

# Captive Breeding of the Sparkling Violet-ear Hummingbird

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There are over 300 species of hummingbirds that occur throughout the Americas, but most species inhabit tropical South America. Belonging to the family Trochilidae of the order Apodiformes, hummingbirds fascinate us with their jewel-like beauty and their amazing flight ability. Not only can they suspend their bodies in midair and hover, they can fly backward, upward, left, right, and even upside down. Their unique design allows the wings to move in almost any direction from the shoulder. Soaring is the only flight capability that they do not possess.

The humming sound that gave these tiny birds their name is made by rapid wing beats which can number from 50-200 beats per second. Hummingbird feet are designed only for perching. They must fly even if they want to move a few inches across a branch.

*A Sparkling Violet Ear  
feeding its baby.*

*A Sparkling Violet Ear baby.*

They lift off and rise straight upward by flapping their wings at high speed. They fly swiftly and can stop suddenly for a precision landing. Hummingbirds have an average life span of three to six years but the record age is 12 years.



## Housing the Sparkling Violet-ear Hummingbird

Sparkling Violet-ear Hummingbirds *Colibri coruscans* were released into the Tropical Rain Forest Aviary at Butterfly World in 1997. Foliage is plentiful with numerous plants, shrubs and trees obtained from the birds' native South American region. At one end of the aviary, misters are positioned around a waterfall with dense foliage, simulating the tropical rain forest home of hummingbirds. The waterfall feeds into a small pond and brook that runs through the aviary. The circular aviary is 100 feet across with a height starting at 12 feet and rising to 27 feet at the top of the circular dome.

## Feeding

For their size, hummingbirds have among the largest appetites in the bird world, feeding every 10 or 15 minutes from dawn until dusk. Since the aviary at Butterfly World was originally built for the survival of butterflies, there is an abundance of nectar-producing plants available for the hummingbirds to feed upon. Some of their favorite plants for sipping nectar are Firebush *Hamelia patens*, Pentas *Pentas lanceolata*, Porterweed *Stachytarpheta* spp., Bubbleia *Buddleia davidii*, and Firespike *Odontonema strictum*.

Also provided for the over 20 individual birds (within four species) are 43 feeders placed throughout the area. These are changed twice a day and filled with "Nektar-Plus," a special nectar manufactured by Nekton. Although the nectar is a complete diet with all the required proteins, carbohydrates and minerals, the hummers also are provided an ample supply of fruit flies (*Drosophila*).

Hummingbirds use their long needle-like bills and special tongues to reach nectar in deep tubular flowers. The last half-inch of the long tongue is divided into equal halves, each grooved on the outer edge to form two tube-like structures. Nectar is drawn into the tongue like liquid is drawn up a straw. Hummingbirds can lick up to 13 times per second, and their stomach holds about five grams of mostly nectar and a few insects.



## Nesting

Generally speaking, the hummingbird nest is a walnut-size structure of plant down, lichens, and moss, bound with spider webs or fine plant fibers. The female lays two eggs that each are less than one-half inch long. After 14-16 days of incubation and four weeks of growing, young hummingbirds leave the nest.

The Sparkling Violet-ears have built many nests since their introduction into the aviary at Butterfly World. They had their first successful fledging in April, 1999. Nesting takes place from mid-November through April. The female is more aggressive during this period than at any other time. She will defend her territory more forcefully than usual and without fear of intruders.

The nesting sight is chosen very carefully. The female hummingbird will fly from branch to branch looking for a spot that suits her. Obviously there are a lot of things for her to consider when choosing her nest site. The nest is usually constructed 10 to 15 feet high in a tree that overhangs a body of water. She looks for a site with two or three perching places within close range of the nest to keep a close watch while she is off the nest. It can take up to three days for her to choose a nest site that she likes.

Nest building takes from eight to 14 days. Sometimes the female will be close to completing the construction when she decides that she does not like the location. She will then search for another spot and reconstruct the nest very rapidly. The construction material is made up of string, hair, cotton, moss, and any other small fibers she can find. Spider webbing is also a key material in the nest building. She will use this sticky substance to hold the materials of the nest together. Small spiders are constantly placed in the aviary to ensure that webbing is always available.

## Mating

Mating occurs near the end of the nest building. The male will enter the female's territory, spreading his tail feathers and hovering back and forth in front of her exposing his purple chest and underside. He will then go into his



*Greg Stoppelmoor, Curator of Birds*

acrobatic circles and dives to lure her into flight. Once she is in flight he will chase her throughout the aviary, darting through trees and obstacles recklessly. Eventually the two hummers will stop and hover in mid air about six feet above ground face to face. They then dart at one another fiercely and tumble around with wings and bodies rattling against each other until they both hit the ground. They sit on the ground briefly and then take off in different directions to catch their breath. They will go through this courtship behavior four or five times during the next hour.

