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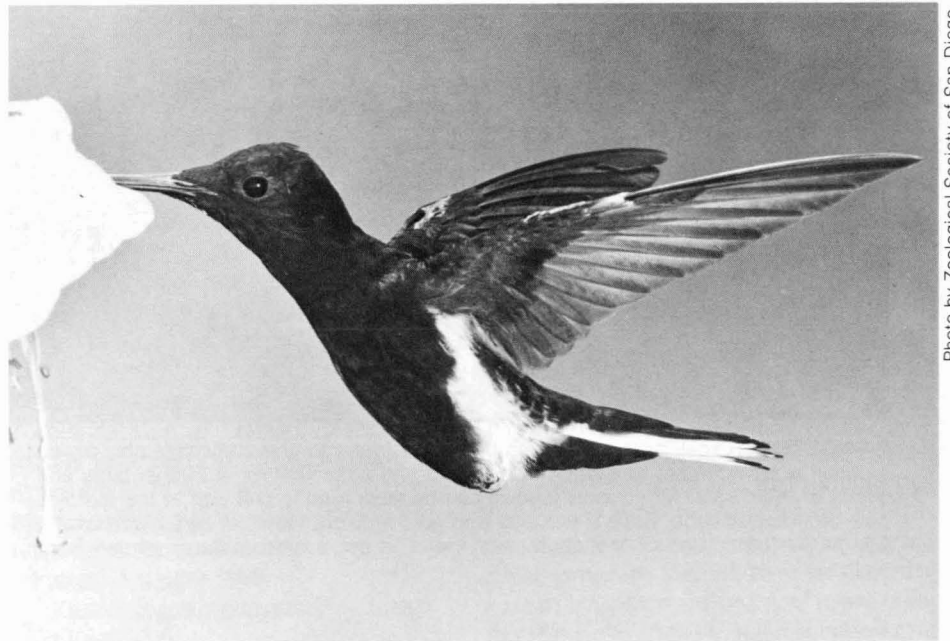
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# The World of Hummingbirds

by Kenton C. Lint  
Curator of Birds, Emeritus  
San Diego Zoo



Pied Jacobin hummingbird (*melanotrochilus fuscus*)

Photo by Zoological Society of San Diego

The Hummingbird family (*Trochilidae*) with 320 species in 123 genera includes not only some of the smallest of birds but also the smallest of warm-blooded animals. We wish to bring you a word picture of their appearance and structure, where they live, how they fly, what they eat, their relations with flowers, their temperament, how they court and build their nests and rear their young, their enemies and their prospects of survival.

The jewels of the avian world are fascinating to all who have the faintest appreciation of animal life.

While we are accustomed to thinking of the hummingbirds as tiny creatures, mere atoms of bird life such as the Cuban Bee Hummingbird (*Calypta helenae*) which is 6.35 cm. in length, yet there are hummingbirds 21.49 cm. in length. The Giant Hum-

mingbird (*Patagona gigas*) of the Andes is as large as the Cedar Waxwing or Cardinal. Hummers vary greatly in colors, plumage, habits and other respects just as they do in size.

Some have short sharp bills like our northern species, Others have immensely long slender bills, either straight as rapiers or curved like scimitars, and are known as swordbills. Still others have short bills curved in a semi-circle and are known as the sickle-billed hummingbirds, while still others have their bills sharply upturned. Each type is designed or adapted for a special purpose — to best serve for exploring certain forms of flowers in search of nectar and minute insects and spiders on which these birds feed.

Most of us have always thought of hummingbirds as having brilliant metallic

plumage and iridescent gem-like throats. Yet there are many species whose plumage shows no trace of bright colors, but is dull, plain brown or gray. Another group is conspicuous with its variety of ornamental tail feathers. Some have long slender tails, forked tails like those of swallows, tails with the central feathers enormously lengthened, tails with feathers curved and turned up, tails with long slender streamers, tails with two long quills tufted with racquet-shaped feathers at their tips, lyre-like tails, and fan-like tails.

