

Campylopterus ensipennis (White-tailed Sabrewing)

Family: Trochilidae (Hummingbirds)

Order: Trochiliformes (Hummingbirds)

Class: Aves (Birds)



Fig. 1. White-tailed sabrewing, *Campylopterus ensipennis*.

[<http://www.flickr.com/photos/findlayfotographics/5977307363/in/photostream/>, downloaded 11 November 2012]

TRAITS. Hummingbirds are the smallest birds in world yet the white-tailed sabrewing, *Campylopterus ensipennis*, is one of the largest of the hummingbirds (12 cm) and weighs approximately 10 g (Hilty 2003). This hummingbird is dark green in colour which reflects iridescent specks of light green when the sun falls on its feathers and the wings have blue-black feathers. The male's throat is navy and royal blue in colour while the female's is more greyish as males tend to be more brilliant attract the females. They have three pairs of long predominantly white tail feathers (West and Butler 1977). The males tend to be a little larger than the female (West and Butler 1977). They have small feet and prefer to fly than walk. They have a black, long and thin curved bill and tongue which is extendable to enable them to extract nectar when feeding from the flowers (Fig. 1). Their muscular and skeletal form allows them to be adapted

for the ability to hover with 10 to 15 wing beats per second and also allow flight in the backward and forward direction (West and Butler 1977; Camfield 2004).

ECOLOGY. *Campylopterus* were mostly found to inhabit around the mountainous areas where the mists and clouds are hovering over the mountains a majority of the time. This is known as a montane forest, where there are many more varieties of nectar flowers as well as insects available and have less competition from other birds and animals for the nectar and insects. *Campylopterus* are less attracted to the drier area of the mountain and the varieties of food species are less abundant and rich in nectar. They prefer the lower forest margins where there is grassland surrounding scattered vegetation and larger diversity of flowers rich in nectar and insects to select from (West and Butler 1977). *Campylopterus* are sometimes seen in urban areas with the presence of banana plantations and other agricultural crops as well as home gardens and feeders (Camfield 2004). *Campylopterus ensipennis* being an endangered species as their habitats were destroyed by hurricane Flora in Tobago in 1963, are confined to Tobago main ridge as well as Venezuela coastal ridges (Camfield 2004).

SOCIAL ORGANIZATION. *Campylopterus ensipennis* are solitary animals where they are usually alone except when courting and nesting. They are polygynous where males have more than one female (Camfield 2004). The field project conducted by Hayes (2009) found that usually two to four males were found in leks. Lek polygyny is where the males defend territories which are small and has low resources by perching and watching for intruders (Fig. 2). They will be aggressive to intruders even of same species (Fig. 3). The females visit, choose dominant male, copulates with him and leaves. The males take no part in the parental care (Goodenough 2008).

ACTIVITY. *Campylopterus* perch and watch for intruders into their territories, warn them off with calls and hovering display, and will be aggressive if it has to using their bills as weapons (Figs 2 and 3). Their ability to fly backwards allows them a greater advantage to escape and lose predators. The females visit the lek in search of a dominant male and copulate with him before it leaves. The male displays flights up to 30 m and then dive in front of the female which helps the female to choose. Their metabolic rate is high so they perch 70% of the time as well as foraging for food to meet their needs. The female alone show parental care by constructing nest, incubating and feeding hatchlings (Fig. 4) (Camfield 2004).

FORAGING BEHAVIOUR. *Campylopterus ensipennis* diet comprises mainly of nectar from flowers and small insects such as ants spiders and wasps. Their bills are of appropriate length, thinness, shape as well as specialized tongue to effectively take up nectar from the flowers which they gather the nectar from (Fig. 1). Their high rate of metabolism results in them drinking a large volume per day. They have a systematic way of feeding where they will return to the flowers when their nectar resources are renewed. The muscular and skeletal structures of their wings have allowed them to hover directly over the flower in order to obtain the nectar with their tails cocked up (Fig. 1) (Camfield 2004; Johnson 2012).

