

# Norantea guianensis: a vine and its birds

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Time for a Photospot with a difference. Rather than concentrating on a single species of bird, a pair of regular *Neotropical Birding* contributors focuses on a species of tree in French Guiana—and examines its relationship with Neotropical birds.



1

**F**or a vine flowering and fruiting high up in the canopy of its supporting tree, getting flowers pollinated and seeds dispersed is no straightforward task. Birds are welcome, and often glamorous, assistants. The Red-hot Poker Vine or Red Popcorn Vine *Norantea guianensis*—a Neotropical vine common in French Guiana—is an outstanding example of how plants profit from the self-interest of nectarivorous and frugivorous birds. In order to pollinate its flowers and to disperse its seeds, the vine rewards avian visitors with nutrition: first, nectar and, later, ripe berries.

## Red-hot Poker Vine

A member of the Marcgraviaceae family, the Red-hot Poker Vine (Figs. 1–2) is a semi-epiphytic, climbing shrub (Puccio 2016) that can grow to a

height of 20 m when its branches are supported by a ‘host’ tree. Blooming year-round, Red-hot Poker Vine flourishes in the canopy of tall trees, where it can reach considerable dimensions and compete with its host.

The inflorescences of a Red-hot Poker Vine are terminal spikes up to 80 cm long, carrying numerous small, sessile and hermaphrodite flowers on the upperside (Figs. 3–6). These discrete flowers have a corolla with fine, tiny, violaceous, and pointed petals. These open gradually, so that flowering progresses along the spike. The most obvious part of each flower is a hanging orange to reddish bract with a long narrow base similar to a small stem (Figs. 3, 5). These bracts are c.2.5 cm long and arranged on both sides of the flowering spike (Figs. 3, 5–6; Puccio 2016).

## Tanguy’s tree-top observations

Between 2009 and 2012, TD spent a total of 17 days, divided between three sites in French Guiana, sat in the canopy of trees supporting a Red-hot Poker Vine (Deville 2011). Specifically, TD observed and

1 Flowering Red-hot Poker Vine *Norantea guianensis* with female Fork-tailed Woodnymph *Thalurania furcata*, Abattis Kotika, French Guiana, January 2012.

All images taken by Tanguy Deville. Unless otherwise specified, the location is Réserve Naturelle Nationale des Nouragues, French Guiana.

>> PHOTOSPOT A VINE AND ITS BIRDS



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**2** Red-hot Poker Vine *Norantea guianensis* flowering in the forest canopy with Red-legged Honeycreeper *Cyanoerpes cyaneus*, March 2011. Note two spikes with unripe berries (on the left).

**3** Male Fork-tailed Woodnymph *Thalurania furcata* probing the nectariferous bracts on both sides and the small flowers on the upper side of the flower spike. March 2011.

**4** Male Red-legged *Cyanoerpes cyaneus* (left) and male Green Honeycreepers *Chorophanes spiza* (right) probing Red-hot Poker Vine *Norantea guianensis* flowers for nectar, March 2011.



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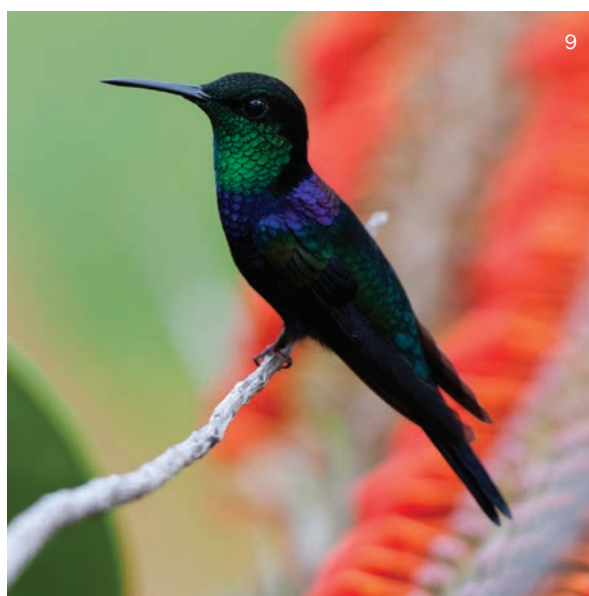
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**5** Male (right) and female (left) Red-legged Honeycreepers *Cyanerpes cyaneus* on a Red-hot Poker Vine *Norantea guianensis* flower spike, March 2011.

**6** Male Red-legged Honeycreeper *Cyanerpes cyaneus*, March 2011.

**7** Male Green Honeycreeper *Chlorophanes spiza* probing the nectariferous bracts, March 2011.

**8** Bananaquit *Coereba flaveola* eating ripe berries, May 2011. Note the small black seeds in the rosy flesh.

**9** Male Fork-tailed Woodnymph *Thalurania furcata*, Abattis Kotika, January 2012.

>> PHOTOSPOT A VINE AND ITS BIRDS



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**10** Yellow-backed Tanager *Hemithraupis flavicollis* on a spike with unripe berries, May 2011.