There are hummingbirds with beautiful ear-like feathers on their heads, others with gorgets or ruffs about their necks, some with upstanding crests and others with feather "horns" or with stiff fan-like feathers on the sides of their throats. There are even some species that sing very well, similar to warbler and vireo songs.

Unlike other birds which move their wings up and down, hummingbirds flap their wings in a "figure eight" back and forth motion. The wing feathers are linked together by tiny hooklets which hold the barbels firmly, so that no matter in which direction the wing is moving, it always presents a smooth air foil. The hummer's wing is extended almost rigid during flight, with almost all movement originating at the shoulder. A sort of ball and socket joint and powerful muscles enable the bird to perform its unique "rowing" movement. So flexible is the joint that the wing can swivel almost 180° on the backstroke, to enable it to hover motionless. The fastest recorded wingbeat is for a specimen of the Horned Sunbeam (*Heliactin cornutua*) of Brazil. This bird beats its wings at the rate of 90 beats per second. The slowest wingbeat is found in the Giant Hummingbird of the Andes which beats its wings at the rate of 9 to 10 beats per second and can be seen with the naked eye.

Hummers capitalize on their small size and exceptional flying abilities to invade the world of flowers. The wide availability of flowers from ground level to mountain tops has encouraged an amazing diversification in form, structure and color among hummingbirds. They get their tremendous energy from the quick sugars in flower nectar, and their proteins for growth from small insects captured in the same flowers and around ripened fruit. While birds such as honeycreepers, honeyeaters, sunbirds, flower-peckers, lorries, warblers, and tanagers in both hemispheres have adopted nectar feeding to supplement other diets, few live exclusively on nectar, and none gather it entirely while in flight as do the hummers.

