

# Nesting behaviour of the Rufous-headed Woodpecker *Celeus spectabilis*

by Huw Lloyd

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The Rufous-headed Woodpecker *Celeus spectabilis* is a near obligate bamboo specialist whose distribution is restricted to thickets of bamboo, *Guadua weberbaueri*, in southwestern Amazonia (Kratter 1997, Parker 1982, Parker *et al.* 1996) with an isolated record in eastern Brazil (Short 1982). The following description represents the first account of the nesting behaviour of *C. spectabilis*. The nest of this species was first described by Kratter (1998). Like many aspects of its biology, its nesting behaviour, and that of other members of the genus *Celeus*, remain largely unknown (Kratter 1998).

## Nest location and habitat

The nest was located in Old Floodplain forest habitat (Phillips 1993) at the Sachavacayoc Centre (12°51'S, 69°21'W), situated on the south bank of the Rio Tambopata, in the Zona Reservada de Tambopata-Candamo, in Madre de Dios, south-east Peru. It was discovered on 15 July 1998 in a live *Cavanillesia* tree *c.* 18 m tall, with a diameter at breast height (DBH) measuring 1.03 m, situated immediately adjacent to the tourist trail at the Centre, *c.* 85 m from the lodge. The nest hole was 1.75 m above the ground. *Cavanillesia* is one of the distinctive genera of Neotropical trees; the trunk is essentially a hollow cylinder, with balsa-like pith and characteristic smooth reddish papery bark, patterned with numerous 'rings' (Gentry 1994). The nest hole faced NW and measured 15.0 cm x 9.3 cm, with the long axis vertically orientated. Measurements of the inside cavity were not obtained in order to minimise disturbance. The vegetation around the nest tree was dominated by *Heliconia* sp., (ground) *Guadua weberbaueri* bamboo (understorey) and two species of palm trees (*Astrocaryum* sp., and *Iriateia deltoidea*).

## Nesting behaviour of *Celeus spectabilis*

Limited observations at the nest were made from 15 July until 29 July 1998. Observations were conducted between 0600 h to 1230 h, and in the afternoon between 1400 h and 1745 h. The nest contained one chick, which was not observable until 22 July. On a previous visit to Sachavacayoc Centre between 8 and 25 May 1998 there was no evidence of the nest in the tree, and nest construction and incubation were therefore estimated to have begun in the time between visits to the Centre, on 25 May and 13 July 1998. The age of the chick could not be accurately determined, but it was already well-feathered. It was extremely sensitive to the presence of observers and tourists on the trail, within 15 m from the tree, the chick often responding with



aggressive 'hissing' calls. This occurred even during the night. At this time the hole was half sealed with resin, which had been released from a wound in the tree made around the inner rim of the nest entrance. Neither the adult male nor female was observed roosting with the nestling. During the 6 days following the chick's discovery, it called frequently. Both parents perched on the bamboo stems behind the nest tree often calling. On one occasion the male approached the nest, perching on bamboo stems that were *c.* 5 m from the entrance. On 16 July the female was captured in a mist net placed 5 m from the tree. She was measured, photographed and released at the nest site (bill length=25.6 mm; bill width=11.4 mm; tail length=156 mm; wing length=149 mm; tarsus=29.8 mm).

When the chick was first seen, the nest hole was almost two-thirds sealed with a fresh plug of resin from the entrance rim, caused by the constant pecking of the chick inside the hole. This resin, rubber-like in texture, oxidised after *c.* 8 h. The young bird perched high up in the nest entrance behind the resin. It appeared almost fully feathered, with a rufous head, no red facial markings (identical to the adult female), with the blue eye bordered by a complete blue orbital ring, and an ivory white bill. The male was observed on several occasions perched on the nearby bamboo stems between 1530 h and 1700 h. The female remained within the bamboo thicket behind the tree.

At 1150 h on 23 July both parents were seen flying and calling loudly around the nest tree in response to the presence of a foraging troop of 30 Squirrel Monkeys *Saimiri sciureus* passing through the area. The nest was never seen to be approached by the troop. On 26 July, possibly the same troop of Squirrel Monkeys again passed through the area accompanied by at least 10 Brown Capuchin Monkeys *Cebus apella*. The troop did not seem to notice the nest and their presence elicited no aggressive or defensive behaviour from the parent birds.

Over this period of limited observations neither parent was observed feeding the nestling, and the young bird fed entirely on invertebrates captured from around the nest entrance. These invertebrates were often attracted to the fresh flow of resin. Prey items included dipterans and ants. Dipterans were caught by pecking action, while the ants were caught by the more typical tongue probing. The nestling did not eat coleopterans and caterpillars which had also been attracted to the resin. Both parents were seen to forage over a large area during this period. The male was often seen drumming on live bamboo stems *c.* 300 m from the nest tree and, on another occasion, inspecting the trunk of a strangler fig (*Ficus* sp.) for prey items.

The first observations of the parents feeding the chick were made on the mornings of 27 and 28 July. On each occasion the chick was fed solely by the male. Prior to the male feeding the chick, both parents flew within 10 m of the nest, calling to the chick from perches on live or dead bamboo, or from palm trees, at heights of 2 m to sub-canopy level. Only the male came close to the nest, landing on nearby bamboo stems. He made numerous approaches to feed the young bird who, during this time, had completely extended its head out of the hole. During these approaches the male perched for no longer than 10 s before retreating to a bamboo stem behind the tree.



