Cyanerpes caeruleus (Purple Honeycreeper)

Family: Thraupidae (Tanagers and Honeycreepers)
Order: Passeriformes (Perching Birds)
Class: Aves (Birds)

Fig. 1. Purple honeycreeper, *Cyanerpes caeruleus*.

[https://www.flickr.com/photos/gavatron/5508017356/, downloaded 3 October 2014]

TRAITS. *Cyanerpes caeruleus longirostrisis* is the long billed sub-species which is only found in Trinidad. These birds have an average size of 11 cm and 12 g. These beautiful creatures show sexual dimorphism with the males having a blue to purple colour with bright yellow legs, black toenails and black lores (between eye and bill), chin, throat and bill which is long, slender and curved (Ridgely and Tudor, 1989). The female has a cinnamon head and lores, while its underside is streaked with yellow and blue-green and its belly is yellowish in colour (Fig. 1). The

flight feathers are also black with yellow green plumage on the upper parts. Its long slender beak is un-curved and dark grey in colour, there is also a bright blue moustachial stripe (Stotz et al., 1996). Juvenile males have the same colouration as females but gradually lose the green with black stripes to become smooth with a purple body, black wings with the bright yellow legs when they moult. This species is also known as the yellow-legged honeycreeper, and locally as the yellow-legged grampo.

ECOLOGY. The purple honeycreeper is a tropical species and can be found from Colombia to Venezuela, as far south as Brazil as well as on the island of Trinidad (but not Tobago) (Fig. 2). They occur up to elevations of 1400 m but are generally found below 800 m. Being tropical means they do not have to prepare for any winter periods or migration. They are a canopy dwelling species which build cup shaped nests in comparatively low nesting locations. They prefer forests but also take refuge within gardens as well as cocoa and citrus plantations (Schulenberg and Stotz, 2010). These birds share similar foraging patterns, physiology and nesting to tanagers. They are nectar feeders which prefer bromeliads and similar shaped flowers to which their beaks are adapted. There is an extensive foraging overlap between the tanagers and honeycreepers which both feed off of the juicy fruits from trees, vines and shrubs. This species also feeds on small insects which it catches by performing sallies in the air (Snow and Snow, 1971). The purple honeycreepers are able to reach the seeds within ripe open fruits like *Clusia grandiflora* by hanging upside down (Fig. 3). They feed and live in mixed flocks of birds which include tanagers, other honeycreeper species, and dacnis, and bananaquits which are in a separate family (Skutch, 1964).

SOCIAL ORGANIZATION. Their social organisation varies depending on weather or not they are breeding (Hilty and Gwynne, 2003). During the breeding season they can form flocks as large as 100 individuals, which break off into smaller groups of 5-17 birds. Foraging flocks are usually of 5-17 birds, comprising varying species. These mixed flocks usually include tanagers, bananaquits and other honeycreeper species such as the red-honeycreeper, *Cyanerpes cyaneus*, and blue dacnis, *Dacnis cayana.* They are sociable group species which are generally found within the canopy but come down around the borders of the forests (Ridgely and Tudor, 1989). The female constructs a cup shaped nest 2-3 m above the ground using moss, leaves and cobwebs which she then lines with rootlets. She lays two white eggs with brown specks on two consecutive days, these eggs are then incubated by the female. These birds are very active and restless and become more aggressive during the breeding season (Skutch, 2010). Purple honeycreepers are known for mobbing predators, for example upon hearing the call of the ferriginous pygmy owl, *Glaucidium brasilianum*. They are also known for foraging in single species groups but this is less common than the mixed species groups. They produce a high pitched zree call (Murphy, 2004).