**11** Paradise Tanager *Tangara chilensis*, May 2011.

**12** Black-faced Dacnis *Dacnis lineata*, May 2011.

**13** Male Purple Honeycreeper *Cyaneus caeruleus*, May 2011.

**14** Female Purple Honeycreeper *Cyaneus caeruleus*, May 2011

**15** Immature male Red-legged Honeycreepers *Cyanerpes cyaneus*, May 2011.

photographed nectarivorous birds visiting flowering *Norantea guianensis* vines in the Montagnes des Chevaux (04°43'N, 52°25'W; 29 January 2009), Réserve Naturelle Nationale des Nouragues (04°04'N, 52°44'W; 3–7 March 2011) and Abattis Kotika (03°57'N, 54°18'W; 14–18 January 2012). The birds fed on nectar produced by the vine flowers, thereby hopefully pollinating them.

TD returned to Réserve Naturelle Nationale des Nouragues, sitting in the canopy of two different trees on 2 May and 4–8 May 2011. This time TD had purviews over two fruiting *Norantea guianensis* vines, observing and photographing frugivorous birds that arrived to consume the ripe berries, subsequently dispersing the vine's small blackish seeds with their droppings.

## Pollination and pollinators

Distances between individual flowering *Norantea guianensis* are sometimes considerable, so the vine cannot entrust pollen to successful dispersal by wind as the probability of fertilisation would be too low. Accordingly, the colourful bracts—visible from afar—produce abundant nectar to attract flying pollinators such as nectarivorous birds. While feeding on nectar, parts of the visiting birds become dusted with pollen, which the birds then transport to the flowers of another vine, resulting in cross-fertilisation. Once flowers are pollinated, the bracts cease producing nectar and fall to the ground.

Red-hot Poker Vine flowers are mainly visited by Red-legged *Cyanerpes cyaneus* (Figs. 2, 4–6) and Green *Chlorophanes spiza* honeycreepers (Figs. 4, 7). TD also noted hummingbirds such as Crimson Topaz *Topaza pella*, Grey-breasted Sabrewing *Campylopterus largipennis* and, particularly, Fork-tailed Woodnymph *Thalurania furcata* (Figs. 1, 3, 9). He also observed thraupids such as Spotted *Tangara punctata* and Opal-rumped *T. velia* tanagers, Purple Honeycreeper *Cyanerpes caeruleus* and Bananaquit *Coereba flaveola*. More surprising visitors were Golden-winged Parakeet *Brotogeris pyrrhoptera*, Blue-headed Parrot *Pionus menstruus* and Dusky Purple-tuft *Iodopleura fusca*.

## Seed-dispersal by frugivores

The unripe berries of a Red-hot Poker Vine, which appear following flowering, are green and do not attract frugivorous birds. It takes the fruits nearly two months to mature. When ripe, the dehiscent berries pop open (i.e. along a predetermined

line of weakness; Puccio 2016) and the rosy flesh dotted with small black seeds becomes available for anything that wants to eat it (Fig. 8).

Far more species of birds consume the vine's berries than feed on its nectar. The berries were mainly eaten by tanagers, such as Yellow-backed *Hemithraupis flavicollis* (Fig. 10), Flame-crested *Tachyphonus cristatus*, Red-shouldered *T. phoenicius*, Paradise *Tangara chilensis* (Fig. 11), Spotted, Bay-headed *T. gyrola*, and Opal-rumped. Longer-billed birds observed to ingest Red-hot Poker Vine berries included Black-faced Dacnis *Dacnis lineata* (Fig. 12), Purple (Figs. 13–14), Red-legged (Fig. 15) and Green honeycreepers (Fig. 16), plus Bananaquit *Coereba flaveola* (Fig. 8).

Other species observed feeding on the berries were Guianan Trogon *Trogon violaceus*, Black-spotted Barbet *Capito niger*, Guianan Toucanet *Selenidera piperivora* (Fig. 17), Yellow-throated Flycatcher *Conopias parvus*, Tropical Kingbird *Tyrannus melancholicus*, Tiny Tyrant-Manakin *Tyrannetes virescens*, White-throated *Corapipo gutturalis* (Fig. 18) and White-crowned manakins *Dixiphia pipra*, Red-eyed Vireo *Vireo olivaceus* (Fig. 19), and Golden-sided Euphonia *Euphonia cayennensis* (Fig. 20).

## ACKNOWLEDGEMENTS

This Photospot results from a project proposed and realised by the Association Semilimax to study canopy-dwelling birds in French Guiana. This project is supported by DEAL Guyane (Direction de l'Environnement, de l'Aménagement et du Logement de Guyane) and by the Parc National de Guyane. TD is grateful for permission granted for him to work in the Réserve Naturelle Nationale des Nouragues, which managed by the GEPOG (Groupe d'Étude et de Protection des Oiseaux en Guyane) and the ONF (Office National des Forêts).

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>> PHOTOSPOT A VINE AND ITS BIRDS



**16** Male Green Honeycreeper *Chlorophanes spiza*, May 2011.

**17** Male Guianan Toucanet *Selenidera piperivora*, May 2011.

**18** Male White-throated Manakin *Corapipo gutturalis*, May 2011.

**19** Red-eyed Vireo *Vireo olivaceus*, May 2011.

**20** Immature male Golden-sided Euphonia *Euphonia cayennensis*, May 2011.

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