In response to this, the young bird became increasingly agitated, and it pecked energetically at the hardened resin. On two occasions the nestling attempted to climb out of the nest but appeared unable to push its way past the resin plug. To feed the chick the male first perched on nearby bamboo stems, before flying to the hole and perching on the resin. The young bird stopped calling, allowing the male to regurgitate food items in two bouts over a period of approximately 25 s before flying away. The male repeated this on 3 further occasions, each time perching on bamboo stems before landing on the resin plug to feed the young bird. All the feeding bouts observed occurred within 30 min of each other. Following each feeding bout, the chick disappeared from the nest entrance and ceased calling for *c.* 15 min before re-appearing at the entrance and calling again.

At 0625 h on 29 July the chick left the nest. The resin plug remained in place around the nest entrance. The chick immediately fell to the ground, calling loudly. Both male and female flew to the ground and landed either side of the chick. For the next 30 min both parents enticed the chick from the base of the tree by calling to it, then flying short distances from the chick and perching within 1 m of the ground. The chick followed its parents by hopping along the ground or attempting to fly. Only on two of these attempts did it manage to fly upward and perch less than 1 m from the ground. The birds moved out of view and stopped calling once they were more than 30 m from the nest tree.

## Discussion

Although the precise age of the chick and the exact timing of nest construction was unknown, estimations for these parameters fall within the 'probable' breeding season given by Winkler *et al.* (1995). Kratter (1998) also discovered this species nesting in the month of June, at which time, given the nature of visits by the parent birds to the nest, he estimated the birds to be incubating. The nest discovered by Kratter (1998) was located in an 18 m tall dead snag, in bluff-top *Guadua* bamboo habitat at the nearby Tambopata Research Centre (13°08'S, 69°36'W) also situated along the Rio Tambopata. This nest tree, 0.6 m DBH, was partially decomposed, lacked bark and the wood was quite soft (Kratter 1998). However there was no resin plug located at the nest hole entrance. The resin plug in the *Cavanillesia* tree at Sachavacayoc provided a semi-permanent seal to the nest hole whilst also providing the adults with a perch from which to regurgitate food to the chick and preventing at least one of the adults from roosting with the chick. It also attracted numerous invertebrates to the hole upon which the chick fed exclusively for a number of days. The lack of feeding visits made by the parents is undoubtedly due to both parent birds being aware of the presence of the observers, rather than a deliberate feeding adaptation to nesting in this tree species. Kratter (1998) suggests that the amount of suitable nesting habitat is limiting to *C. spectabilis* because it nests in large dead trees which have softwood and a large DBH (>0.5 m). The observations of the *Cavanillesia* nest suggest that *C. spectabilis* also nests in tall, live trees, with a large girth, and that an important factor



in nest site selection for this woodpecker species is the presence of soft wood. This feature is characteristic of the breeding of other members of the genus, e.g. *C. castaneus*, *C. elegans* and *C. loricatus* (ffrench 1973, Oniki & Willis 1982, Short 1982, Slud 1964, Stiles & Skutch 1989, Winkler *et al.* 1995). Such trees are probably more common in floodplain forest habitats with understorey vegetation dominated by *Guadua* bamboo, rather than in pure bluff-top bamboo habitats (pers. obs). *Cavanillesia* species are 'rare' in Tambopata (Phillips, pers. com), only *C. hylogeiton* having been recorded in Madre de Dios and in the neighbouring Departments of Ucayali and Huanuco, while *C. umbellata* has been recorded in other locations around Peru, but not in Madre de Dios (Phillips, pers. com). It is not known whether *Cavanillesia* is more abundant in any one of the 9 forest types currently described for the Tambopata region by Phillips (1993).

*C. spectabilis* requires large territories within its bamboo habitats (Kratter 1997), and population densities are thus low (Kratter 1995). Population density estimates for this species in south-east Peru range from only 1.85 pairs per km<sup>2</sup> in bluff-top bamboo habitat, to 2.5 pairs per km<sup>2</sup> in floodplain forest bamboo and river edge forest bamboo habitat (Kratter 1995). This highlights the need to conserve large areas of floodplain forest bamboo habitat, containing large trees with softwoods such as *Cavanillesia* species, alongside pure bluff-top bamboo habitats to provide suitable nesting areas for this near obligate bamboo specialist. Currently, floodplain forests are the most threatened in the Tambopata region (Phillips *et al.* 1994). Parker *et al.* (1996) considered the conservation status of *C. spectabilis* as 'vulnerable'. Given its low population density, its restriction to *Guadua* bamboo habitats, the extent of these bamboo habitats in southwestern Amazonia (see Kratter 1995), and the paucity of information regarding the *obrieni* subspecies in eastern Brazil (considered as 'threatened' by Parker *et al.* 1996, and known from only one specimen), this woodpecker formally deserves near-threatened status.

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## **Records of the Black-banded Woodcreeper *Dendrocolaptes picumnus* in Chiapas, Mexico**

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The distribution of the Black-banded Woodcreeper *Dendrocolaptes picumnus* in Mexico has been considered restricted to the Central Plateau of Chiapas (Alvarez del Toro 1980). Howell & Webb (1995) also reported it on Atlantic Slope, but information about this species in Mexico is limited. Here, we report its occurrence in three physiographic regions of Chiapas: the Northern Highlands, the Eastern Highlands and the Sierra Madre of Chiapas, based on specimens deposited in museums, and on a specimen collected on 1995. These records represent an extension in its known range in Chiapas and provide additional information to that of Howell & Webb (1995). Additionally, the species had not been collected in Mexico since 1963, and no specific information has been published for this species in Mexico since 1957.



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