ACTIVITY. Purple honeycreepers are very restless and active. They forage during the day on nectar from bromeliads and similar shaped flowers as well as on juicy fruits and berries such as melastomes (*Trema*) and arils (*Clusia*). They are omnivorous and spend a lot of time foraging for insects on the top and underside of leaves, they also perform sallies in the air to catch insects in mid air. The bird tucks its head under to investigate the underside of the twig or branch on which it is sitting (Stotz et al., 1996). After laying a clutch of 2 eggs the female incubates the eggs for 12-13 days before they hatch (Murphy, 2004). These birds are inactive at night.

FORAGING BEHAVIOUR. Purple honeycreepers forage in groups of 5-17 comprised of mixed species including other honeycreepers such as; red-honeycreeper, *Cyanerpes cyaneus*, and blue dacnis, *Dacnis cayana* as well as tanagers and bananaquits. Their long bills are suited for draining nectar from bromeliads and bromeliad-like flowers in the forest canopy hence they are vital in flower pollination (Murphy, 2004). The pollen from the flowers is dusted onto the bird's beak and head and sometimes onto their feet depending on the shape of the flower, when they visit another flower of the same species, the pollen is transferred. They also feed on succulent fruits like *Clusia grandiflora* and berries such as the melastomes (*Trema*) and arils (*Clusia*). At the Asa Wright Nature Centre they can be seen in large flocks drinking nectar from the nectar feeders alongside bananaquits and other honeycreepers (Fig. 4). Due to the restless nature of the species they soon become agitated and begin chasing each other by pecking at each other's wings. Purple honeycreepers also show up at the feeding trays at Asa Wright Nature Centre to eat fruits along side the green honeycreepers and bananaquits, they show favouritism towards bananas and papaya (Fig. 5). The fruits and berries of the trema tree are also a favourite of the purple honeycreeper and are abundant in tropical forests (Stotz et al., 1996). The purple honeycreeper tends to feed in mixed flocks because there is safety in numbers. This feeding in mixed flocks does not create competition as the different species all have slightly different ecological niches for food of varying sizes and shapes (Pearson and Beletsky, 2005). These birds are omnivores and catch insects and invertebrates on the underside of leaves they also put on acrobatic sallies to catch small insects in mid air.

COMMUNICATION. The thin call of the purple honeycreeper is best described as a "zree" or "zzree". The males tend to be more vocal than the females especially during the breeding season (Ridgely and Tudor, 1989). There has been no detailed assessment of the vocal communication of the purple honeycreeper as there is with the red honeycreeper. The only assessment that has been done on this species is the fact that they are most vocal at sunrise. The purple honeycreeper also responds to the call of the ferruginous pygmy owl, *Glaucidium brasilianum* (Murphy, 2004). When these birds hear the call of the owl, it indicates the presence of a nearby predator, they respond to this call by mobbing the predator in unison and begin making the loud high pitched zree sound to attract others to participate. There is visual communication at nectar feeders where individuals expose their tail and wing feathers in an attempt to ward off competitors (Hilty and Gwynne, 2003). No research has yet been conducted on weather visual communications are used in mate selection during the breeding season.

SEXUAL BEHAVIOUR. The purple honeycreeper shows strong sexual dimorphism in terms of plumage colour (more specifically called sexual dichromatism), the male having a smooth bluish to purple body with bright yellow legs, black wings, lores, beak, and two flight feathers in the tail (Skutch, 2010). The female on the other hand has a lime green body with darks stripes across the face and breast. This (and all other honeycreeper) species is monogamous, however little is still known about their breeding patterns. No scientific evidence has been conducted to indicate how mates are selected. In Trinidad their breeding time is between January to June (Skutch, 1964). After the male and female mate the female constructs the nest and lays one egg each on two consecutive days. The female then incubates the eggs for 12-13 days, after this period both parents feed the newly hatched bird by regurgitating food which it collected.

JUVENILE BEHAVIOUR. The young birds all resemble the female regardless of their sex, they are unable to fly or forage for themselves so both the male and female honeycreepers supply the young with regurgitated food. As the young males mature they moult and begin to lose the lime green colouration with stripes of the female for the bolder more vibrant blueish purple feathers of an adult male (Pearson and Beletsky, 2005).

