

# Bowerbird florivory: Tooth-billed Bowerbird and Spotted Catbird feeding on flowers of *Calliandra* sp.

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## Abstract

Bowerbirds (Ptilonorhynchidae) are specialist frugivores, but consume invertebrates when breeding and occasionally feed on other plant material. Here I report observations of Tooth-billed Bowerbird (*Scenopoeetes dentirostris*) and Spotted Catbird (*Ailuroedus maculosus*) consuming flowers of *Calliandra* sp. (*C. haematocephala*), an ornamental introduced garden plant.

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Handling editor: Miriam Goosem

Citation: De Geest P. 2020. Bowerbird florivory: Tooth-billed Bowerbird and Spotted Catbird feeding on flowers of *Calliandra* sp. *North Queensland Naturalist* 50: 8-11.

Bowerbirds (Ptilonorhynchidae) are specialist frugivores, but feed on other plant material as well: flowers (buds, petals, stamens and nectar), leaves (leaf buds, shoots, stems and petioles) and sap (Frith & Frith 2004). During the breeding season they also consume invertebrates. For the Tooth-billed Bowerbird (*Scenopoeetes dentirostris*) and Spotted Catbird (*Ailuroedus maculosus*) of north Queensland rainforests, the percentage of feeding records involving consumption of flowers or parts of flowers (florivory) is very low: <2% for Tooth-billed Bowerbird and <3% for Spotted Catbird (Frith & Frith 2004, 2009). Spotted Catbird has been observed consuming the flowers of *Freycinetia excelsa*, *Polyscias australiana*, *Austromyrtus* sp. and an orchid, and Tooth-billed Bowerbird the flowers of *Elaeocarpus foveolatus*, *Acmena resa* and *Morinda umbellata* (known by the Qld. Herbarium as *Gynochthodes umbellata*) (Frith & Frith 2004). A photo by Roland Seitre in Frith and Frith (2009) shows a Tooth-billed Bowerbird consuming flowers of a *Calliandra* sp. in Paluma in July 1999 (Roland Seitre, personal communication). Cliff Frith found Tooth-billed Bowerbirds perched in *Calliandra* sp. more than once while doing research in Paluma, but never saw the birds consuming the flowers (personal

communication). Both species of bowerbird, but mainly Tooth-billed Bowerbird, have been seen by Jun Matsui feeding on flowers of the exact same shrub where I made my observations. Matsui found the birds feeding on the flowers in the shrub described below at Lake Barrine in August and October of 2015 and photographs were obtained. Both species were found feeding in the same shrub between 2017 and 2019 according to Matsui – pointing out that the shrub became a good place to look for them (Jun Matsui, personal communication).

Here, I report my observations of Tooth-billed Bowerbird and Spotted Catbird consuming flowers of a *Calliandra* sp. thought to be *C. haematocephala* (Red Powder-puff), a large shrub planted in the Teahouse garden at Crater Lakes National Park (Lake Barrine section) in Queensland (17.2459° S, 145.6390° E) (Table 1). *Calliandra* is a genus of flowering plants in the (broadly-defined) legume family Leguminosae, subfamily Mimosoideae. *Calliandra haematocephala* is a spreading well-branched shrub or small tree up to 5 m tall native to Bolivia (Nevling & Elias 1971) (Fig. 1). Observations were made using binoculars and filmed using a DSLR camera with a 150-600mm zoom lens.

**Table 1. Observations of florivory by bowerbirds on the shrub *Calliandra* sp. in the Teahouse garden at Lake Barrine.**

Bowerbird	Date	Observation time start/end
Tooth-billed Bowerbird	07/05/2019	8.00 am / 8.10 am
Tooth-billed Bowerbird <sup>1</sup>	19/06/2019	10.45 am / 11.00 am
Spotted Catbird <sup>2</sup>	21/06/2019	9.37 am / 9.43 am
Tooth-billed Bowerbird <sup>3</sup>	21/06/2019	9.43 am/ 11.05 am

<sup>1</sup> See Fig. 2 & 3

<sup>2</sup> See Fig. 4

<sup>3</sup> See video (<https://vimeo.com/357430243>). Two birds were observed on 21/6/2019, one displacing the other around 10.00 am.