Hummingbirds are credited as being quarrelsome and pugnacious, defending

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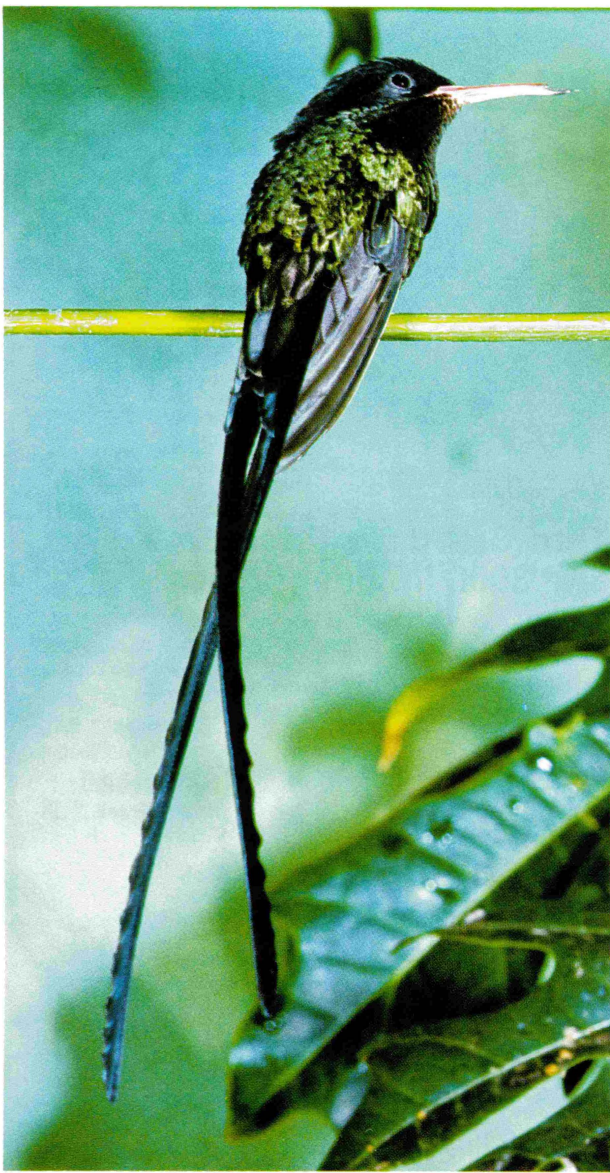
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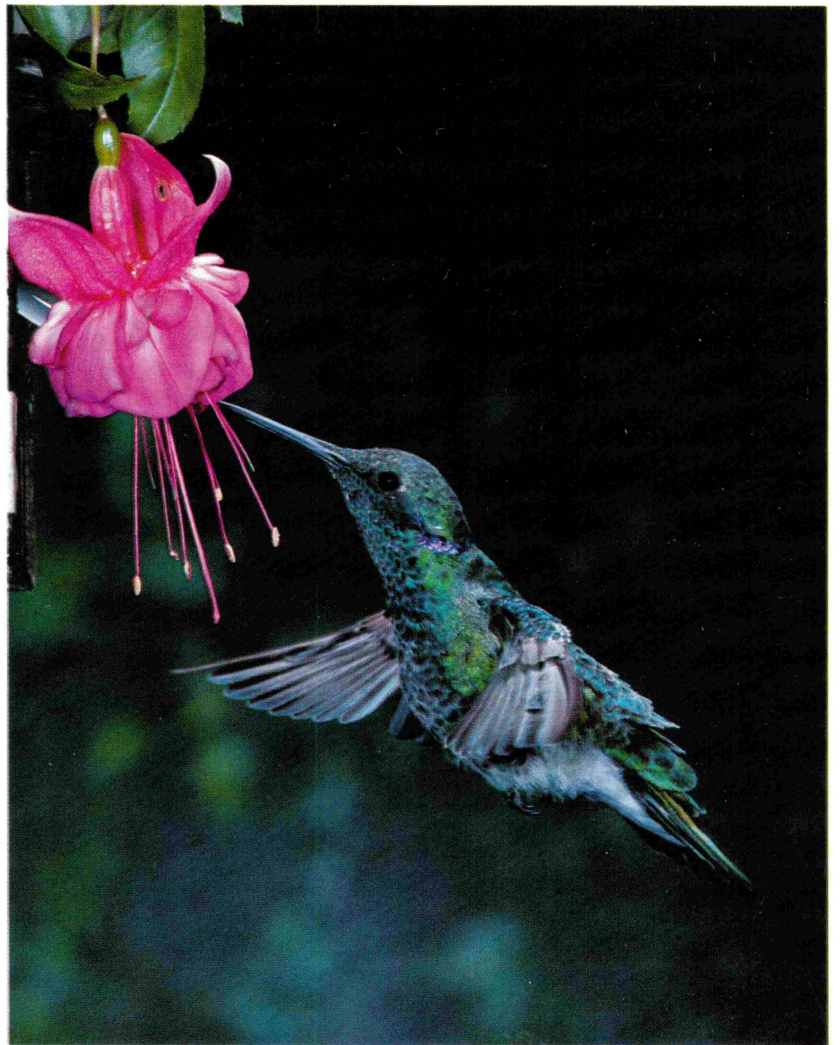
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*Streamer-tailed  
hummingbird*



*Violet-eared hummingbird*



*A tropical  
jewel*



*Ecuadorian racquet-tail hummingbird.*



*Anna hummingbird feeding young.*



*Sickle-billed hummingbird.*



*Versicolored emerald hummingbird (Amazilia versicolor)*

their nesting and feeding territories from any other birds that trespass. They show no fear of adversaries many times their size. Courtships are spectacular — the male birds perform dashing aerial displays, swooping up and around in wide arcs, buzzing their wings in power dives and flashing their colors all for the benefit of their lady loves. Mating is often consummated in flight as well as on tree branches and on the ground. Afterward the male loses interest in his partner.