COMMUNICATION. Vocal communication: *Campylopterus ensipennis* voice is loud with respect to its size (Hilty 2003). Their calls are short high pitched repeated chirps of humming sound. Calls to alert others and detour predators are made when threatened (Camfield 2004). The

males sing often in the day usually in the early morning and in the late evening (Johnson 2012). The hatchlings make begging calls when mother is not in sight and when they are hungry (Camfield 2004).

Visual communication: Colour vision is present allowing them to see the coloured petals of flowers which attract them to feed. The males being brilliant in colour is a measure used by females to attract attention and used to analyse the preferred mate (Camfield 2004).

Physical communication: The aerial display of males flying high and dive to the females is signaling his interest and allows the female to choose if she wants to mate with him. If she approves together they display aerial courtship (Camfield 2004).

SEXUAL BEHAVIOUR. *Campylopterus ensipennis* are polygynous, where the males mate with a number of females (Camfield, 2004). Mating season is usually January until April where nectar availability is high as courtship requires energy output (Hayes 2009). The brilliant colour of the males attract the female visitors which as well as their singing, which they then select the most dominant and together they display aerial courtship where the males ascend to great heights and dive in front of the female. The female then leaves the lek. They then provide maternal care without the aid of the males. The females are the ones that are responsible for the construction of high nest, which are 'cup' shaped to provide greater protection against predation, incubating the eggs until it hatches and parental care after the eggs hatch (Fig. 4) (Camfield 2004). Their clutch comprises of two white elliptical shaped eggs about 12 mm laid 48 hours apart. They incubate the eggs for 16-19 days.

JUVENILE BEHAVIOUR. Hatchlings have barely any feathers and eye closed (Camfield 2004). Nestlings less than one year, has tiny holes on their bill (Hayes 2009). They make begging calls to mother when they cannot see them and want them to come close by as well as when they are hungry. The young depend on their mother to regulate their body temperature since they do not have a lot of feathers to help insulate them, and their mothers feed them regularly until they learn how to fly and forage for themselves (Fig. 4). Their curious nature will cause them to observe and investigate coloured objects which they think maybe potential food and help the navigate flowers with nectar. Usually they live 6-12 years (Camfield 2004).

ANTIPREDATOR BEHAVIOUR. Predators of adult *Campylopterus* are mainly snakes however their greatest predators of the birds nest with the eggs and hatchling are bats, owls and toucans (Camfield 2004). The study carried out by Lima (1991), suggests that when the hummingbird's view becomes obscured, it tends to display anti-predator behaviour where it moves away from foraging sites near the ground and moves to high areas indicating that they are aware of their surroundings and possible risk of predation. This acts as a primary defence where no predator is seen yet it takes precautions to protect itself (Camfield 2004). Secondary defences are taken when the intruder of predator are seen. Males perch and lurk for intruders and if spotted, warning calls are given off to signal to the intruder of predator that they have been noticed and *Campylopterus* conduct hovering displays to ward off intruders (Fig 2) as their territory is very important to them and their chances of being chosen by a female as they fear being replaced by an intruder (Johnson 2012). This might pose a risk to the birds but it brings the advantage of the predator or intruder moving away and not harming them. The females being less brilliant in colour than the males allow them to camouflage thus avoid being noticed by predators. The females tend to fly in different directions when returning to its nest to prevent

form being followed by predators which poses a threat to the offspring and will mob them if threatened. They also stay nearby as the begging call form offspring may attract predators (Camfield 2004).

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Fig. 2. White-tailed sabrewing perching on tree.

[<http://www.realbirder.com/TandTBirds/White-tailedSabrewing1.JPG>, downloaded 13 November 2012]



Fig. 3. Male white-tailed sabrewing display.

[<http://www.realbirder.com/TandTBirds/White-tailedSabrewing.JPG>, downloaded 13 November 2012]



Fig. 4. Mother white-tailed sabrewing feeding hatchlings in cup shape nest.

[<http://www.geometer.org/TT2004/Photos/images/Sabrewing.jpg>, downloaded 13 November 2012]

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