking through the yard.

Hummers are a joy and a delight and they will graciously accept an invitation to dine if we offer them the right incentive. With their high demand for energy, hummingbirds are always searching for new food sources. To a hummer, the color red means FOOD, which is why a bit of red trim on a feeder attracts them, and why they often fly in to investigate red designs on caps, t-shirts or soda pop cans. Once a hummingbird investigates and finds food, your feeder will be on its list of regular dining spots.

The decision to feed hummingbirds carries along the responsibility to offer them fresh, healthy food and a safe, clean feeding station. Forget the commercial nectars or red dyes. Plain old sugar dissolved in water at a ratio of one part sugar to four parts water is best. This approximates the sweetness of flower nectar. Use only white table sugar. Honey and artificial sweeteners have been shown to be harmful to



hummingbirds. Because of the high sugar level, hummingbird nectar may sour and mold may grow in the feeder in warm weather.

When preparing your sugar-water, boil the water for a few minutes, stir in the sugar and let it cool, then fill the feeder and refrigerate any excess solution.

Keep your feeder clean by rinsing it out between fillings. If you see spots of mold, scrub with a brush. If the mold persists use a 5% dilute bleach solution, then rinse thoroughly.

Replace old nectar with fresh sugar water every week in spring and fall, every two to three days as it warms up, and daily if the temperature rises above 85 degrees.

Responsible feeding goes beyond watching out for the welfare of hummingbirds. In Colorado, hummingbird country is also bear country, and like hummers, bears are attracted to sweet foods. Hummingbird feeders are to black bears what the "hunny pot" was to Winnie-the-Pooh. To avoid attracting bears, and trouble, take down your feeders at night when the bears are about, but the hummers aren't. Bears which associate humans with food often become problem bears and may eventually need to be destroyed. So feed birds, not bears. You will save yourself trouble and you may save a bear's life.

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