BEE HUMMINGBIRD

A BIRD SO SMALL IT FITS IN YOUR WALLET

SIZE

The bee hummingbird (*Mellisuga helenae*) is the smallest living bird in the world. The lenght of the male bee hummingbird (from the tip of its bill to the point of its tail) is 5.5 cm which is approximately ***as long as the short side of a creditcard***.

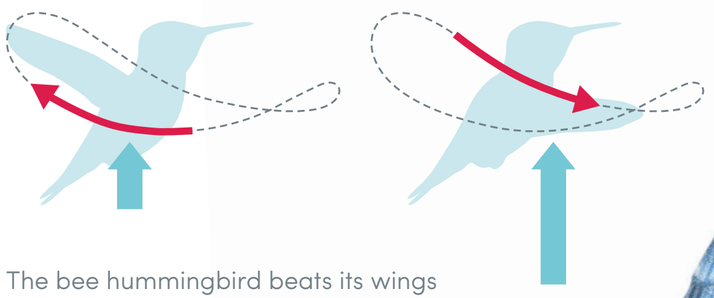
	♂	♀
lenght:	5.5 cm	6.1 cm
weight:	1.95 g	2.6 g

HABITAT

This hummingbird is ***only found in Cuba*** and doesn't migrate elswhere. The subtropical climate of Cuba offers plenty of blooming flowers that provide nectar as food, all year round. The Cuban name for the bee hummingbird is zunzuncito.

FLYING

Hummingbirds do not flap their wings up and down to fly like most birds do. Instead ***they rotate their wings from the shoulder, creating an upwards lift on both forward and backward stroke, while their wingtips trace a figure eight***. This way they can hover like a helicopter and fly backwards to retreat from a flower they've been feeding on.

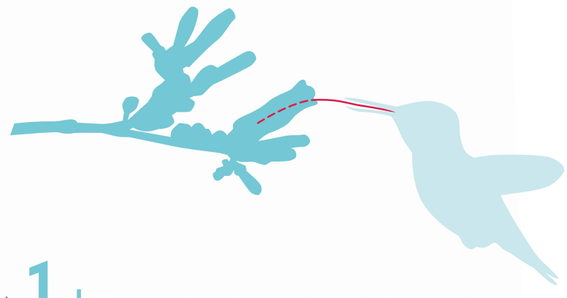


The bee hummingbird beats its wings

80-200 times/sec.

FEEDING

The bee hummingbird feeds mainly on ***nectar from flowers***, by moving its tongue rapidly in and out of its mouth. In the process of feeding, the bird picks up pollen on its bill and head. When it flies from flower to flower, it transfers the pollen. In this way, the hummingbird plays an important role in plant reproduction.

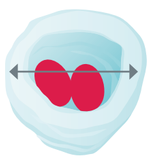


In **1 day** the bee hummingbird may visit

1,500 flowers

NESTING

The female bee hummingbirds builds a cup-shaped nest of about 2.5 cm in diameter. She lays ***one or two eggs*** at a time, each about the size of a coffee bean.

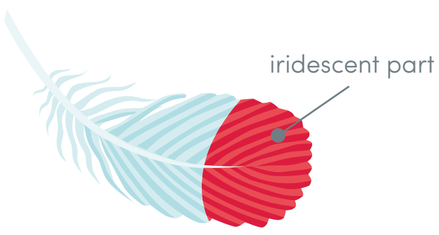


2.5 cm

IRIDESCENCE

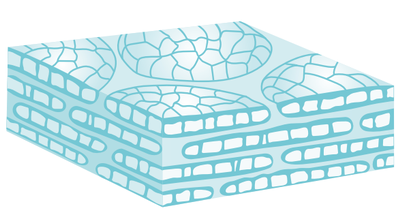
The shiny headfeathers of a male bee hummingbird are iridescent: they change of color when looked upon from a different angle. This way he can choose to stand out and attract a female or impress a rival, or he can choose to be less noticable and blend in with the environment. Iridescent colors are not made by pigment, but by layers in the microscopic strucure of the feathers that reflect and refract sunlight in different colors in the same way a soap bubble does. Let's take a closer look...

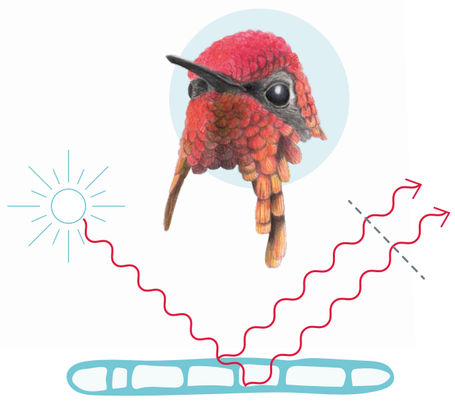
1 • Hummingbird feather
Feathers are made of keratin and consist of a central shaft with sidebranches: ***the barbs***.



2 • Layers of melanosomes
Inside the barbs of ***the iridescent part of the feather,*** are layers of ***melanosomes***.

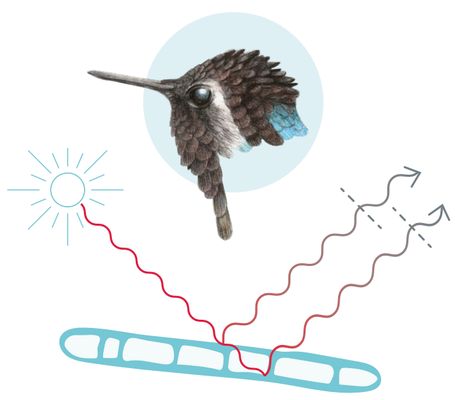
Melanosomes are pancake shaped melanin platelets filled with pockets of air that reflect and refract sunlight (dorsal view).





3a • Melanosome & lightwaves *in phase*
A melanosome reflects and refracts sunlight like a bubble of soap: sunlight is reflected from both the outer ánd the inner surface.

If a lightwave reflects from both surfaces in such a way that the waves' peaks are perfectly aligned, the waves are ***in phase*** and the result is an intense and bright red color.



3b • Melanosome & lightwaves *out of phase*
When the light waves are o***ut of phase*** they cancel each other out completely, and there is an absence of color which we see as black.

When the waves are neither exactly ***in*** nor ***out of*** phase, a dull color will be produced.

Infographic & art work: www.jeannedesign.nl Jeanne design

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