The female builds the tiny cup nests of plant down and spider webs, often on top of a branch, sometimes in the fork between two branches. In some tropical species the nest is placed underneath the top of a palm leaf; in others it is attached to the sides of cliffs, dirt banks or overhanging rocks. The nests are well camouflaged with lichens and moss and are always difficult to locate.

All species, so far as is known, lay two pure white eggs, and the female alone incubates the eggs and feeds the young by regurgitation. Sometimes she perches on the side of the nest, but more often she hovers above it, poking her long bill recklessly down the nestling's throat and then pumping the food in. For birds with such tiny eggs, the size of an aspirin tablet, hardly a quarter of an inch long, the incubation periods are remarkably long — anywhere from 13 to 19 days. The young are hatched naked with some slight traces of down. The rearing period varies from 19 to 25 days when the young are able to fly and leave the nest. The female continues to feed the nestlings and teaches them to feed by themselves by leading them to flowering plants and shrubs.

Domestic cats remain the number one enemy of all hummingbirds. Hundreds are killed daily by these predators. In Brazil,

the Ferruginous Pygmy Owl (*Glaucidium brasilianum*) feeds entirely on native species of hummingbirds, but the population of owls is small and one hummingbird per day for each little owl has little effect on the abundant hummingbird population.

Although hummingbirds undoubtedly show to best advantage when kept in a large and well-planted enclosure, single birds will live perfectly well in a box-type cage providing it is large enough for them to fly freely. A cage 3 to 5 feet long, 15 to 18 inches deep and 24 inches high is large enough for any species, with the possible exception of the Giant Hummingbird. The number of birds which can be kept together, must, of course, be in proportion to the size of the aviary and only species which are approximately the same size and strength should be chosen. Any which prove to be unduly bad-tempered must be removed and isolated. Plenty of feeding bottles are needed as each bird has a tendency to appropriate one to itself and deny others access to it. Some of the bottles should be hung in the open (but not in the sun) and others among the foliage and close to twigs where the birds can rest, partly concealed, while drinking. The majority of hummingbirds do best at a temperature of 70° — 78°F. (20° — 25°C.) but mountain species can do with a lot less warmth.

Hummingbirds are found at many elevations with wide temperature variations. The family ranges from Tierra del Fuego off southern South America, to Alaska. It is most abundant in the northern Andean mountains of South America. Hummingbirds live in every type of habitat. In the United States, the Ruby-throated Hummingbird (*Archilochus colubris*) is the only species in the entire area east of the Rocky Mountains. In the southwest, there are fourteen species. In California, the resident species are Anna's, Rufous, Black-chinned, Allen's, Costa's and Calliope. All are colorful and attractive and are found from the coast to the desert.

We recommend the following diet for hummingbirds in captivity and for birds visiting home feeders:

#### *Daily Diet for Hummingbirds*

1 quart water  
1 cup cane sugar  
1 tsp. Super-Hydramin Powder (vanilla flavor) or Geval

Mix thoroughly and place in feeders, which should be cleaned thoroughly each time the mixture is changed. Any extra liquid should be stored in a clean glass jar in the refrigerator.

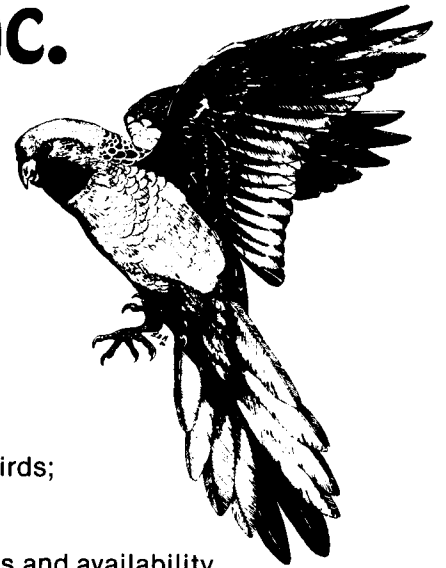
Drosophila (fruit flies) should be released into an aviary at 8 a.m. and 4 p.m. ●

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