I once thought that copulation occurred in mid air until recent observation. After the courtship display, I observed a female perch on a large leaf pointing her tail up in the air with the male perching within inches. The male would then fly near the female from the rear with the female barely moving. After a few attempts of getting as close to her as possible they would both fly out of sight into dense foliage. I believe that copulation occurred moments later.

## Incubation

Two eggs are laid in a clutch. The first egg is found in the nest two days after the mating incident, and the second egg is laid the following day. Incubation starts when the second egg is laid. The first egg will hatch 14 days from the time the second egg is laid, and the second egg will hatch the following day.

During the first 10 days of incubation, the female sits very tightly on her nest. She leaves the nest about every 25 minutes for periods of four to six minutes. She leaves only to eat or to chase off a neighbor that has gotten too close to her nest. On the last four days of incubation she will leave the nest about every 20 minutes for periods of nine to 12 minutes. She will spend more time feeding now because she begins eating more insects and less nectar. During the earlier part of incubation, she eats more nectar than insects.

## Brooding

The female will brood the babies day and night for the first 10 days,



leaving the nest approximately every 20 minutes to fill up on fruit flies and nectar. Upon returning to the nest, she carefully feeds each baby. After feeding, she positions the babies with her long bill and settles in the nest on top of them to keep them warm.

During the next 10 days she will not brood the babies during the day. They are fast growers and by now have feathers appearing and fill up most of the nest cavity. The mother will perch nearby with a line of sight to the nest about 20 feet away, coming near the nest only if there is an intruder or to feed her young. During this time she will feed the babies every 25 to 30 minutes. I do not know if she broods the babies at night.

In the last days prior to fledging, the babies are stretching the nest with their fast growth and you wonder how they keep from falling out. By now the babies are fully feathered and the mother returns every seven to 35 minutes to feed them. The more frequent returns are a result of her not feeding both babies every time she returns. She now is relying mostly on insects

for food, with an occasional stop at a nearby plant or feeder.

### Fledging

The plump babies fledge at around 25 days of age. Four to five days prior to fledging, they start stretching and exercising their wings. There is much self-preening of their new feathers. Two to three days prior to fledging they test their wings. While vigorously flapping their wings, their bodies lift out of the nest with their feet gripping the nest edge. Occasionally they venture out on the edge of the nest and momentarily perch. Sometimes they get daring and venture out for a few moments onto the branch to which the nest is attached. It does not take much movement of the wind, or even a passing butterfly, for them to flutter back to the nest.

The fledging of the two babies observed occurred on the 25th day. One baby inched out onto a branch to which the nest was attached, sat there for about five minutes, lost its balance and fell to a branch about two feet below. Here it sat nervously for over an hour before taking off again and

disappearing. The second baby was more daring, darting out of the nest and landing on a rock about 20 feet away where it sat collecting itself for about 15 minutes. It eventually took off and flew to a high perching spot in some dense vines where it stayed for most of the day. The mother had no problem finding the two fledglings and fed them both within an hour and a half of their fledging.

### Post Fledging

After fledging, the babies were found perching side by side in the same spot for the first two mornings. The mother continued to feed her young quite readily and chased off intruders that ventured too close to them. The babies, still unsure about flight, struggled to keep their balance as they flew from perch to perch. They were easy to locate since the mother continued to feed them and they did not venture far.

During the next week they were spotted in different areas attempting to assert their individuality. One would spend most of its time low to the ground in a shady area where the mother collects fruit flies, while the other sat high in the thick of a fishtail palm.

Around two weeks after fledging, the babies appeared to start searching for food on their own. They still relied on their mother to feed them and get them through the day. They were completely on their own about 30 days after fledging.

### Conclusion

Very little is known about the breeding and mating habits of the more than 300 species of hummingbirds. Most of the work that has been done in the past has been concentrated on the North American hummingbird species. This is largely due to the difficulty of locating these tiny creatures in the wild.


Butterfly World currently houses five North American species, four South American species, and most recently two species endemic to Jamaica. We are in the paperwork phase of the process required to obtain mates for some of the South American species in addition to acquiring five to six more species for Butterfly World. 

Photo courtesy of author.



*Hummingbird feeders being cleaned and sterilized in the dishwasher.*