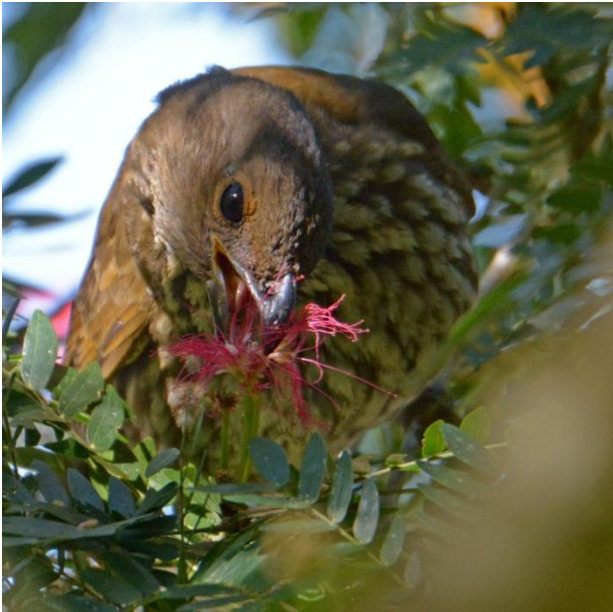


**Figure 1. *Calliandra* sp. (probably *Calliandra haematocephala*): left. flowering branch; top right. flower cluster; bottom right. flower.**

Both the Tooth-billed Bowerbird and the Spotted Catbird fed in the same manner: a cluster of flowers (Fig. 1) was approached, the bird plucked one or more flowers from it, moved and manipulated the plucked flower(s) into a better position in the bill in 2-4 moves and then ingested all that was plucked (<https://vimeo.com/357430243>). The birds gulped the flowers like they gulp the fruit they eat (Frith & Frith 1999; 2004). Neither species was observed to masticate the flowers. The birds most often kept taking flowers until the whole inflorescence was consumed.

Other birds were seen taking nectar from flowers in the same shrub: Dusky Myzomela (*Myzomela obscura*), Scarlet Myzomela (*Myzomela sanguinolenta*), Lewin's Honeyeater (*Meliphaga lewinii*), Bridled Honeyeater (*Bolemoreus frenatus*), Brown Honeyeater (*Lichmera indistincta*), Macleay's Honeyeater (*Xanthotis macleayanus*) and Eastern Spinebill (*Acanthorhynchus tenuirostris*).

My long-term observations of honeyeaters feeding on the nectar of this shrub in the Teahouse gardens, between 2011 and 2019, almost all year long and throughout the day, suggest that the



**Figure 2. Tooth-billed Bowerbird plucking a flower from a flower cluster of *Calliandra* sp.**

flowers produce substantial amounts of nectar. In consuming flowers, these bowerbirds may be motivated, either partially or entirely by the nectar they contain, which likely adds a useful amount of carbohydrates to the birds' diet. During winter, Spotted Catbirds, but more specifically, Tooth-billed Bowerbirds normally feed silently and inconspicuously among dense canopy foliage (Frith & Frith 2009). Tooth-billed Bowerbirds will occasionally visit fruiting trees in isolated pastures up to 100 m away from the rainforest edge to feed nervously on citrus and avocado (Frith & Frith 2004, 2009). However, it is unusual to find them feeding in an open space such as observed here, although the rainforest edge was no more than 10 m away.

The observations made here are limited in time and frequency, but they suggest that when the opportunity arises the degree of folivory in both

species, but especially in the Tooth-billed Bowerbird, is higher than has been described (Frith & Frith 2004, 2009). It seems to suggest that when these two species of bowerbird can access the flowers of the shrub here described they will do so more often than expected. This could partially be explained by the amount of nectar produced by this *Calliandra* sp., but also by the fact that this particular shrub was close to rainforest and flowering when fruit is less abundant.

### Acknowledgements

I would like to thank Alan Gillanders and Cliff and Dawn Frith for providing access to resources and discussions, Roland Seitre for providing details about his image of a Tooth-billed Bowerbird feeding on *Calliandra* sp., Jun Matsui for sharing his observations, Don Franklin for providing access to resources, discussions and editing the draft, Miriam Goosem for editing the final draft and the reviewer for the helpful comments.

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**Figure 3. Tooth-billed Bowerbird manipulating and gulping a *Calliandra* flower.**





Figure 4. Spotted Catbird feeding on a *Calliandra* sp. flower, holding one flower in its bill.