ANTIPREDATOR BEHAVIOUR. By joining a flock the birds avoid many predators as they gain safety in numbers. Adults make alarm calls as well as they respond to the calls of the ferruginous pygmy owl, *Glaucidium brasilianum*. When the signal from the owl is received the purple honeycreepers respond by flying out all at once and mobbing the predator, making loud calls which attract even more birds to join in the mobbing (Stotz et al., 2010). Other species also join in the predator mobbing. They are a bold species despite their small size. Snakes are a common predator and are avoided by minimising the time spent on the ground and stationary, hence their constantly agitated behaviour (Pearson and Beletsky, 2005).

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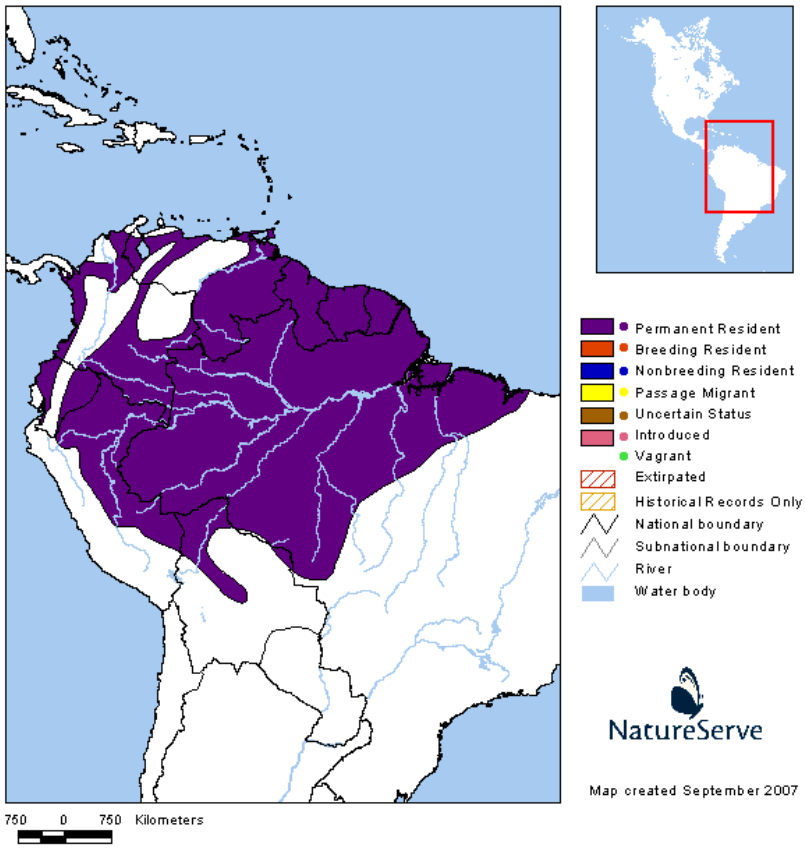

Fig. 2. Distribution of the purple honeycreeper.

[http://www.birdphotos.com/infonaturamaps/cyanerpes_caeruleus.gif, downloaded 13 November 2014]

Fig. 3. Purple honeycreeper feeding upside down on *Clusia grandiflora*.

[http://www.oiseaux-birds.com/card-purple-honeycreeper.html, downloaded 13 November 2014]

Fig. 4. Purple honeycreepers and bananaquits gathered around a nectar feeder, feeding.

[http://www.ttnaturelink.com/wp-content/uploads/2013/09/Asa-Wright-Nature-Centre-house-trinidad-wildlife-feeder3-flora-fauna.jpg, downloaded 14 November 2014]

Fig. 5. Mixed flock of honeycreepers, including the purple honeycreeper, feeding on food trays.

[http://firepanjewellery.com/wp-content/uploads/2014/03/feeding-table-at-asa-w-570x525.jpg, downloaded 14 November 2014]